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LOVE-LIFE IN NATURE

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The Story of the Evolution of Love

By

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Translated from the German by

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PART VI
CREDO QUIA ABSURDUM

The man who does not raise
His thoughts above himself
Is unworthy of man's
Estate: his life is pelf.

ANGELUS SILESIUS.

§ 1

Before Death greeted you, you dared to
Flutter ahead into the spirit sea
And you were lost, you were ensnared too,
In that dread waste whence none gets free.
From Lenau's FAUST.

THE lake stretches out solemnly, like a blue lotus flower, in the springtime glare, and the teachings of that hoary old sage, your naked body, softly resound over it and away.

The eternal miracle of procreation and the eternal miracle of love is the fact that you are here in the bloom of youth, yet that your body had passed through all those mysteries of former times.

There is wonderful depth to the simple thought that we can read all that has passed only out of the existing, but that we are able to read it there with wide-awake eyes!

There is an eternal present in all things. Everything that has come into existence encloses the process in concentric rings of years. The eye merely must slowly find the right measure for it. And humanity's mental eye is very gradually approaching this point by a long roundabout way leading over thousands of details supplied by scientific research and logical imagination. The scientist's brain-work has stretched our measure of time.

The measure of time in itself is something subjective. You can imagine it contracted and extended.

As a human being, you ordinarily perceive everything that lies within a second as practically "one," as simultaneous, as an "instant." Yet infinitely much can be enacted in that second, one thing after another; you can consider a second to be a circle on the face of a huge clock, around which the hand creeps step by step.

If we were to picture our faculty of perception suddenly becoming very much finer, we should actually see a vast number of occurrences marching toward us in a second, one after the other, which now flash up simultaneously as one. It appears that our ordinary power of noting things can be stimulated to such a de-

gree in certain special situations, that this actually does become the case temporarily. During moments of extreme danger, we live through long chains of events that seem endless to us in a second. Probably everybody has had the experience of following a long, complicated action in a dream, which would have taken hours and even days, awake; but when you look at the clock afterwards you find you hardly nodded longer than it takes the clock to strike twelve. A fact that has often been observed about dreams undoubtedly goes back to this latter circumstance. We dream a prolonged action, which aims toward a clap of thunder or a shot. Possibly we dream about a storm coming up, or about preparations for setting off an explosion. Finally the crash comes. In that very moment we wake up and we hear the hotel porter knocking at the door of our room to wake us up. You ask yourself how that was possible. Did we dream prophetically? In reality, this whole figment of our dream got started and continued only during that tiny fraction of time comprehended by the sound of knocking. When we are awake, we perceive this as a single, momentary sensation of sound; but the dream with its swifter measure of time invented a long chain of successive events between its beginning and its end.

Conversely, we can easily imagine such transposition not only on a small scale, but on a large scale as well.

Let us imagine a measure of time, according to which a year would take on the character of a second. All the events during this year would be crowded as one into a single moment to the eye that perceived in this manner. But what would hold good for years could be imagined to hold just exactly as good for centuries, for millenniums, for millions of years even. In that case, the eye would see immeasurable chains of evolution, from original suns to planets with art and human love, all fused together in a single instantaneous picture.

Did you ever stop to think that you with your human eyes actually do see that way, in a certain sense, when you regard the present, and when your look lingers on this beautiful naked human body, this product of so much temporal evolution?

All your historical and scientific research delving into the details of the evolutionary past is really nothing else but an attempt to bring back something of that finer measure of time by infinitesimal split fractions of a second into your instantaneous vision, so that

the weave and woof of evolution may become visible in greater detail.

The naked body flashes upon your soul as a united, instantaneous photograph.

But as a matter of fact, everything that lies between the first cosmic conglomeration of matter and man is included in your body. It is comprehended in one final picture; but everything is in this picture!

In trying to read the whole previous history out of this picture, we read this "whole," piece by piece again, transposed to a magnified measure of time; we read the impressions of fractions of a second into this body again, as it were, with the help of a wonderful means of intelligence to which mankind has finally advanced: that is science.

You still are a sun, an original cell, a worm or a fish, according to how I dissect you to-day with their historical measure. You form a single, huge unit with all that has ever gone before. During this very second that I look at you here, permeated with the devout feeling "what a glorious work of art is man," in this same second your body radiates all those millions of years of evolution to me, as if from a burning-glass of time. Just as your body does not end spacially here, where your eye laughs, but in reality reaches to the sun and to Sirius, which it still bodily touches with the small piece of membrane of your eye's retina, so your temporal body does not end with this second, nor with the few years of your so-called existence as a human being. It does not end with the hundreds of thousands of years of so-called humanity; but like a cosmic Winkelried it gathers in itself all the spears of all the millions of the years and all forms in these millions of years that headed for it and which at any time and in any way were already your body in disguise.

In individual cases the instrument of our vision may still be far from perfect. What one person already holds for reading sure facts, others will still consider to be nothing but an airy dream. The danger for us is that we have to look into the things of the past and work in them at the same time. All our wisdom concerning the origin of things, which we first have to infer indirectly from what exists, suffers from the fact that the creative imagination works too arbitrarily and too quickly. Nowhere else is the conflict between both of our noblest powers of the mind, the powers of observa-

tion and creation, of reproduction and performing new deeds of our own, as possible as here, where both powers are called upon the scene in full force.

The thinker, for whom these things are not the pastime of an idle hour but represent sacred values, whose consequences he must bear in every last act and ideal of his life, is the last person who may dodge this consideration. Let us bear in mind the grave responsibility of taking man out of the golden picture book with its old dreams about God and putting him into this wild cosmic epic, picturing him in stars and primordial universes, in cells and monkeys. It is my firm personal conviction (and this whole discussion is only meant to confirm it) that none of our great ideals of life can really be endangered by focussing our vision in this new manner. Nevertheless, caution is necessary, for all our science is still young. I should like to call it green; not in the obnoxious sense, but green as a springtime bough that is just bursting into leaf.

But the simple logic of the "best possible way of thinking a thing" is already far too great, as far as the most decisive pictures are concerned.

The naked body preaches too insistently and too unambiguously.

The most pious believer of the old faith, to whom so much in this new evolutionary view is a thing of horror, will hardly want to admit that the creation of the world was designed for the utter logical bankruptcy of human reason or even as an intentional trap.

Why is man made up of animal cells; why has he a stomach, a brain, a backbone, lungs; why has his hand five fingers; why does his foot still keep the thumblike big toe of a climbing organ; why has he the specific teeth of the mammal at a specific stage?

Perhaps none of these signs keeps on being so overpowering as the form of your own naked foot. Dream on as far as you please; if you look at this foot and if there is the least little spark of true spirit in you, of that which no religious dogma ever openly dared to brandmark as a sin, you must feel the breeze that drives your sail toward the shore of those new ideas.

The old pioneers were driven there very much against their will. Old Darwin himself was anything else but a one-sidedly enthusiastic fanatic about this course. But since this wind has been blowing, not one jot or tittle has been found that really offers resistance. Logic again and again links up facts to form that simple chain which I showed you as the teachings of your naked body.

In the presence of this naked body, however, you now become aware of one thing that was not touched upon as yet in this whole last series of vivid pictures of man's more immediate ancestry, but which in all stillness continually accompanied us from a certain stage on, and which was really the most remarkable thing about the whole matter.

We invariably spoke only of your body, the individual human body—how all history entered into it and likewise emerged from it, awakened by the magic wand of the new evolutionary vision. But man, too, as he came out of the mists and primeval forests of antiquity, walked on under the spell of the great mystery of duality. Man wandered toward us as a double being, of two sexes—as Adam and Eve.

We saw how the brain of this human being gradually developed, how intelligence slowly opened the inner eyes in man, until clear, critical human consciousness, clarifying itself, at last flashed out: it was as if only now the great cry of victory, "Let there be light," went forth into the whirling mists of creation. In this light, however, this human being now saw itself split into two beings, two sexes, by the most wonderful historical dispensation.

No harder task was ever set the intelligence of this new being of light than this phenomenon of the "double being, man." Myth formed centaurs of horse and man, and griffons of vulture and lion. How weak these freaks of fancy are compared to Nature's colossal trick of fundamentally constructing this creature of intelligence, man, out of two different kinds of living bodies which, though not actually grown together, yet were eternally bound to revolve about a common centre under a deep magic spell that nothing could check, like those bright double suns that have been swinging around their common centre of gravity for myriads of years in the boundless waste of the universe. Our life levels. We have frequently spoken about that. The greatest thing in the world appears a matter of course to us in the end. What could be a more everyday matter than the sun? What more hackneyed than spring? After all, death is just a trade to the grave-digger. But then again, moments suddenly come when one encounters the everydayness of things as if it were a white phantom. We could not stand doing so every day; we have to live on thoughtlessly. But one must experience meeting this ghost from time to time—the witch that steps out of the noonday silence in the smoking grain and stops the wanderer with the

question: what is noon, what is the sun, what is the life in this grain and in you? Do you not see these tremendous mysteries? Do you not divine the demon, on whose back you are flying through the cosmos?

Wander through the glowing grain with a pretty girl. And all of a sudden you find the spectre here, too. Why must there be two of you for entire happiness? . . . There is a moment in life when every one of us, no doubt, experienced this fright over duality with full force. That was on crossing the threshold of adolescence, when the young Adam in us learned that there was an Eve and young Eve learned that there was an Adam; when we found out that there were two different kinds of human beings.

I believe there was hardly a stormier moment in the clear life of consciousness behind us than this first thrill of the knowledge that there is another human being in the world who is different from you; and you are only a half before this other one; you are only half born; you must undergo a new birth in order to become a whole by seeking a union with such a second being, a fact which absolutely falls outside all bounds of what you had hitherto even remotely considered possible in your human existence.

A quivering sensation runs through the deepest roots of our individuality. Longing, a sudden incomprehensible longing for that other one, and defiance bidden by one's own personality which so far had always felt itself to be one whole, fight out a desperate struggle. During a certain phase, the feeling of dread suppresses all others. This new knowledge appears like a sort of death sentence. Who has not at some time felt the sharp air of this early spring and quaked to the last fibre before the idea of the male, or of the female, as if before a real demon that wanted to murder us?

The second surprise, which at bottom merely came from the same direction, then became connected with this first shock as a general rule. As these two halves of the human being first united to give birth to the real, whole human being, so to speak, the mystery of actual new birth, about which the childish mind has long been meditating in most cases, became connected with the act which at first seemed so utterly inconceivable and so monstrous to the young imagination.

Thinking about where little children come from generally sets in entirely without any fright over spectres at first, long before adolescence, as a bit of funny curiosity, in the full joy of life that is not

yet torn apart. It concerns something that is essentially historical, something that lies far from the present moment. Everything historical, however, turns into a fairy-tale for a real child, just as it does for nascent civilized man; hence the old custom of relegating that question to the realm of fairy-tales. But it really is just as little trouble to place the mother at the central point of this fairy-tale. The child grew out of the mother like a flower. One can make that clear to a child without its experiencing the slightest "fright." One way or the other, whether the explanation be the mother or the stork, both remain in a fairy-tale. The mother everywhere occupies a harmonious position in the mental life of the child from the very beginning. She plays a part in all its fairy-tales as it is, just like the sun and the flowers. Why should not flowers which are little children spring up out of the mother in a fairy-tale? Then this fairy-tale will gradually pass over into genuine history without any conflict.

The shock about this too comes only with the knowledge of the antithesis between the sexes; when the female is recognized in the mother as well; when it has to become understood that behind the child there lurks the separation and carnal knowledge of the two halves of human beings. And all this knowledge is suddenly and magically illuminated by real, instantaneous lightning flashes of sensation, by hungry longing and red fear, under the burning lash of waves of young blood that chase one another. This no longer concerns something historical, fading away into a fairy-tale blue. The old, intimate love for the mother must fight with this demon. Hours come, in which its own mother, its own parents suddenly appear to this young human being as a frightful, paralyzing phenomenon of nature, hours when it seems horrible to have come into existence—to have come into existence in that way.

Pedagogues are zealously experimenting around to see how this torture too can be softened. And it is certain that our civilization of to-day as a rule drags in a whole lot of external factors which make the matter harder and which might well be dropped. But even so, one will never quite get around a certain shock to the soul life with the first conscious knowledge of dual nature and the double play of the sexes. There is too much of a necessary shaking up of the whole individual in the organic process of sexual maturity, itself for that; and this is something that one cannot obtain from being told; it has to be personally experienced. Like death, love is

too powerful for that; it has to be felt once in a while as something of a demon, otherwise it cannot force its way through in all its greatness: reconciliation can then come out of this very greatness itself. Pedagogic solicitude will have done its work sufficiently if it just cleans up so much of the incidental, accidental stupidities about sex that this act of recognition can take place cleanly and the new knowledge can live its life to the full in its own free strength. The rest must be left to faith in the strength of the human mind, which is fortified to a certain extent against such natural storms, like a tried old mountain pine, and only fails where conditions do not hold sway cleanly and where treacherous gusts take the place of the mighty storm.

In this connection, it is characteristic for both the physical and mental structure of man, that the difference between the sexes, although absolutely existing, does not appear too great to our eyes.

As you lie here naked on the grass after your spring bath, your highest individuality transfigured, purified and inwardly gilded through and through by the sunny warmth of fresh young nature, as if you had returned to nature's eternal stillness of flowers and eternal beauty of flowers in the pleasant twilight, you are really only half a human being in your sexual maturity. While your body everywhere forms a closed circle with its internal organs of respiration, digestion, locomotion and sensation, it is wide open toward the outside as far as the sexual sphere goes. A second human being follows you, even when you are all alone, like an eternal shadow, like your double. It goes to you through any and all walls like a real ghost. It rests beside you here in the grass, although not the tiniest blade is bent. And since your sex, as indicated by this sexual part, at bottom helps to determine your entire body in turn, your whole body is likewise open to that double in this sense, and if this double were actually to appear beside you here, it too would be bound to be a half, possessing an entire human body dominated by its sex. The difference in the way the bodies of the two sexes are constructed does not run to extremes by any means, however. Strictly considered, the human male and the human female are similar to a high degree.

You will recall what great differences between the sexes were possible lower down in the animal kingdom. The sperm-cell and the ovum-cell already differ considerably in form from one another

among higher organisms. If the mammalian males themselves were just colossal spermatozoa and the females colossal ovum-cells, we should have the craziest contrast in the matter of external form: the females would be round melons, while the males would about have the shape of very thin radishes, and the greatest diameter of the female's body would be more than fifty times that of the male, and the female would still be more than three times as long as the male. But we also saw how the many-celled parental bodies in the higher animal world constituted themselves as stage scenery and directors around these actual sexual partners, the sperm-cell and the ovum-cell. Their union in turn demanded all manner of special things in the way of sexual antitheses, and as a result we experienced the most paradoxical things along this line.

If man had attained his high stage of intelligence in connection with an animal body that was differently constructed, say the body of a bonellia worm or a root-crab, the human male would not only appear very diminutive beside the female, like a bat or a fly beside a fully grown human being, but judging by their forms nobody could guess that both sexes belonged to the same species of animals at all. After the fashion of those curious crabs, this dwarf male would as a many-celled animal just about have the form of a sexual organ swimming around independently. Among the best known varieties of our glow-worms, which are beetles in reality, the male alone possesses wings, while the female which has no wings resembles a little worm, but above all it externally resembles the undeveloped larva of this beetle tribe. If this were the case with us, a woman would look like an embryo her life long. Among certain beautiful butterflies of tropical regions, both sexes are proudly winged and magnificently coloured. But the female's wings have a totally different shape and colour from the male's. Certain protective adaptations came to pass here, but they were only carried out in the one sex. The female imitates a different, poisonous sort of butterfly which is inedible for birds, in so-called mimicry. If the male, for instance, is yellow with long tips like a swallow's tail, the female will show red with round wings because of that useful protective adaptation. If this difference were transferred to human beings, our males alone would have the appearance of genuine human beings; the females on the other hand would be disguised as poisonous snakes or salamanders. It also occurs among such butterflies that there are several (two or three) females of the same

species but with different colouring to the one male; say one female that is coloured like the male itself, and a second one that faithfully mimics a poisonous variety in every detail for protective reasons; or there may be two or three females, each of which copies a different strange variety. According to this method, the human male would have a handsome female majority to choose from, as follows: women having the shape of genuine human beings, and others that masqueraded as vipers or salamanders.

You cannot even begin to imagine all the paradoxical things which nature could have done to us in this respect, and which we should then have had to make the best of. On the other hand, it is clear that these extremely glaring sexual contrasts already let up noticeably in the upper ranks of the vertebrates, where the procession headed toward man.

Among birds you still find these contrasts distinctly enough; in the case of mammals, they are unmistakably on the decline, though you still find starts in this direction in spots. In the case of deer, the male alone shows the characteristic antlers; but in the case of the reindeer the female has them too. A strange northern sea mammal, the narwhal, develops only a single tooth in its jaw; in the case of the male, it gets to be two yards long, which is half as long as the entire animal: in the case of the female, it is stunted and remains sticking under the gum. In the case of one of the best known varieties of half-monkeys in our zoological gardens, the male is black as the devil while its female is a rusty red. In our case that would be equivalent to all human males being blackamoors and all women red Indians. The lion's mane, and above all the long black beard of the South American saki, impress us as being positively human, reminding us of our own proud male privilege of sporting whiskers. In certain cases among mammals, the obliteration of the external contrast between the two sexes has gone even further than it has with us, and it is interesting to picture to ourselves with how much less of a sexual contrast we could have been endowed.

In the case of a considerable number of mammals, the little double vessel in which Nature prepares the male's most precious thing, the procreative semen, does not by any means lie openly visible on the outside, beneath the body, as in our case; it is completely invisible, concealed deep within the abdomen in the vicinity of the kidneys, exactly as are the female's ovaries. Such is the case with

the duckbill and the ant-eater, the porcupine and the golden mulmul, the rock-badger and the elephant. If the same thing held good in our case, the one-half of the male organ, as we are familiar with it, would disappear entirely from view and only the genital member would be left. And even here, a further natural illusion would have been possible if what nature has carried out in the case of the sapajou of the South American jungle were repeated in the case of man. The sapajou has an internal organ of the female sexual apparatus, the so-called clitoris (about which we shall have more to say in greater detail later on) which is transferred to the outside in such fashion that the beholder, trusting only his eyes and not knowing the fine anatomical differences, must absolutely believe that this time the female sex too boasts of just as conspicuous an external sexual organ as the male. This same female organ exists in the human being, and it likewise happens in individual cases as an abnormality that this organ grows conspicuously large in size and then stands forth externally. That, however, is abnormal; the normal human road did not run this way. We do feel, however, what a very slight zoological move on the part of nature could have obliterated this external antithesis of the sexes in our case and could have made a normal man possessing no visible testicles, and a normal woman bearing an external sexual member resembling a male organ throughout.

For that matter, even with the difference between the external organs continuing to exist, a mere heavier growth of hair on the private parts of both sexes could have led to a natural covering which would simply have covered up this contrast completely, at least as the usual condition. We continue to see in our adjuncts of civilization to what a great extent little things can still retouch these matters. How much of the superficial contrast between the two sexes would cease to exist if our civilization had quite generally insisted that all men must shave, that all women must have their hair bobbed short from infancy and both male and female must wear the identically same clothes in Eskimo fashion. In this sense, something more than a mere joke lies in the good story about the little boy who returned from bathing, and when asked whether any girls were in swimming too, naïvely answered, he had not been able to see whether there were or not because all who were in bathing had no clothes on. An increased similarity between the sexes during the years of childhood appears in infancy. At this time, for ex-

ample, the difference of the arched female breast is done away with. This similarity in early youth is a trait that runs through all races of animals, even in the case of such excessive extremes as the root-crabs, where a common initial form exists in infancy for both sexes.

Nevertheless, nature did not go to extremes in the direction of the greatest possible identity when it really came to making man. Nature plainly did not want to wipe out the old traditions in this respect in man, just as little as in regard to the foot. One is constantly astounded only by the extreme subtlety in the differentiation between the two sexes. Endless attempts have been made to hatch out as great and fundamental a difference as possible between the human male and the human female by exact scientific figures. The problem was tackled again and again from the side of the "mind." The old dogma sounded, that woman was mentally the inferior of man. Therefore it must absolutely be possible to prove the same thing in the case of the body as well. What a vast amount of energy was spent on that attempted proof! But the only thing that remained inferior about the whole matter was merely the brilliancy of the results.

The average type of the female is somewhat smaller and somewhat lighter than the male. The difference in size and weight can be readily followed through all non-European races as well. A more delicate bony structure corresponds to this lighter weight of the female, and somewhat lighter muscles throughout correspond to the somewhat less sharp edges of the bones where the muscles are attached. All systems of muscles are lighter in weight, with the single alleged exception of the tongue being more powerful in woman. The number of red corpuscles in the blood is somewhat smaller; but in return for this, the normal pulse is appreciably faster. Opposed to the slighter muscles is the appreciably greater tissue of fat in the female, constituting a greater amount of reserve material, as it were.

When it exists in the normal degree, this fatty tissue conditions an essential part of the naked female's beauty. The skin stretches very smoothly and tightly over it, and a beautiful, warmer, more reddish tint, the oft celebrated rosy light of our feminine nudity, breaks through the white of our European girls and women, while in the case of races that are already coloured by nature, the crude layer of colour stored up in the fatty tissue seems weaker and the general

colouring somewhat paler throughout. This adipose tissue is responsible for the æsthetic lines of the female breast and the female buttocks, which have ever been the admiration of all artists. There is a stronger growth of hair on the head, and the individual hairs grow more luxuriantly, too, but in return, the hair of the beard recedes and the rest of the body is far poorer in coarse, visible hairs; while on the other hand woman surpasses the man (particularly in the case of blondes) in the soft down formed by the remnants of the actual woolly hair.

Noticeably shorter arms correspond to the somewhat shorter legs of the female. The pelvis is the only bony region of the body which is absolutely bigger and stronger in the female than in the male, and it is also constructed essentially differently; nature's purpose imposed on woman as carrier and bearer decisively comes into its own here. The fact that the upper thigh bones fasten to the rump somewhat differently in turn depends on the pelvis, causing that universally known and specifically feminine shape to the whole lower part of the naked body. The sturdy columns of the two thighs slightly spread apart from one another as they extend upward from below, normally making the breadth of the hips somewhat greater than the breadth of the shoulders, which is the diametrical opposite of the proportions in the case of a normal man, thereby giving the female legs as a whole a very subtle knock-kneed touch. This most feminine piquancy about the whole naked body in this particular region is not stressed enough, if the whole formation is a good one (even after childbirth) seriously to endanger the harmonious picture of the ideal human type in the glory of its lines, particularly when the smoothing and mediating tissue of fat does its work properly under a beautiful skin. Of course, habitual artificial squeezings, stoppages and changes brought about by civilization's fashionable clothing must be entirely eliminated in this connection.

According to an anthropological view which is more and more gaining ground, the difference in the breast region, which was formerly considered to be originally given by nature, is entirely or almost entirely a result of the compulsion of clothes. Our girls and women of the European race customarily breathe somewhat differently from the male. They do not breathe comfortably with the diaphragm from the abdomen up like a man, but they throw out the chest by raising the ribs. One view sought a connection with preg-

nancy in this: it was supposed that woman had to breathe from youth on in this way, because later, when in a pregnant condition, she would only be able to breathe regularly with the chest and could not indulge in abdominal breathing at all. The other view sees nothing but a very immaterial compulsion imposed by wearing corsets, drummed in very early and which keeps on becoming a habit.

The real purpose of maternity does dominate the breasts that give milk. The contrast to the male would strike us as particularly great were not this selfsame sucking apparatus (we spoke about it at length before) still so conspicuously indicated by the existence of the male nipples. At this part of the body, the male does not appear as a non-female, but just as a young flapper that came to a permanent standstill before reaching maturity. There is yet another genuine antithesis in the larynx, where the location of the thyroid cartilage in the female creates that condition which we all know from the contrast between the male and female singing voice as expressed in base and alto, tenor and soprano.

And finally there is the sexual organ.

We shall still have something to say about a certain concealed parallellism between the male and the female sexual organ. Up to a certain embryonic stage in the womb, it has a common starting point, and is uniformly laid down by nature for both sexual possibilities. For the rest, the womb remains. There remains too that process of the embryo taking root in the mother, in the female only. And there remains the definite one-sided part played beforehand for the act of procreation, in which the female furnishes merely the ovum and must wait for its marriage with a sperm-cell, which can only be introduced from the outside by the male and which naturally entails the most complex antitheses between the male and female apparatus.

If you stop at this point, there really is not very much in the way of "inferiority" to observe in all these traits. On the one hand, the dependence of the most important physical differences on the natural occupation of motherhood is evident beyond any doubt. The somewhat lighter weight of the body has its sense for the period when the woman must bodily drag an entire second, miniature human being around with her. The fact that the machinery of the female body is specifically set up with somewhat more reserve material for special occasions, that it carries its material to an insignificantly slighter degree in the form of finished

machine parts (muscles) but rather more as raw material (fat) over which it can dispose at any time, just as clearly calculates with the possibility of occasionally having to feed an infant organism in addition to itself and first having to construct the latter's machinery parts.

On the other hand, it positively cannot be seen why a human form that is somewhat smaller and somewhat lighter in this sense could not bear all the tasks of our civilization just exactly as well. There is not the slightest basis of fact for believing that slight variations in bodily size were a decisive factor historically in the evolution of mankind's civilization. Genuine human dwarf races appear to have gone down from ancient times on, to be sure, although there is still a certain mystery that has not yet been cleared up about this. But there can be no talk of woman being a "dwarf form" compared to the male; it is just a matter of a slight average difference. And the progress of civilization from time immemorial functioned easily and smoothly with human types that were insignificantly smaller and larger alternating.

This talk about woman's inferiority is less concerned with the historical element than with her present and future as a co-worker. But in that case the proposition is particularly untenable. The average woman's insignificantly slighter muscular development in connection with her greater reserve of energy is truly no longer a hindrance in our civilization to-day if it ever was. One does not even need to embark on the debate to what extent better gymnastic training for our girls and women would still soften that antithesis, and bring the feminine body wholly back to its natural harmonious proportions by at least eliminating certain checking influences of an earlier civilization. After all, it remains a simple truth that to relieve the muscular effort of the individual is a fundamental tendency in our entire civilization.

This tendency clearly was inherent in principle in the nature of man from the beginning; it was the thing which decisively raised man above the animal. You will recall our earlier discussion as to how the intelligent portion of the brain in the human skull could originally only be gained by leaving off the crude parts of the monkey's skull where the powerful muscles were attached. Further, you can follow physically, far back into mankind itself, how this brute anchoring of the muscles in connection with the greater size and weight of the bones has quite generally diminished appreciably

among all living human races; you only have to compare the old diluvial Neanderthal form of man, which has latterly become so well known, with later skeletons. The invention and development of the technology of implements (achieved through the development of the brain) was doubtlessly decisive for this further development of mankind as a whole from a certain point on (a development which in a certain sense is "feminine"). The implement gradually outbid, relieved and supplanted the direct employment of the individual muscular system everywhere. If you were to recall the battles of Homeric heroes it might seem as if muscular strength had done nothing but grow for a long while with the implement, with the weapon; and that muscular strength had kept right on being the decisive factor. But you also know how the simple invention of fire-arms has irresistibly crowded back individual bravery in the form of muscular activity in battle, quite apart from the fact that not war, but the work of peace and its perfected technology constitutes the actual decisive content of civilization. The ideal of this technology, as it is everywhere unfolding for us to-day in unheard of splendour, is contained in the simple picture of the button on an electric wire, on which the pressure of the little finger of a child's hand can release an amount of energy, which in the form of a dynamite explosion will blow a rock that's as big as a house to pieces. Think of our wonderful means of transportation and the progressive relief of the individual's locomotive muscular energy. The wildest flight of the imagination cannot see how woman's usefulness as a worker in modern and future civilization, particularly as adjusted to that condition, can be impaired by a minimal diminution of individual muscular strength, which incidentally does not represent the symptom of a disease in woman, but merely corresponds to a small, different deposit in the bank, in the completely normal, thoroughly healthy, harmonious organism for certain definite reserve purposes.

If, conversely, you wanted to take a chance with some rather paradoxical proposition, you could far sooner say that woman with her physical principle of economizing with muscle and providing for a reserve actually corresponds much more distinctly to this very type of the human being which the technical progress of our civilization is favouring the most; that she already forms the model, to a certain degree, of a generally economic future form of human being. Just as the man of to-day is undoubtedly more

"feminine" than the old Neanderthal fellow as regards the weight of the bones and the coarse bony parts where the muscles are attached, just so it would be thinkable that the ideal of the future man would be a form of the body which would likewise have a lighter bony and muscular system and be more beautiful because of a certain reserve supply of fatty tissues; naturally not in the sense of becoming effeminate, precluding a certain development of the muscular system by means of sports (which can only profit the normal woman as well!), but in the sense of æsthetic sports making the limbs beautiful instead of brutal. There can be no question about the fact that the antithesis between the male and the female body would be toned down quite a bit further in a human race like that, and specifically with a shade in the direction of woman. Greek art visioned something like that; despite the fact that technology in our sense had not developed at all as yet, it already had before its eyes this truly paradisian human being with its burden as an individual lightened by the most modern technology.

But one does not need to go so far afield at all in order to see at least no danger inherent in some muscular variation for woman's equal participation in the work of civilization. And just as little can it occur to you to derive a cultural inferiority of the female human form from the existence of a somewhat heavier and differently shaped pelvis, a greater width across the hips, and a permanently different range of the voice. Would the ascent of human civilization have been really retarded or would it have taken place in inferior forms if all human beings had had somewhat broader hips from the very beginning or a somewhat different range of voice in the direction of soprano?

A comparison which temporarily gained great influence and undoubtedly contains an important basis of fact at heart can be employed just the other way around as far as its deductions and consequences go. That is the idea that woman is on the whole closer to the child than the man is. Certain individual characteristics (I shall just call to mind the more strongly developed and longer abdomen in contrast to the chest, for example) really make that superficial impression. In the matter of other characteristics, however (the gland of the breast that was already mentioned, for example) the greater similarity to the child conversely holds good in the case of the man. Whoever wants to exaggerate in a polite way, will say on this point: woman blooms in eternal youth. It

has been said very differently, however, that woman remains an undeveloped child her life long; that she comes to a standstill much sooner than does the man; then, what is seemingly still more fatal, that the child was even closer to the animal and that therefore woman remained stuck still deeper in specifically animal nature during her entire life. "In the beast" is the phrase that is occasionally used with particular fondness. Perhaps this latter thought does actually touch upon a more serious matter; only, as recompense for its hatefulness, the logical conclusion from it is just the other way around.

In several individual traits, the female organism preserves a greater primitiveness than does the male. This applies in first line to the internal structure of woman's sexual organ; I shall come back to that in detail. It appears to be a law that holds gentle sway in the animate world from the bottom up, that the female sexual half preserves a slightly more conservative character. From the sexual organ, this more or less extends over and over again to the rest of the body. Within the several higher animal groups, the female frequently continues to be closer to the initial form of the animal, closer to the place in the big family tree from which it began to specialize on its own. Since young animals frequently still copy this racial form, a greater resemblance of mother and child is bound to happen every now and again. There is absolutely no hard and fast compulsion about all that, and one can invariably cite all manner of exceptions as well, where females too have continued to specialize one-sidedly along new ways. But a certain conservative tendency is unmistakable, nevertheless. And a little of this applies to the human female as well, it seems. Beyond her sexual organ, she keeps a few slight traits in the structure of her entire body that makes her appear more conservative, as if she had remained closer to the original point from which man began to evolve.

But this must not be understood to mean that woman is still half monkey, for instance. Rather would she still mirror more clearly the original place from which the purely human being first energetically detached itself from the animal, while the human male would have gone on specializing to a certain fine degree. You will recall what we said, for example, about the part the teeth played in the origin of man. The extreme of a weak set of teeth was decisive for man. Woman still has weaker teeth to-day than

the male has. . . . Conversely, the fate of the anthropoid apes that led them into a narrowly specialized side line undoubtedly once hung on the extreme of a powerful set of teeth. In characteristic fashion, the females of the anthropoid apes have kept something of this trait from their starting-point to this day. They have the relatively weaker monkey teeth. In this respect and in the case of a few other characteristics, the human being too subsequently turned aside just the least little bit, but on the whole very immaterially, hardly noticeably. But in any case, it appears more one-sidedly in the man, while the woman salvaged the unadulterated starting-point more visibly to this day. You can connect this with the sanctuary theory which we discussed before. You can say that woman still brings before our eyes the human being of that sanctuary period, which was more delicate, softer, more spoiled, less hounded and had greater emotional depths in every respect, while the male in his existing form more strongly represents that later, one-sided offensive and defensive form, the human form of the struggle for existence which started up again with greater violence, a form which by no means took on gorilla-like characteristics again, but which nonetheless had to make its little concessions to a harder, more violent course of Nature. That would then lead to trains of thought about the past similar to those which we had dedicated to the future of mankind.

In any event, according to the analogy furnished by the evolution of animals, it is certain that the less specialized form which continues more strongly to mark the earlier, initial stage of evolution ever has the greater chance for real continued development toward something higher, something that out-trumps it. As far as we have been able to follow the matter, new progress did not set in at the specialized peaks of the genealogical tree's branches, but kept on starting at the larger forks throughout. The seemingly more conservative form became the new knot for progress to put forth its new shoot from. The word "conservative" here gets a totally different and deeper meaning from "a reserved attitude toward the possibility of further progress," as a bud with its full vital force maintained for coming out in higher bloom in a new spring of evolution. By every analogy, that must hold good for man as well. If humanity at some new turning-point of the ages should ever put forth yet another fundamental new development out of itself and beyond itself, the female organism because of this

"more conservative" character, meaning its less one-sidedly specialized characteristics, would in all probability represent the more suitable line for this new evolution to start from. The proposition about "backward" woman would receive a diametrically opposite interpretation in this case.

In this connection, certain further facts provide clues that are remarkable to a very high degree. According to Darwin, as you know, all new evolution in the animate world is dependent on the existence of new variations, from which nature gradually selects the progressive ones, preserves them and breeds them further. The more variations are thrown, the greater is the chance of progress. Where the production of variations lets up, a bad conservatism develops; the species is reduced to a state of rigidity and sooner or later, when progressive times make changed demands upon it, it faces the danger of becoming exterminated. Now it appears throughout that these highly specialized twigs of the genealogical tree are the really bad conservative elements, while the mystery of the original forms as conserved in the sense of a reserve seems to consist in their not being reduced to decidedly conservative rigidity in that bad sense, but in their continuing to produce individual variations. At this point the fact must be fraught with meaning that the feminine human form perpetually varies more markedly than the masculine form to this day. On the whole, all systems in the body of the human being still vary appreciably, a proof that we have not yet seen the end of our natural evolution. But woman leads the procession.

The fact is likewise interesting that, in general, woman individually has somewhat greater powers of resistance to external dangers to life than the man. According to statistics (undoubtedly so in the Caucasian race) there is a small surplus of male births: about one hundred and five boys to each one hundred girls. Nevertheless, the sum total of women and of men in our population remains not only the same, but in many cases there is even a slight surplus of women. The greater menace from the struggle for existence in masculine occupations does not appear to be able to explain that alone. And after all, woman is exposed to the chronic peril of childbirth. Woman seems to attain a relatively higher age by virtue of a more firmly founded constitution. In this, too, one would like to see something of the stubbornness of all conservative reserve forms of evolution, in the good sense of the word

"conservative," which very often finds extremely distinct expression historically in animal species. Woman is the tougher human sort as it were.

Meanwhile this opposition between man and woman is such a trifling one, that, strictly considered, one is merely lured to such remote and vague conclusions by the boundless exaggerations of the opponents' side, which absolutely wants to crucify woman here. In the end the really decisive place could only be the brain. Is woman's brain fundamentally inferior to the male's brain?

The literature on this question billows like an ocean. The true scientific results as far as the purely physical side is concerned can easily be jotted down on a small octavo sheet of paper, in which connection a large question mark belongs after every sentence as a warning signal.

There is no absolute characteristic about the skull of the man and of the woman which differentiates them, which would separate the sexes with certainty in every individual case. On the average, calculated on the basis of her average bodily size, woman has a bigger skull than man. In this connection, the decisive factor is the larger cranium, while the facial part, including jaws and teeth, are more weakly developed in woman than in the man. The male has coarser places for the attachment of muscles, and the bones of the forehead over the eyes are more powerful. These traits strikingly point to the female stubbornly staying on the straight line of the earliest tendency in man's origin. They yield nothing new therefore. The controversial questions then begin with the mass of the brain.

The crudest, although most popular, method of investigation concerns the weight of the brain. Since the male, as was said, is somewhat larger and heavier on the average than woman, you cannot just simply take and weigh the brains of both and compare them that way and say that the male has more brain matter. One must try to determine the figures of the relative ratios of both. Relative to the weight of the entire female, woman's brain then turns out to be heavier than the brain of a man relative to his total weight. But on the other hand, measured by the size of the female and of the male, the male has the relatively heavier brain. So you cannot do anything with that either. People had talked themselves into believing that the greater weight indicated the degree of efficiency, and that the lighter brain would necessarily be the

mentally inferior. Which of these two results of measurement is now to be valid for measuring this degree of brain efficiency? This conclusion is in itself so false, however, that one does not need to bother making this quite impossible decision at all. For it can be proved by the most brilliant individual cases, that highly gifted men, far above the average in intellectual performance, actually possessed a brain whose weight was below the average. Conversely, uncommonly heavy brains occur in the case of mediocre or poorly gifted individuals. There must be something wrong with the whole business as far as these men are concerned. That leads to the conclusion that the mass of the brain and intelligence are not in this simple dependent relation to one another at all. You cannot figure about brain matter just as you do about any muscle you please: if it is heavier, it will work better, and conversely. The brain with its complicated structure obviously enjoys a special position, which is natural enough. It has its own special laws, which we must first come to know.

The attempt has also been made to tackle the problem from the side of the brain structure. Despite all the finesse of our anatomy of the brain, it has so far been impossible to demonstrate the existence of any generally repeated, definite difference in form, say in the course of its furrows and convolutions. It is asserted that there are differences in the course of the embryonic development of the brain, but this has not been shown beyond the possibility of being misled by the large amount of individual variations.

In view of this open situation on all sides, the study of the brain's intellectual performance can alone serve as actual proof. We have spoken about that repeatedly. Without a shadow of a doubt, the female mind varies individually all along the line to and including genius in the highest fields and functions of human progress, such as poetry or mathematics. Woman is just as capable of showing the noblest variations of human character. Since these thresholds which are the highest that are accessible to a man are reached by women, it is in no way probable that woman's average level lies noticeably lower than man's. If the human male has historically taken on a slight tendency toward one-sided specialization, it would at most make it explicable that we should note variations of genius of a more specialized character in the male, while the female would in general represent variations of the pure fundamental type, a slower process and one proceeding more by

degrees, but in return for this, a more substantial one and pushing through on a bigger scale. The numerous splendid variations of character in woman, the ethical variations, as one would like to call them, appear to me to play a very special part here. These plus variations of character are far more valuable in a certain sense for humanity than all specialized inventive talent. But for the time being these are utterly problematical points, beside which the main thing remains that in individual cases the highest intellectual development in both man and woman rises in such a parallel fashion that there can be no question of any inferiority of woman.

In this connection, let me remind you once more that the apportionment of the chromosomes on a basis of equality for both individuals, one-half being contributed by the female and one-half by the male, has held good in nature from the very beginning of sex, and that there is not the slightest change in this significant original relation in the case of the human being.

And so the yield of material showing an actual extreme opposition between both sexual individuals in the case of the human being is strikingly scanty as far as this brain question too is concerned. On the whole, there can be no surer confirmation of the relative triviality of the sexual contrast in the human being than these very feeble results which you encounter everywhere in a field which has been the object of such incessant and highly heated attack as a result of the practical question of woman's inferiority.

Lastly, the fact must be added that numerous individual transitions between the two sexes become strikingly noticeable. Formerly this was mostly followed up just intellectually, and one sought to interpret it as an occasional mental monstrosity. But to-day (particularly as a result of the meritorious collection of material by Hirschfeld), we are very well informed about the physical existence of such intermediate sexual stages as well. Female and male characteristics occasionally appear in the strangest mixture as an individual variation in one and the same person. The chain of possibilities for such combinations and gradations appears to be literally unlimited. In the lower regions of the evolution of life, as you know, the hermaphroditic condition in which each individual unites both sexes in itself still exists as the normal state. Recall the love story of the snails. If in the stages where Nature has permanently abandoned this in favour of normal dual sexuality

you still find some individual variations continuing abnormally to play back and forth, one would like to bring that under the law that natural evolution does not so easily give up a thing entirely. It keeps trailing along the old order like a shadow, as it were. In the fundamental biogenetic law it indistinctly rings the changes of the entire series of ancestors once more. It strikingly shows its bulldog tenacity in rudimentary organs for a long while. Among its countless regular reserve supply of variations it keeps right on injecting a certain percentage of throwbacks, of atavisms, of antiquated models, as it were. One can well understand that this old material, which at any time is still available as a reserve, can occasionally furnish valuable material for natural selection in the face of new demands of evolution, particularly when an older adaptation is to be restored again, such, for instance, as adapting a land animal to water again. The ghost of hermaphroditism still walks, as a reserve potentiality of that sort, combined who knows with what possibilities on the side, and torn into who knows what fragments. And so it still comes on up to us, as a play of variations. The idea may strike us as monstrous, just what nature can intend with us in still dragging along this particular material in our case. In any event, however, the phenomenon of hermaphroditism is not an imp of the devil, but in our case as well it takes its logical place as a rudiment of our animality. The matter merely forces itself upon us the more harshly because it appears combined with all, and often very high, phenomena of the human spirit.

On the other hand, the existence of these intermediate stages renders the exactness of our study of genuine male and genuine female performances more difficult. We may think we are studying a woman whereas actually we have before us an individuality which is more or less strongly developed along male lines. A fool could easily exaggerate that and say that all female geniuses and all great women were nothing but disguised sexual transition stages. On the other hand, the possibility of such combinations and cases of mistaken identity really bring home to us how slight the opposition between the sexes really is in our case, and with what delicate finer shadings, often running into one another, nature has drawn the real man and the real woman side by side.

The contrast is made just as slight for us as could possibly be imagined.

If nevertheless it strikes us as being so enormous as often to have appeared to be the greatest problem of all human existence, that lies in the nature of the duality of sex generally. It is due to the idea of the erotically halved human being. If women lived among us just in a matter-of-course way only as a human race that was formed somewhat differently from men but close friends with them, without erotic necessity, in a simple relation of symbiosis, just as different varieties of animals occasionally keep together and make common offensive and defensive cause, no man would make any mental bones about women.

But in your own individual case, this condition of being an incomplete erotic half and this erotic doubling sweeps you with its full force into something which over and over again had caused surging waves, from the bottom up, throughout our entire discussion: that is the problem, the mystery of individuality.

You must tell yourself that your individuality can tear open in an upward direction; that it can be gripped together with a second individuality by a higher force in nature, which in turn creates a new individuality out of the union of those two, of the male individual and the female individual. And this has to happen to you of all beings, you, a human being rejoicing in the sovereign glory of being a single individual person. You will recall the starfish about which we spoke; how it and all of its organs suddenly burst and split up, and how it crawled off in the form of two independent halves. Your own body expects something of the same sort of you mentally, now that it is to become your instructor as a sexual body, as a love-body. . . .

§ 2

Credo quia absurdum.

"I believe it, because it is senseless." . . .

A human individuality, which is supposed to be open toward a higher individuality!

As you lie there in the grass and let me tell you about the earliest dawn of love's history, what are you? A human being. True enough; but there happen to be approximately fifteen hundred million human beings on earth. What are you among these millions? You are a single human being, a single human individual. The idea of man, or to put it in a more general way, of mankind is split up into approximately fifteen hundred million individuals on earth such as you are. The nature of this separation is based on the fact that you feel yourself to be something absolutely particular among them, despite the fact that you are "man," like all those other human beings. You feel yourself to be an ego, a central point in this colossal number, a central point of perception. I am seeking no subtle philosophical definition here. I take it naïvely, just as it is familiar to every one. All the others, even though they are admittedly human beings, too, are in the relation of "you" to you. You are the eternal Luther in yourself, saying: "Here I stand, I cannot do otherwise." This feeling of being one's self, of forming a focal point of one's own, of the inwardly unshakeable Alpha and Omega, of the profession of faith pressed out of the depths of our being, "here I stand," this it is, that we call the "individual" in our case.

This concept was really created spiritually, or, to put it better, it was evolved from that pure fundamental state in us, which as yet has absolutely nothing to do with the idea of the separation of body and soul. If you subsequently let yourself in for this world of differentiation, it is to be noted that the concept of the individual can be grasped physically as well, to a certain degree, in your own case. You see this not only for yourself, but by a certain roundabout way it becomes tangible to me as well, ob-

jectively considered, as something that is a united whole, so to speak, something before me that is individualized in the universal human type, and this despite the fact that I cannot look into your soul, but must keep to your so-called body. And when you look at yourself mirrored in the water here, when you make yourself objective to yourself, you too see in yourself a human body, which as such has its own peculiarities as compared with all others on earth.

At bottom, this separation into individuals is wonderful enough. But to a certain extent it becomes practically revoked again by the fact that every individual human being feels itself as the whole, as man.

But now your sexual body demands that you should burst this oneness, this wholeness of soul as well as body at one point after all—where love in you reaches out beyond you toward a second human being.

In order to master this thought, which is really so hopelessly naked, you must in first line make something vividly clear to yourself which we have already touched on often enough in the realm of higher forms of life, but which at this particular point is now tightening the noose about your own neck with all its elemental force, about you as man and individual.

Rounded off, fixed and determined, self-inclusive as your simple individuality of body and soul may appear to you, it can be resolved in a downward direction into a highly complex multiplicity, in you as a single individual being; a multiplicity of differentiated lower individualities, each one separated from the other, which you manifestly grasp together physically and spiritually in a highly special way to form one higher individuality.

Your seemingly so entirely united personality is made up, both bodily and spiritually, of other individuals that exist, both spiritually and bodily.

Think out the facts of the matter with purely physical pictures.

Here you have a big bag, and in this bag there is sand. The whole sand-bag weighs so and so much. It presses down on the scale with a certain weight, representing its total performance. Let us say that this figure is the expression of functioning physical personality, of the bodily individuality called "bag." In this case, an individual external form corresponds to this mass, which exerts

this particular effect: we see the bag stand up as such, we see the united, self-contained thing, which exactly exerts this definite figure of pressure on the scale. Despite all this, you know perfectly well that the contents of the bag consist of a certain number of single grains of sand. Each little grain of sand, considered entirely by itself, would only have a weight of a certain percentage of the total weight. Placed on the scale all alone, the single grain of sand would actually weigh that, however. Placed there alone, it would constitute a unit, a united whole, a sort of physical individuality, like the whole bag, merely a unit that was weaker, almost to the vanishing point, in the effect of its force of pressure.

Now look at your body, likewise purely physically for the present. It executes certain performances, exactly as that bag exerts its pressure on the scale. And you can very well recognize an inner physical multiplicity in your body, exactly as you can the grains of sand in the bag. I shall leave aside the fact that your body is composed of very small parts of its material elements and their chemical combinations, so-called atoms and molecules, or however you may choose to call them in the most modern fashion. All that would still come under our grains of sand. As the bag is made up of these, just so, as you know, is your body composed of its cells. These cells are small particles of organic substance, that piece your body together in such a way that each one, at least originally, preserves its individual physical form but yet that a new body originates, which is a united whole. This takes place in a manner that is infinitely more complicated than simply piling together grains of sand in the bag. For the cell grains first arranged themselves to form little subsidiary bags within their big bag of the body; they form organs in you, and these organs, as smaller associations of cells, constitute a number of smaller separate bodies in you. Your stomach, your lungs, your heart, your sexual parts are all separate little bodies like that, interposed in you between the billions of those tiniest little cell bodies and your big, whole body, which your "ego" sees mirrored when it looks into the blue water here. But that is only something incidental.

However, your body actually does not exist physically alone for you as a reflection in the water, or as a tangible, audible, visible thing to me; inwardly and spiritually, it is at the same time your "ego" itself for you, it is your individuality of soul. One of the subordinate rubrics within you, the brain, participates more strongly

in this, but in its way it embraces the entire body, so that we can quietly generalize.

On the basis of your personal philosophy you can think the connection any way you please; I purposely keep on leaving that an open matter in our discussion. Whether you choose to think that the physical body "produces" the soul element as an action, quite similar to the way the bag of sand as a whole produced its definite pressure on the scale and so produced its "weight"; or whether you choose you think that there is only one thing in your case which you conceive of as body or soul according to circumstances; or whether you think that you really are only soul, and that your body first originates in you by a sort of process of subtraction, but invariably as a process of thought; the essential fact remains that during your lifetime you have a spiritual individuality which clearly corresponds to your physical individuality.

Now if this bodily individuality is composed in a downward direction of smaller individualities embraced within it (the cells and so on), there is at least a probability that the same thing holds good for your individuality of soul. The matter extends beyond mere probability, however, when you recall what we already frequently mentioned before, namely, that every cell is really a spiritual individuality, too.

Let us once more summarize the reasons in favour of this proposition.

In bacilli, amœbæ, radiolarians and so on, you have beings living everywhere on earth with all the indications of leading an independent existence, and which never represent anything else but just one single cell. They are each one a complete individual in body and soul, even as you; and yet they constitute only one cell, one of those little bodies, billions of which make up your body. Historically, the wonderful cell state of your body first developed out of such one-celled beings, gradually, first as a crude lump of cells, then by the cells in this lump forming a finer co-operative association with division of labour, separating into organs as a raw social mass divides into trades. If the individual cells of this ingenious state, which you have for your "body," are not supposed to possess any cell souls any more inside of you, then they must subsequently have lost their souls!

We have definite reasons of fact, however, for believing that this cannot be generally the case. Just imagine that a microscope stood

here, and that you were once more looking through this microscope at the profoundest miracle which your own body can offer you. A tiny drop of your own semen is supposed to be lying in the microscope's field of vision, fresh, warm and still in its living state.

That is a small part, just a little drop, of your very own body, strewn out into the "objective," as it were, while your bodily and spiritual individuality continues definitely and firmly to exist as a whole. It steps forward to meet you, as in a mysteriously magnified mirrored image. But what do you see? A dull shiver runs through you. You are looking into one of life's very great, very consecrated moments. You are not looking into distant universes, double suns and Milky Ways. This thing is a little drop of yourself. A little piece of your "ego." Look quickly. It will vanish, dry up right before your eyes, and die, rudely detached from you as it is. But it still lives—a white spot, a miniature ocean, and a mass of microscopic bodies active in it. They twitch and move; they swarm with sudden thrusting motions in the crowd. Each little body is a single individual spermatozoon, a single, detached, liberated cell of your body. At one place, your association of cells loosened and discharged a certain number of little individual cells. That was the semen which appeared. And here you see these cells themselves as a whole. They move, they live, each one for itself. Each one corresponds perfectly in its activities of life and in its external movements to one of those protozoans that never were anything else but a single cell. Why should not each one of the little sperm-cells be a genuine spiritual individual like those? This time you can actually prove it.

You remove your eye from the microscope. The magnified little white drop that came from your body is lost to view. And in place of it, the big world rises up for you; stars in infinite distances of space, and an infinite sequence of things, one after the other, in time. They are dying now under your microscope, your sperm-cells of this experiment. Their course that is recognizable by us is run now, completed with this last deed, by which you were brought face to face with one of the greatest revelations about yourself, by which they showed you to yourself in your individualized parts. But just let one of those spermatozoa find the right spot for which nature intended it. Let it get to a similarly individualized ovum cell, deep in the womb of a loving woman. A child originates from

the fusion of both. It laughs at you out of its bright new eyes and grabs for you with its rosy little hands. Surely you will not deny a soul to this child? But where does its soul come from? From those two united cells, the sperm-cell and the ovum-cell. You discover traits of your own self in the character, in the soul of the child. Not only a physical cell, but "soul" as well must have streamed from you into this child in the act of procreation; "soul," with that single sperm-cell separated from your body. A "soul" had to live in this little cell; a "cell soul," which, though it was but an infinitesimal fraction of your big masculine "ego," carried a note of yours, in a soul sense as well, a most mysterious sign of recognition, which gave a trait of "you" to the new child's soul.

But why should not every cell in your body possess what the sperm-cell in you possesses, when you are a male, and what the ovum-cell possesses when you happen to be a female? Why should not each and every one have a cell soul, too, a spiritual point of orientation, an "ego," a genuine spiritual individuality? Your whole soul, your spiritual individuality as an entity then is composed of such cell souls, such spiritual individualities, in the same way that your body, your physical individuality as an entity, is composed of little cell bodies. Your "ego," which subjectively for you is an absolute unit is from the standpoint of the little cell "ego" just a bracket, a union of many. The cell souls, perhaps further united to form souls of organs, lie in this bracket as millions of subjective "egos." The bracket in turn is a new, higher "ego," not divisible as an "ego," just as little as the bracket is divisible as such, but objectively it is divisible as far as what lies within the bracket is concerned.

I emphasized on a former occasion what tremendous, far-reaching consequences for the whole philosophical problem of consciousness this deduction must necessarily have, and against which I cannot cite any valid argument whatsoever derived from all our physiology of to-day. But at this second point of contact, too, let us resolutely resist the temptation to pursue the deepest mysteries too far, in favour of a more limited utilization of the simple facts of the matter merely for our love problem.

If this is really so, if our individuality in a downward direction comes about only by small auxiliary individualities getting together and forming a united connection, does it not seem like a simple consequence and probability based on analogy that occasionally this

our whole individuality might in turn in an upward direction have to be a part, a half, an auxiliary piece of a still more inclusive, higher individuality?

That man and woman, in soul and body, might in turn be two cells, designed for and functioning according to division of labour in higher love-life, which includes them both, and only then as the real, complete human individual. . . ?

It is highly significant that you actually do have very many cases in the animal and vegetable world below man, of many-celled higher individuals uniting to form still higher associations, in which entire individuals in turn play a second degree rôle, comparable to that of cells. Recall the most important points about this. We already spoke about such "super-animals"; but the matter seems only to gain its real significance at this place.

Something over forty years ago Haeckel for the first time coined terms that hit the mark for these facts in the vegetable and animal kingdom.

The individual that originates by many single cells uniting to form a self-contained higher unit, he calls a "person." You therefore are a person; your darling is a person, every human being is one. Every single one of the toads in the puddle here, and every one of the hooded grebes out there on the lake is a person.

But when such persons among animals and plants again get together and unite to form a higher association, a higher unit, he calls it forming a "stock."

Naturally he uses the work "stock" not in the sense of the "stock" of a rifle, but as it is meant, say in a "stock" of bees.

The bee-stock furnishes you an example. Every single bee is an individual like you; a person therefore. A certain number of bees form a new organism, which is to a certain extent self-contained; that is a bee-stock or bee state; and this not just philosophically, ideally, platonically, but in a perfectly real sense. The co-operative association of bees, the "stock," has in many respects gotten together to form a higher individual the way your cells in your body have united to form your valued person and as the cells in question likewise do in every single bee person. Just as the cells of the body let division of labour be brought about among them, and formed organs, so did the bees in the stock engage in a certain division of labour, in the manner that I told you about in detail

before, and which has even become fixed in an external, physical separation of the tribe into three somewhat different kinds of bee persons: egg-laying queen, fertilizing drone and sexually stunted but child-tending working bee.

The bee is an example of a relatively loose formation of a stock. Among a vast number of lower living beings this method is found in a far more radical form, which faithfully repeats in every trait on a large scale what the little cells take care of on a small scale in forming the "person."

Look up from your comfortable grass couch to the woods shimmering in the sun, the towering red pine trunks topped by their smoky grey, woolly pine needle covering. Just what is one of those pines in these terms; is it a person or a stock? Look at that curious one out in front where the rigid uniformity of one trunk next to another, which prevails in the woods, ends. Here a few splendid pine individuals stretch up in the open toward the sea-air and the light, old veteran fighters, each one still struggling with the world in open battle-line, instead of being merely cannon-fodder, straight as a ram-rod, for the woodman's axe. This particular one stands on stilts like a monster, then the trunk continues crooked like a boa constrictor and finally the canopy of needles hangs in broad terraces over the lake like a black cedar of Lebanon.

I called it a pine individual. But we just heard that there is a whole series of individual possibilities. The cell is an individual, the bee is one, the bee-stock is one. What kind of a one is this gnarled pine? Quite evidently it is a "stock." Countless millions of cells compose it. But these cells first unite into plant associations, that correspond to the single bee and to you as a single human being: they form the several shoots. The shoot is the "person" in the pine-stock. A new, higher association of such shoots or persons then gives us the pine-tree, the pine-stock.

In this particular case it is an established fact even for the layman who has never heard a word about these complicated matters before, in fact, it requires no further discussion, that the whole stock is nonetheless a sharply defined "individual." The pine-tree is a united whole, a unit, just as well as the individual bee or you are! There never existed the slightest doubt in the theory of the soul held by popular belief either, that the individual tree was so perfect a unit that one uniform soul had to be conceded to it—the dryad or tree fairy. This is the best proof of how the individual was

accorded recognition, although for the scientist it was as a matter of fact a "stock," an association of the second degree. The soul question in the case of a plant-stock, a tree like that, has hitherto been very little dealt with scientifically, because scientists have long failed to agree about the assumption of a spiritual unit for even a simple many-celled plant (in other words, one that would correspond to your person; say, a single hyacinth or a tulip). Even if something in the way of soul element were conceded to every cell in a plant, the simple many-celled person of a plant constituted such a loose cell association as to make any common personal soul impossible, according to the favourite view. Many years ago Fechner combated this view with the heavy artillery of logic. To-day, even strict plant physiology inclines much more strongly toward the opposite view, and the still more inclusive soul idea is growing to be a problem that can be discussed.

Numerous related cases occur in the lower animal kingdom. You use the skeleton of such a case daily, very peaceably, at your morning ablutions. What you employ as a sponge is the skeleton of an animal-stock, formed of horny fibres; and the persons of this stock keep together much more intimately than the bees do, since they remain physically grown fast together for their entire lifetime, and as one united whole form a sort of animal tree, which is now called a "sponge." This case is so complicated that naturalists have long been at odds as to just where, physically, the individual "person" ends and the bodily "stock" begins, seeing that the stock looks identically like a person and could easily be mistaken for one, and likewise acts like one. The fact that scientists are at loggerheads over this is just grist to the mill of our way of considering it.

Your darling wears another example in her ear. The rose-red ball of her coral ear-ring is cut out of a chalky substance which originally formed the skeleton of a genuine animal-stock, just like your bath sponge: that is the coral-stock. The delicate little coral twig that supplied the material, in its living state in the blue Mediterranean, represented a colony of coral animals (a kind of polyp) socially dwelling together. These corals, too, are each of them a genuine person, as you are, even though they have grown together. The calcareous skeleton which they form hangs together as a self-contained mass, and the nutritive juice for all flows in canals through this common bony mass throughout the entire colony, like community soup. The crowds of these little coral persons in the individual

big stocks are colossal. Millions of individual little persons are occasionally crowded into a few cubic feet of room. Naturally, the individual size frequently dwindles to the point of invisibility, to microscopic proportions. All the more gigantically does the entire mass of the stocks stretch out. As new colonies continually set up shop on the chalk skeletons of older colonies that die off, those colossal coral-reefs arise in warm oceans, the biggest of them on the north coast of Australia being nearly a thousand miles long. There is precious little of that pretty principle of division of labour developed in these coral-stocks. At the most, certain special "drinking persons" appear, particular little individual corals on the stock, which no longer catch any food and which are sexless, but which habitually pump in water for the entire colony instead. The colony is still below the alcohol stage of evolution: therefore these are only professional water drinkers holding down these state jobs.

Lastly, the maddest example, which at the same time carries division of labour to the limit, is offered by those siphonophorian jelly-fish, about which we already spoke at length; those swimming jelly-fish stocks, in which hundreds of single jelly-fish have grown fast together. Exactly like the cells in your person, the jelly-fish persons have in turn organized themselves into regular organs in the common stock: some do nothing more but eat, others row, still others reproduce; but whatever they do, they all do it for all the rest in the co-operative association. Whoever in this case is inclined to attribute any sort of a soul unit whatever to the single individual jelly-fish must necessarily assume something of the kind for the superjelly-fish, judged by all its manifestations of life.

The most monumental achievements of organic life below man on our planet are attached to such formations of plant as well as animal stocks. The ineffably luxuriant jungles of the carboniferous period, that produced our strata of anthracite coal, and those of the Tertiary that produced our strata of bituminous coal consisted of plant-stocks of this sort. What islands and mountains were made by coral-stocks in geological ages. If man to-day is powerful enough to split open isthmuses like those of Suez and Panama, bidding defiance to all geology, those animal-stocks had the power gradually to wall up ocean straits, like the Torres Strait between New Guinea and the Australian mainland which is almost completely barricaded with coral reefs.

In making this comparison you involuntarily ask yourself why a

possibility like this, which made weak plants and diminutive, low animals titanic master builders and revolutionizers of the earth, should not also have been put at the disposal of the highest being of all, the human being. And in one direction there really is something so striking in this thought, that it seems almost platitudinous to call special attention to it.

All one has to do is to say "civilization," and you know instantly how we human beings, too, in a very definite sense as individuals to-day, live and move and have our being in higher human organizations every second of the time. Like a tremendous tree, whose branches overshadow the globe, civilization carries and encompasses every one of us in a very definite sense. Innumerable are the smaller branches and twigs of this tree, where finally our small persons are inserted; shoots that come and go like the green leaves of spring and the vanishing red autumn foliage, while the gigantic tree towers on and on through the millenniums.

It is not exactly customary to speak of a "human stock" in this connection. But it is significant that every word which we employ in connection with simple cell associations, in order to make things clear, is taken from man's civilization-stock. Social association, colony, race, state, division of labour; everything from the volvox globes up to our own individual human cell bodies and again to the pine-trees and coral animals and siphonophorians subsists on expressions and ideas which we first came to know and first formed in connection with the "stock" aggregation of our civilization.

The very word "mankind" has a ring of this. In the work of our civilization it is not merely the zoological name of a species, like "wolf" or "fox." It reminds one of the great nascent ethical union of all human beings, which is already our very strongest stock of all, in that it seeks, at least ideally and in its tendency, to include all mankind to the last person, and at the same time shows that it has the strength to attain its objective and turn this tendency into reality in time.

Here you have an attempt of surpassing grandeur to weld all of fifteen hundred million human beings together in an ethical stock, an ethical tree, an immeasurable, globe-girdling ethical reef, the true ethical super-individual, the ethical superman "mankind." Christ is the great milestone, as it were, on which the formation of this ethical stock for the first time stood consciously inscribed as a

direction for the road to take. The commandment "love thy neighbour as thyself" was the mighty slogan of this ethical stock against the old personal wisdom.

And in addition, you have the colossal connections of our technology, science and art, our common means of transportation, our division of labour. All this is still in a state of fermentation, but nothing can stop the process.

However, the whole greatness and glory of the formation of this stock in our human civilization runs only in one very definite direction and runs only on one single condition, as it were, which may not be transgressed.

It takes into its calculations the strength, importance and self-contained character of the person, of the personal individual, which exists in the case of man and which undoubtedly essentially existed when civilization of any kind first began.

Of all the forms of individualities on our planet that we know, the individuality of the human person, the single human being such as you and I are, is the most splendid and judged by its performance the highest form. You will recall how life first started with the very simplest individuals (single cells), and how the differences in the characters of these individuals already dominated that business with the chromosomes. Then, in the case of the volvoxes, the first many-celled individuals, the first "persons" originated from such one-celled beings as a result of a social union on their part. Thereby that factor was fundamentally given, which became continuously heightened and deepened along the line leading to man. It is just as if nature from then on increasingly concentrated all its care and attention, all its force of efficiency here. To what extent the single personalities still affected the chromosomes through their personal experience remains a controversial question, as you know, although in the end it seemed probable to us that the chromosomes were affected to a certain degree. But in any event the personality already experienced things that were of the very greatest importance for its own constantly increasing consolidation and clarification within the earliest history of man in the genealogical tree.

By virtue of the human genealogical tree decisively turning away from the plant and to the animal, this personality escaped the primeval danger of taking fixed root like a plant. It became freely locomotive; and within the animal kingdom it suffered no permanent relapses into the state of being permanently fixed to one spot. It

developed excellent organs of the senses, which enabled it to perceive the world round about and gradually brought before it objectively the picture of others and its own picture. The eye in particular is a milestone on the road of the consolidation of personality. The large brain, and with it the intellect that came more and more to liberate itself, developed behind the organs of sense. We see the intellect develop in the sense of human critical self-consciousness and purposefulness arise only in connection with personality.

The further development goes, and goes along human lines, the more energetically you find the inherited animal instincts, that keep on preserving a trait of a more impersonal natural selection of a low grade extending over generations, being relieved and replaced by this intellect which itself chooses and gathers experiences, but which as such is exclusively the possession of a single person. It amounts to a quiet declaration of the intellect having come of age; but with which nature at the same time recognizes personality as the decisive factor in evolution from now on. Genius, the furthering plus variation, already becomes effective in all its greatness, in the single person during its lifetime. Intellectual tradition, which creates a "history" that keeps procreating itself, an historical connection in civilization, places the individual in possession of the entire body of mankind's previous achievements, and does so in a much more mobile, much freer fashion than all direct, inherited, fixed instincts could possibly have done. The implement on the one hand eases the load on the bodily organs, and on the other hand it extends their scope over such a vast realm of mankind's universal possessions; that with it the single individual has at all times almost the whole of mankind's energy that exists at any one time at his free disposal. This is the great secret of the implement, that a great part of the energy of mankind's labour is projected externally in it and is available for employment at every one's pleasure. This impersonal quality about the implement in the very highest degree increases the possessions of all personalities. The intellect leads to the utmost inward consolidation and self-evaluation of the person, by leading the individual human being to reflect about himself, consciously increasing his character's self-reliance, transfiguring the dark instincts of individual egotism to the highest Promethean feeling of one's own personality, which feels the stars of its destiny in its own breast and presumes to experience the whole universe in

itself and, Faustlike, to encompass all the misery of mankind as well as all the happiness of mankind in the little chamber of its own person.

Here, by its connection with history, by its share in technology and by the supreme deed of thinking for itself, the individual really reaches that point we spoke about, where despite the fact of being just one single individual, it as a matter of fact represents all mankind at all times. One might well believe that this individual, at the highest ideal stage, would as a single human being be capable of producing the whole of civilization out of itself again, if it should happen to have become lost, and that its innermost genius alone would suffice to give this whole civilization a push forward for the benefit of all. The greater a man appears to us in history, the closer we divine him to be to this ideal. We feel about the very great geniuses that mark the turning-points of the millenniums, that they could not have given their new thing if they had not completely possessed the old, at least in its vital content. That good old story about Robinson Crusoe, who, isolated on a desert land, reproduced the whole main line of technical civilization, improvised out of himself, gives you a case of the individual triumphing as a replacing power on a small scale. We would credit a Helmholtz, in possession of our entire scientific equipment, with being able really to reproduce all the most ingenious technical wonders in a desert island. But as testimony of personality increased to the uttermost in the human being, how much mightier must that still little island in the midst of the ocean of life appear to us, which is shown us at Weimar in great Goethe's work-room where he paced back and forth, hour after hour for many years, his hands behind his back, his eyes fixed on the backs of a few books and two windows, in front of which green branches swayed, and did not just reproduce values of mankind but produced new ones from out of the natural depth of his own ego. For us, such a "Goethe person" is the peak of Nature's performance in fashioning human individuality at the personality stage.

And this evolution of personality in the case of man we now see absolutely respected by the evolution of the human stock as civilization.

Such Goethe persons cannot simply be strung in a row like little coral persons or pine shoots in an attempt to make still higher

as long as he is doing so. This agreement is reached by the one generating certain air-waves that reach the ear of the other, and vice versa. Or else it is reached by the one drawing certain definite shapes with his hand on a piece of paper, which produce certain definite contrasts in the reflection of light, and these differences in the reflected light-waves then strike the eye of the second one; and vice versa. This necessitates a system of signs for the sound-waves as well as the light-waves that has been agreed upon long before. This system is provided by language, which is already an established co-operative practice of mankind which has been handed down from olden times, and which was already transmitted to both of these persons in their childhood by tradition. As occasion requires, this language is expressed either in spoken words (sound-waves) or in written words (light-waves). The written word to-day possesses the good property in the fullest measure, that the distance between the two persons no longer makes any difference at all. The one human being may be in Chicago and the other one in Berlin while the agreement is being reached; letters readily cross back and forth, even though a certain amount of time is consumed. Even this time can be reduced to a minimum by switching in electrical waves: the contract to form the co-operative association can be telegraphed. For this purpose, there lies between America and Europe a thing which has a certain resemblance to a huge siphonophorian stem: that is the transatlantic cable. But our two human persons by no means need to grow fast to this cable with their cell bodies for the duration of their lives, in order to be able to make use of it. A real siphonophorian stem, grown fast and connecting the publisher and the reporter, of the length of the transatlantic cable would be a somewhat uncomfortable addition to life, not exactly calculated to make life any easier. Each of the interested parties uses said cable, which does not consist of cell substance at all, but of a much more substantial mineral substance, and uses it only as an ideal end of his body and only just so long as he has anything to say to the other, exactly as he uses pen and paper. Other human persons may utilize this long stem for their particular stock purposes after him, or it may temporarily lie quite dead again, without being humanized by means of cabled signs of language, in the abysmal black of the ocean, where luminous deep-sea fish flit over it and the lilies of the sea wave around it.

But whatever means of communication be chosen, the contract is

closed, and the actual complementary work of both in the stock begins. But now they are farther than ever from growing together in jelly-fish fashion. The publisher quietly stays in America. His reporter, as his eyes and ears, hurries to the spot in Europe agreed upon. After he has seen and heard enough with the sense of his personal cell body, and without having his freedom of movement hampered by being attached to any stem thousands of miles long, and of awful metallic weight, he again goes to the telegraph office. He translates what he has seen and heard into those generally agreed upon human signs, letters, and has this "cabled" word for word in the form of electrical waves to America through the enormous cable stem. At the other end, the other person receives them approximately as well as if the cable had been a genuine nerve in one united individual, running from the eyes and ears of the one directly to the brain of the other. For the reader at this other end a certain further act of the imagination is necessary, but the human brain is already trained for that and, moreover, the methods are being improved every day. In any case, the hearing and seeing person in Europe has done his duty. Now it is the turn of the stomach person in America.

The cable, which just now was a nerve, must now become an alimentary canal. Naturally not in the unappetizing way of stretching like a sort of transatlantic navel-string thousands of miles in length from the publisher's intestines to the hungry writer's intestines, and through which already digested nutritive juices of an oyster feast, for instance, would flow from the one to the other who was sucking like a tapeworm at the cable stem. The American publisher simply calculates the civilized money value which the cable reporting things seen and heard has for him. And he simply sends back the corresponding sum, likewise in words, employing civilization's existing credit facilities. He cables a bank in Berlin and instructs it to pay the reporter a certain sum of money. This money again is a new sort of a stock facility of civilized mankind, handed down from olden times; it again is a certain agreement on signs, like language. In drawing out his money in bills at the bank, the reporter gets a very definite mark into his hands, and one which every restaurant proprietor in Europe will change into a good dinner for him a certain number of times: he is "fed."

Both participating personalities emerge from these whole proceedings in full possession of their entire person with all bodily

organs intact. Each one wholly keeps his eyes and ears, his own stomach, etc., for himself. With these he went into the matter and emerges with them. All connection between them consisted of implements.

Only you must stretch the concept "implement" as far as possible. We two, as we talk together, are likewise using the implement of artificially grouped air-waves, or of light-waves, when we read something.

On the other hand, you naturally must not assume that our civilized, human formation of stocks bring about no stunting or violation of the individual human personalities whatsoever. You know full well where the hitch still is in that respect throughout our social life in our civilization. You know that countless individuals cannot live their lives to the full for reasons of economic complications; you know how need and misery slink along like grey ghosts in all the bright light of our civilization. You know, too, how genius must fight its way, mostly along a long, hard road of suffering, and not infrequently has to bleed on the cross. You know that even stock formations that are invented sublime and pure carry within them the danger of becoming rigid, so that they lie like a frightful burden on the individual, who rightly rebels. You know that there is not a single one which under some circumstances could not become a chain. You know that there is many a blot on our civilization, which might well make one ask whether the shoots of a tree or the jelly-fish on a siphonophorian stem or even the individual cells in our body are not individually better off than many "free" individuals in our civilization-stock.

All this, however, is immaterial for the thread of our discussion. On the one hand, it merely points to an evolutionary incompleteness that still exists. Just as our civilization to-day does not yet extend to all human beings, so it is not even finished in its fundamental characteristics yet. Compared to the pine or the coral-stock or the cell state it is only a very young attempt. There can be no question, however, that its tendency is continuously in the direction of working always and more and more generally with the personal individual developed to be as free as possible. All progressive rules and regulations aim and work in this direction.

On the other hand, all those acts of violence come under the concept of occasional harm to the individual person, and not under the basic methodical antithesis in the structure of the stock existing

between the siphonophorian and man's civilization, as expressed in two jelly-fish permanently grown together bodily by means of a stem and two civilized human beings connected merely by the implement when occasion arises.

If you will only keep this opposition clearly enough before your eyes, you are perfectly free in all that follows to indulge in the most daring thoughts about the present and future course of the formation of the civilized human stock. Many different problems rise like distant islands of vapour out of the blue—islands or mirages. Everything animate invariably has its spiritual side. Mankind's civilized formations of stocks go hand and hand with spiritual occurrences. Why should they not do so, particularly in the case of human beings? We see those lower unions of individuals, at least the union of our cells that first led to the existence of our human person, lead to extremely singular formations of higher, inclusive spiritual individualities that in the end are absolutely unified. This is the wonderful way by which our own human consciousness comes about in each and every one of us as a collective phenomenon. Just how that really does happen is, as we have frequently mentioned, still a very deep and dark problem, the only fact about which we have for the present is that it is manifestly so. In this case, however, we simultaneously have the physical picture of the co-operating cells sticking very closely together for life, and above all, in our case, the brain-cells. The most obvious thing would be to deduce from this that nothing of the sort could ever be possible in connection with the formations of our human civilized stocks, because this bodily growing together is lacking. But on the other hand it is a striking fact that we talk a great deal about just such seeming spiritual encompassments in connection with our civilized unions. We talk about the spirit of humanity, the soul of the people, about all manner of things of this sort; we even live and move and have our being in these concepts as if they were the most matter of course things in the world. A cautious person will no doubt say, all this is only meant "symbolically." But in certain moments, especially very great, very deep ones, that shake us through and through, we think differently and take these matters as a very real experience. You might ask, whether something is not starting here. A common something that goes through all human brains despite physical separation. The ways of evolution are strange. It does not have to do the same thing always. Who knows

but what something totally new might be taking place with us; how unity might come about this time by a way that would be worthy of individual persons standing as high spiritually as we? . . .

You can quietly bring such questions up for discussion at this point, may they be never so daring; even if out of our knowledge we cannot answer them. Bring up these questions when philosophers talk about consciousness; when the discussion turns to developments of the future; when the opinion is expressed that there is no longer any mystery left to be thought out about remoter possibilities in the evolution of Nature, and in general whenever people think they are all through with everything anyway; likewise when the little word "symbolical" is too light-headedly applied to everything possible, as if we possessed actual genuine comparisons for these profoundest things and as if in the end the original mystery, the first phenomenon, the great sphinx, did not keep on flashing the same shining eyes on us out of the world's thousands of disguises. . . .

But at this particular point these matters would lure us much too far from our actual path.

The real significance of our foregoing discussion is that this entire formation of stocks in civilization by man, everything that leads from here to civilized unions and aggregations of mankind and so on, does not yet square with the one wonderful occurrence from which we started out; namely, with the necessity for complementary parts in love and for acts of love in the life of the human individual person, and with the fact of duality of sex among us.

One thing must be clear to us now. Love involves a fact of stock formation. The two sexes go beyond the individual person and form a sort of higher individual, a love-individual which regularly comprehends two persons, a love-stock. And then temporarily there further exists a special stock-like relation between mother and child.

These love and procreative stocks, however, lack the very characteristic that marked the human stocks which we so far described. All these formations of stocks made a halt before the "taboo" of the individual bodies. They demanded no new joint formations of bodies by a genuine, physical, naked connection, but they built up the new intermediate body of their stock person out of implements; and therefore they were utterly devoid of any and every shock, all fright suffered by an individual actually undergoing disso-

lution and breaking to pieces. This shock in love-life, as was said, is the characteristic first impression made on the individual, and must be the first overpowering one. For here most decidedly that calm certainty does not hold good, that you as a single individual are yet actually all mankind, and that the more you as an individual deepen yourself and strengthen yourself, the more you will grow toward this encompassing oneness, toward this becoming one. In the love-stock, you never become a whole as a single individual person. Only twoness, only bodily duality can redeem you, otherwise you will eternally remain a sterile fragment. But to come to this redemption necessitates the most monstrous way this time. And all this despite your so highly developed individuality as a whole. What has Nature gone and done to you in this respect? What has happened to its respect for its own magnificent creation, human personality. . . ?

There can be no doubt about it, uncanny as it sounds; that with the formation of the genuine love-individual, of the love-stock, we once more face unmistakable siphonophorian characteristics in our own case.

We brought out the absolute difference between siphonophorian nature and human civilized connections by a practical example. Let us employ the same comparison once more, substituting the human love-stock. The scale is bound to sink in the opposite direction instantly.

Here siphonophorian, there human stock. But instead of newspaper publisher and reporter, we now have a pair of lovers.

The formation of a genuine human stock by a loving couple, of which the one is in America and the other is in Europe, is only possible up to a certain point: then this example absolutely will not work any more at all. In this case, too, it is perfectly clear that these lovers are civilized human beings, with all the means of civilization at their disposal. Face to face with any formation of a civilized stock, each of them is a personality standing entirely on its own feet. In this case, too, there is no question of any sort of siphonophorian stem fastening them together for the duration of their lives. The one partner can perfectly well have grown up and lived until then in America, and the other one in Europe. In fact, all the postulates of love may take place exactly the same way as the transaction between the publisher and the reporter, by sound-waves, light-waves and electrical waves, by photographs

sent back and forth, by conversations in the form of letters, by final decisions contained in cables. You must not underrate these premises, since human beings that are representatives of the very highest civilization are involved. You must bear in mind to what extent we have it in our power to pour out our inmost soul in written words. Imagine our photographic technology extended a little further, and even our picture can be sent far and wide; it will be telegraphed and even transmitted by radio in a form which will at least compete very seriously with the direct, immediate view, which in the end might be virtually replaced by a series of motion pictures. All this is right in line with our technology.

And yet you realize perfectly well that all of that comes to an end at a very specific moment.

For its complete formation, the genuine stock-like love individuality requires a single moment, at least, which no longer involves a matter of distance in miles, not even a matter of inches. Even in the case of the most highly civilized being, the ultimate act of love suddenly drops out of the entire world of interposed implements, the world of letters, mails, telephone and cable; for a single action in the chain it undeniably turns back to the old siphonophorian principle.

Just for a moment, to be sure.

But in that moment the principle of growing together triumphs once more, like a last, posthumous vision, like a piece of original nature, of primeval world, of childhood coming to life again for a brief period of plunging deeply into the greatest mystery at the dark primordial bottom of nature, that knows no time, no old order and no new, but is eternally resurrected in us in its demon force: the mystery of procreation. In this moment the human individual must go home to the heart of the original mother—there is no use kicking against the pricks. The individual must draw water from the innermost fountain of youth, must descend to the Norns as did Odin, to the Mothers as did Faust; and there all civilization is swallowed up, cell body must come to cell body, in order to reduce the distance between them in a passionate embrace to the very minimum that is possible in the case of such big bodies.

The physical boundaries of these persons, before which all formations of civilized stocks had made a halt, must merge into one another, at least for some distance. At this vanishing border, both personalities must open themselves to one another. Substance of

the one personality must pass over to the other one, into permanent possession there.

All this is only temporary, to be sure. The merging of the physical boundaries into one another does not manifest itself as a permanent fusion of the actual persons. Nevertheless, this process continues inwardly in a very deep sense. That part of the substance of the one person, whose connection with the higher individual was broken off entirely in the supreme moment, subsequently enters into a real, total and permanent mixture with a part of the other personality's substance.

In order to crown and completely close the love-stock, it is necessary for a male sperm-cell contained in this substance to fuse completely in a true mingling of body and soul with an ovum-cell in the lap of the other love-partner that comes wandering to meet it . . . so total a union, that compared to it even the closest conjunction of the two big personal halves of the love-individual remains a mere matter of sliding two pieces of stage scenery into one another. Throughout the entire normal course of the actual closing and consummation of the human love-individual as characterized here, there is actually no place for that typical intermediate member of our civilized stock formations, the implement. You here clearly experience the formation of a stock in the case of mankind which can completely ignore the invention of the implement to this day. The implement can at the most mix into the genuine course till toward the very end in a negative way, as a preventive means, but not in a normal, helpful way. Two healthy, mature individuals who are normal in every respect, such as we have assumed them to be in the case of our civilized example above, do not require the help of implements in any form, shape or manner.

And your most daring flights of the imagination, indulging in the subtlest of reasoning, could not think things out any differently in this phase. As a last resort, you might possibly picture to yourself that a substitute for the implement might be employed in the first principal part of the act; you might think of the procedure which is so successfully employed to-day in the artificial culture of fish. In the case of the fish, when ripe for procreating, man gets possession of the sperm-cells that are discharged (the milt) and of the egg-cells (the roe), pours both products into bottles in which they easily keep for several days, and then himself consum-

mates procreation by pouring the one substance to the other as needed, thus subsequently and artificially closing the ring of the love-individual, as it were. Picture to yourself that something of the kind were possible in the case of man, and that these products, too, could be shipped. In this extreme phantastic possibility the final mixing of the ovum-cell and the sperm-cell would remain the sole necessity, to be sure, but an absolute necessity. The occurrence would be carried to microscopic lengths, so as to say, but here under the microscope the last annihilation of distance would still have to take place with the mixing of cell body in cell body.

You can imagine that a perfected technology might make it possible for you to talk with Mars by means of light signals . . . but you cannot imagine that you could consummate genuine procreation, in the course of which there remained even the tiniest fraction of a millimetre distance between the sperm-cell and the ovum-cell.

This method is entirely out of the question as a normal course in our case, if only for the reason that nature has practised a very special trick in the case of man as well as other animals. It so happens that nature pays a sort of special premium to these partners, in the form of an uncommonly powerful sensuous feeling of pleasure, so-called voluptuousness or sensual pleasure; and pays this bonus for the normal form of procreation, in which both partners by their own temporary, bodily, partial union bring their procreative substances together as closely as possible for final complete mixing. By casting its waves far before it and generating a veritable hunger for fulfilment, this feeling again and again forces the partners together in a real, concrete, normal form of approach. This premium is the counterpoise, as it were, to that shock, that fear which seizes all higher organic personalities when despite the freedom of their person they once more, for a matter of moments at least, have to become connected with a second being in siphonophorian fashion. We shall discuss its own evolutionary history in detail later on.

This time everything is totally different. The individual technician, who can release the energies of the whole civilized stock by pushing an electric button, does not suffice. Helmholtz, as Robinson Crusoe, out of whose single head this whole technology might be born again, does not suffice. Man does not suffice; man who only needs to be connected with all fellow human beings by a

system of signs agreed upon in the form of sound-waves and light-waves, in order normally to experience all blessings, all peace, all feeling of humanity incident to his proper place in the great organization of civilization, with full and complete sufficiency. Nor does man suffice who receives the tradition of history from books and words and himself functions further in the making of such tradition. Great Goethe does not suffice: solitary, only with one amanuensis, to whom he dictates, temporarily very loosely connected with him by that agreed upon sign language of the air-waves elevated to be an implement, walking up and down in his little chamber, weighing and transforming all the highest spiritual values of mankind and generating new values, which are again absorbed by the energies of civilization through the medium of the implemental language of light, through books. All this is absolutely not enough for closing the love-stock of two sexual persons. The genuine siphonophorian characteristic of physical mixing must be injected into it. Both love-persons are constructed as complementary parts expressly for this mixing, even though it actually lasts but a matter of moments. And they go about ideally as such complementary parts during the time when they are not so connected. The sexual organs of both are very exactly adapted and adjusted to this occasional siphonophorian connection. The one organ has the form of a really conducting, external, stem-like piece of pipe, which at the moment reminds you throughout of that common stem between the siphonophorian persons. The other organ has the corresponding form of an inner tube, into which that stem can be exactly inserted. In the case of the human being, this siphonophorian apparatus which corresponds to the structure of mammals, to which man historically belongs, is developed with particular perfection; we shall have a few words to say about its special genesis later on.

To be sure, no nutritive juice, no stomach substance flows through this stem even at the moment when it is really functioning, as it does in the case of coral and siphonophorian-stocks. The substance for mixing flows through it, crowning the act of mixing. For this reason it is impossible to carry out the comparison between the siphonophorian-stock and the human love-stock to the last analysis. The love-stock remains a unique, special phenomenon of stock formation, which, nevertheless, has incomparably more siphonophorian characteristics than it has of the human civilization-stock.

The love-stock further goes its own way by invariably consum-

mating its real connection only for moments at a time with long intermissions of relative separation between. In this respect it has a very faint touch of the manner in which the implement was employed in our comparison involving the publisher and his reporter; that it can be used at pleasure as a connection (say a telephone connection) and then discontinued when no longer needed. However the organs of the love-stock remain permanent bodily organs, which cannot be laid aside in the disconnected state. On the other hand, at such times as they are not in use, these organs can be utilized as a makeshift, so to speak, for entirely different purposes of the person's household; and then the stiff adjustment of their form for their real purpose relaxes, as if to indicate that there is now a pause in their main service. After all, one could imagine something of the sort in the case of corals and siphonophorians; a conduit stem which would close and function as a soup pipe only at certain specified hours for meals, when food was being prepared within the stock, but which would open up everywhere during the periods when the kitchen was not functioning, so that the waste materials of the several individuals that had connections with it could run off during that time. No case of the kind is known to me in nature, but what has not become reality in other cases? There would be no obstacle to it in principle at any rate.

This matter of intermissions between moments of sexual intercourse now constitutes an important characteristic of our human love-life in a different direction.

These same love-halves, that are so expressly made for "growing together" in siphonophorian fashion during the ultimate act, otherwise move about at all times save during this act as regular whole individuals, in the same sense as other free persons in the great human civilization-stock. In all other respects they possess the full freedom of movement and the complete independence of a human being in this stock, and are connected with others only by means of implements. Every form, shape and manner in which their ideal unity, their higher individuality functions, as a love-individual, too, except for this one specific physical act of mixing, exactly corresponds to the customary practice among us in associations of the sort which we illustrated by the case of the publisher and the reporter. In the case of the love-individual, too, sound-waves arranged according to signs previously agreed upon afford

the beautiful means of human speech for transmitting thoughts back and forth from brain to brain as on elfin wings.

It was said that the introduction to this act of mingling by two human beings was still entirely under the spell of distance matters. But life in common within a love-individual is by no means so restricted as to include only more or less crude and clear preparations for the act of intercourse, and nothing more. Our glorious human civilization-stock would not be the tremendous power it is among us, if it did not in every way intervene in the forming of these limited love-stocks with all its means and all its purposes, encompass these formations, as it were, and suck them up into itself, particularly in the free moments, and utilize them for its own purposes.

Think of the vast region of the finer spiritualized feelings of our erotic life, which lead us so very softly, step by step, away from the more specific thoughts of sexual intercourse and feelings of sexual intercourse peculiar to that siphonophorian world, and lead us into really civilized relations and connections, as it were, involving both sexes. Think how these lovers keep on soaring onward and upward again, quite loosely joined, just hand in hand, even more than that, just eye to eye, thought beside thought, over great distances and into a totally different, ethereal blue sphere above those wild red flames, whose heat is to melt their individualities bodily together. Think how ethical values softly weave around the lovers in their community of love; how the siphonophorian love-individual again and again quietly transforms and produces an individual of a purely humanitarian character. The sweetest lyric dawning voice of love, that as yet hardly divines the act of mixing, already draws its strength here. But from assured possession as well, utterly conscious and knowing love as a spiritual value of the very highest kind ever anew strives upward on proud eagle's pinions high into this same blue above the dark chemical mysteries of the sexual act, so high that it loses the latter entirely out of its eagle's perspective, out of its view in the sun.

Within the civilization-stock, these things have a value that cannot be appraised highly enough. Think of the infinite golden wave that floods everything which this spiritualization of love has even touched. Think how art blooms in this sunshine. Think of the rich store of very fine emotional stirrings, which are characterized as chaste in the most genuine sense of the word and therefore

seemingly have nothing more to do with that siphonophorian act, yet which have their garden upon earth, their innocently pure paradise, nowhere else than within the ring of the love-individuality, in so far as this encompasses more than merely the sexual act of mingling. Think of the enormous strengthening and shaking up which the spiritual individual gets from this source for every possible kind of connection and union of an ideal sort. Think of all that is achieved from this source in the way of ideal devotion, self-sacrifice and energetic help. The highest values of civilization rise up, again and again, not only enhanced but positively born anew, in the light of spiritually transfigured love: a marked inner tendency automatically impels this form of love gradually to pass over into universal "love of mankind." And when this tendency is followed out to the very end, the way is paved for love to become completely merged with the highest objectives of the civilization-stock, for a complete coincidence with it. The idea of love here becomes completely detached from the siphonophorian act. With all its force it has become spirit, and seeks as something absolute to enter into the civilization-stock's methods and lines of communication. Like all values of the highest community of spirit, it in the end finds its true units, its true unions, its true mixtures in the extreme anthithesis to all siphonophorian uniting, purely in the great connections of spiritual ideals and harmonies of thought. For these highest unions distance no longer plays any rôle at all. Land and sea cause no real separation. And if in the end even the bridges of civilization's implements, across which the pure characters of thought wander, should fall down, freedom of thought itself remains. In the last analysis, it does not need civilization's cable any longer. It is enough for every loving individual to be inwardly submerged in itself, in order to round out and close the love-individual in that depth, where at the last all the suns and Milky Ways are only waving mist of one's own innermost imagination.

When I look up to the firmament on that side. . . .

The complicated state of affairs in the human love-individual is not yet exhausted with this anthithesis, however.

A new complication in the love-individual grows out of that siphonophorian act of mingling: the child.

The child, as far as its origin is concerned, belongs absolutely and

only to the physical act of mixing, and never could it have come into existence through any of the acts involving distance. It grows directly out of the sperm-cell and ovum-cell that have fused together. Consonant with this strange origin, the child in further league with the love-individual differs essentially from any of the usual products of a human super-individual.

Take our old illustration again—that simple, transient formation of a higher individual between publisher and reporter. Although in this case everything took place at a distance, a tremendously great distance even, still certain third results must have been produced, which can no doubt be compared superficially to the child. Let us say, the newspaper report that now exists in print. The expression "brain child" for such a result is habitually used by us in everyday speech. And for all I care, let us say a sum of money results too; a net profit that is left over for one of the two parties, which is put out at interest and perhaps for all foreseeable time continues to live a definite sort of permanent "life" even beyond the death of its own progenitor. Created as distance values, however, the newspaper as well as this capital in their further existence continue to be unalterably distance values for the higher individual, out of whose community they sprung.

On the other hand, the child of the physically mixed human love-individual begins its existence with that very genuine siphonophorian act. For nine long months it remains in most intimate physical connection (which gradually increases even) with the one partner of the love-individual, the mother. If you are ever present at the birth of a child, and see the powerful, regular stem, one end of which is fastened to the child's navel while the other end was only just now attached to the mother, you will have come upon the identical thing which we threw away as an absurd picture in the case of the transatlantic cable, through which the publisher in America was supposed to "feed" his reporter in Europe; but this time it is not laughable, it is deadly earnest. For months the mother's food substance actually flowed over into her child through this thick cable of a navel-string, and the child sucked on it with its belly, like a tapeworm. And after its birth the child literally drinks its food out of the mother's breasts with its mouth.

This latter action, as can be readily noted, already borders on a distance act. We civilized human beings (not to our advantage, to be sure) have gone over in crowds to the practice of artificially

making a distance act out of this act of mixing. Sometimes we have put a strange mother in place of the real mother; sometimes we have interposed a milk-giving mammal of a totally different species; we have condensed this animal's milk, sterilized it, poured it into bottles and made it possible to send it overland by mail or express. The fact that this is possible we owe to the mere circumstance that with the emergence of the child from the womb, the boundary between mixing act and distance act begins to melt away in this particular case. But a little longer, and mother and child now are only in a distance relation to one another. They see each other by light-waves, by degrees they make themselves better and better understood by sound-waves, in short, despite all the most intensive, unalterable love association in which they continue together, they enter permanently into a co-operative being that has absolutely nothing further to do with any and every further siphonophorian mixing (even in the sense of simple, renewed sexual intercourse), normally even abhorring it to the uttermost.

The further behaviour of the one partner in the love-individual, of the mother, toward the product, the child, from this point on amounts only to the selfsame thing that the other partner, the father, had done from the moment immediately following upon the great act of mixing that "founded" the child. The father does not even wait for the real mingling of the sperm-cell and the ovum-cell to take place. The moment the sperm-cell has left him as a result of what in the end is a purely automatic act of his body's wisdom and he now feels himself to be just an empty piece of stage property, from which the real pith and part for fusion has definitely and finally passed out, in that same moment his genuine mixing rôle toward the child is entirely played out. The entire remainder of all his connections with the child is from now on a distance act. Even if the child grows up as a female and becomes sexually mature, this his own product of mingling never in the normal order of nature comes into consideration for the father as a possible object for a new erotic act of mixing.

For both parents, the children assume a position that is an exception to the rule from certain appointed times on, as far as acts of mixing are concerned; and this exceptional position merely points with utmost energy to that other line for the expression of love which I characterized for you before, that love which, following its best tendency, does more or less lead over into the means

and objectives of the great civilization-stock. Proceeding from an act of mixing, the children nevertheless introduce an element into the love-stocks which remains within the bounds of love, to be sure, but yet expresses a decided tendency toward distance—stocks without any siphonophorian traits. For there can be no doubt about this, that in a certain sense father and child, and above all, mother and child, remain for the duration of their lives in a relation which approximates a love-individual, a love-stock, at least among us. The genuine erotic partition into halves in the sense of husband and wife does not take place in this case, but at the same time it does not just involve any two individuals you please within the general civilization-stock. An original identification tag of the more intimate relation remains. Parent and child to a certain extent continue to complement and supplement one another, temporarily at least, and continue to form a complete being long after the child's birth, by virtue of the fact that for a long while the child is not ready for the whole of life's work, and needs care and protection. Civilization could in part replace this in a different way; we shall discuss that later on. But further, parents and children customarily have particular family characteristics, physical traits, character, talent, closely in common, and this again holds them together in a sort of highly ingenious special stock within the great civilization-stock. In this connection we also know the extraordinarily strong bonds of love which normally exist among us as parental love and filial love, above all, the primevally mighty phenomenon of maternal love. Feelings of love, which on the one hand, from the entire state of the case, must desist and turn aside on principle and unconditionally from every longing for mixing of a siphonophorian character, but which, on the other hand, have a tremendous elemental, instinctive force. A force, which still seems to express the fact that the siphonophorian act of mixing, more specifically in that long drawn out and deepened form, in the case of the mother, has every time and necessarily gone before and been experienced.

The expressions "mixed love," and "distance love" have crept into this discussion as convenient terms for differentiating values; and I should like to keep them in what follows. I believe you yourself have clearly felt by now that two poles, as it were, of our love-life have been grasped, crudely but vividly. Mixed love in-

cludes everything that in the narrowest sense aims toward the goal of closing the love-stock by the physical act of procreation and that comes to a climax in this act. Distance love covers love wherever it strives to close this love-stock in a purely civilized or spiritualized way extending far beyond the physical act, and with the visible tendency for love to become wholly merged in the methods and values of the civilization-stock, needing and tolerating nothing more of a genuinely siphonophorian nature.

We ought to attach the child here by some sort of a caption. Because of the strange circumstance that its existence depends in part on mixed love and in part on distance love, it might be advisable to draw on yet another concept.

Mixing as well as distance signify spacial relations. But for the child, duration, a temporal relation, is particularly strikingly involved. The child is the real enduring performance of the love-stock in our visible human world. May the parental higher love-individual be never so firmly established in soul and body. May physical mixing, which in itself lasts but a moment, be continued in a series of ever new moments for so long as is granted by certain age limits. May distance actions fill the entire rest of the lives of both partners. Some day the little funeral bell will sound for both of them. A few things may live on after them as values of civilization. A bit of humanity the more, which they sowed; a beautiful verse to which their love gave warmth. But the very special and unique thing about the love-stock is that in addition it can give us the child, in fact that normally it always gives us the child. And that it thus secures the duration of humanity and its civilization and likewise confers upon its own alliance an eternal duration, far beyond the perishable sexual halves.

We could therefore characterize the child, and all that is connected with it in the love-stock in the way of values and works, briefly as "duration love."

If you do not particularly want to weigh these three mighty little terms too finely, I really believe that they will help you to sift out something pregnant within human love-life; a trio with whose interplay you continually have to figure. These three terms will fish up for you in three individual nets everything that ordinarily swarms through the shoreless sea of love in an infinite variety of forms; all those current expressions of all times: holy and profane love, sensuous love, carnal love, ideal love, love of mankind,

maternal love and so on; words that in part seem separated from one another by whole worlds.

Naturally, since in the final analysis everything takes place within the unity of human nature, transitions are not lacking, some of which must be carefully considered.

For instance, duration love in its extreme first act, the procreation of the child, is identical with genuine mixed love. All further paternal love within duration love is, as we have seen, in the narrower sense a sort of distance love. Entirely genuine mixed love with its siphonophorian act of bodies growing together in the moment of procreation would in general have been almost an impossibility with freely mobile beings that otherwise are so completely separated physically as we are, if the possibility of erotic excitement at a distance did not exist, by sight (by light-waves), by speech transmitting thoughts (sound-waves) and so on; for human beings, distance love just so happens to be the practically indispensable prerequisite of mixed love. Some direct transitions between mixed love and distance love exist. Their principal playground is found in all those occurrences which do not affect the actual distance senses—the ear, eye and nose, and the brain's distance world of thought—but those that affect the skin's sense of touch. One of the most curious transition forms is the kiss.

In its fundamental nature it clearly belongs close to the threshold of mixed love. In the moment of physical kissing contact the distance between the persons of the love-individual is undoubtedly reduced close to the minimum limit; distance love is on the point of becoming mixed love. How close the kiss is to the closing act is clearly indicated by the circumstance that in its most sensuous form it already rings against and begins to lure the first tones out of nature's great premium placed on the consummated act of mixing—the feeling of voluptuous pleasure. And in this sense the kiss by no means belongs to man alone. Recall our old snail story.

On the other hand, the kiss is not complete mixed love. During a kiss, the organs of mixed love, even though excited, are not yet in action. The contact is still a pure touch contact, more specifically a contact proceeding from the head, which is the region of the entire human being that is most adjusted to distance love. On this knife-edge the two kinds of love can still be sharply separated, even though it is close to closing time. And so a veritable "King of

Rats" of the most diverse valuations and interpretations has become snarled around the act of kissing.

The entire spiritualization process of distance love has concentrated with all its force on this closing value, almost to the point of the old actual rôle of the kiss as a cover for mixed love getting lost and being forgotten.

From being an introduction to mixed love, the kiss first became an inferior substitute for it where the last minimum distance could no longer be eliminated; it became the maximum value of the struggle and the longing for complete mixed love. Then a symbol was made out of the substitute; purely a spiritual matter. Not for nothing was the thinking brain so close at hand. And the most decided form of distance love, that digresses entirely, had to go and get this symbol in its power. In its hands, the kiss became a symbol of that love which is never to become physical mixed love or which never can become such.

Duration love, which abhors every later physical mixing between parents and children as a deadly sin against the Holy Spirit had to seize upon the kiss of all things as the most comprehensive expression of parental and filial love.

The "chastest" love, the most spiritualized "innocent love" which is limited to distance values, which may not even suspect that the sexual act is possible, or at least ignores it as being its own opposite pole, kisses away steadfastly.

And in the sublimest moment of civilization's history, when love of mankind consciously set in as the highest law in the civilized humanity-stock that was coming into being, the kiss was the sign and seal of the contract! The wild old door-keeper of the physical act of mixing appears after infinite purification as the gentle herald of peace where distance love with its last symbols of the world of love in the narrower sense unconditionally surrendered to the universal ideal of civilization.

Wonderful pilgrimage of this old Proteus! Through all heavens and through all hells. Through all loves! The whole history of human love-life could be demonstrated by the kiss alone; it is like a colossal knot therein, and if this knot alone were undone, all the strands in human love would be shown at the same time.

The difficulty of making a sharp distinction in purely matters of touch like the kiss extends at bottom deep into the act of mixing. And this for the simple reason that for the two participating big

human persons as conscious beings this act of mixing is still an act of touch involving distance, in a certain sense, and becomes a genuine act of mixing only beyond all consciousness, even beyond all physical connection of the two big partners.

You must always bear the fact clearly in mind that the sperm-cell and the ovum-cell alone mix in the most actual sense of the word and for ever (meaning that they fuse, life into life, body into body). Where? In or at least more or less near the cavity of the womb. How? The ovum-cell comes rolling through one of the oviducts, and the spermatozoon clambers upward from the direction of the vagina. I showed you graphically before what happened when they met. It represents the copulation, in a narrower sense, of two cell individuals . . . and this most intimate act first leads to the actual, true mixing. Both cells "eat" each other in such a way that each one completely merges alive in the other much like two drops of water that suddenly flow into one another, when a certain degree of approximation has been reached and from then on form one new drop. The most perfect consummation of the act, by the two big love-persons, is not able to overcome the last distance remaining between the sperm-cell and the ovum-cell; it only diminishes the distance to the minimum which it can achieve, and the ovum-cell and sperm-cell have to travel the last bit of distance in the female interior alone.

These facts make it apparent that what we human beings have for thousands of years considered to be absolute sexual mingling, the consummated sexual act between the male body and the female body for our spiritual and physical knowledge, still lies as such within distance love in a certain respect.

And this follows particularly clearly from the countless cases in which the remaining distance between the sperm-cell and the ovum-cell is not covered after all, despite the act being otherwise consummated; and this last little tag-end of distance actually frustrated the entire mixing process. This occurs when the sperm-cells die off before they have reached an ovum-cell, either because they could not find one quickly enough or because it just so happened that no mature ovum-cell was wandering toward them from the ovary. And, as you know, it is also fairly easy to bring about this condition purposely by putting up an artificial barrier in the act itself, which prevents the spermatozoa from going to the ovum-cell; a last, negative interposition of the "implement" even here.

The thin partition of a fish bladder suffices completely, as is well known, for setting up this insuperable barrier. Particularly in this latter case as far as the final and most important result goes, the whole act is and remains distance love just exactly as if the man were in America and the woman in Europe at the time.

We must no doubt take into consideration such transitions and boundary disputes in the great labyrinth of reality, which never fit with absolute accuracy into human terminology. But they do not overturn the value of certain distinctions. Our last example shows that the real and great purpose of Nature is not gripped here, but that it is thrust aside. In the highest and most harmonious sense, the act of sexual intercourse between man and woman, even though it leaves a last, very tiny part of the distance still to be covered, is yet the final step to mixed love; in fact, it is the consummation from the standpoint of these persons. And all those further possibilities, particularly the last mentioned one of an artificial barrier within the act, are only secondary matters that confuse the eye but cannot make the fundamental definition null and void.

§ 3

Oh thou aloft, in grace and vigour vernal,
Tri-named, tri-featured and eternal,
By all my people's woe I cry to thee,
Diana, Luna, Hecaté!
Thou breast-expanding One, thou deeply pondering,
Thou calmly-shining One, majestic wandering,
The fearful craters of thy shade unseal,
And free from spells thine ancient might reveal!
Classical Walpurgis-Night

Diana, Luna, Hecaté! How often has the cry resounded through humanity, seeking to comprehend this three-fold face of love!

The longing that this triple figure might at last become known to us without any magic, that it might become understandable to us naturally.

And yet, over and over again has the profession of faith been forced upon man's lips: *Credo quia absurdum.* It is incomprehensible, this monstrous three-headed being composed of nothing but contradictions, whose haunt is within us; we know not whence, we know not why. . . .

The historical idea, the evolutionary idea steps forth here as liberator in a very real sense. Just as three historical stages are embodied in certain religious conceptions about "trinity" (the mystery of the first beginning of the universe in the Father, the much later event of the proclamation of love of mankind in the Son, the gradual continuation of this deed in the Holy Ghost), so a piece of the prehistory of humanity with stages of its origin looks out at you from this trinity of love. But the problem of its origin no longer mixes in here as a disputatious question. Nor does it come as a disturber of the peace, seeking to menace beliefs that have grown dear to us and on which we would like to rest. It asks the privilege of the floor at this point as a saviour in need, in the thick of the greatest chaos in our thinking.

Not alone with three heads on two bodies does this creature of

love stretch toward us to-day. These heads appear to have been long engaged in a feud with one another. They threaten to swallow up one another. The simple example of the kiss makes this fact obvious enough. In the final analysis, such gulfs appear to yawn between the sensuous kiss, the kiss of brotherly love and the parental kiss that one is compelled to divine utmost conflicts at every subsequent attempt on their part to meet again. As a matter of fact, we live and move and have our being in these conflicts; every most everyday valuation in our love-life is full of such conflicts.

Above all, distance love has over and over again made the attempt to play itself up as the sole, sacred love worthy of mankind, and to proclaim mixed love beside it as a base, ugly, degenerate species, a vicious variety of love, worthy of being concealed—the *enfant terrible* of love, so to speak. All the words which the spirit in civilized man has invented for use against his own body have been employed in connection with sexual love. Animal, carnal, sensual were some of the more harmless ones. Then higher up came such words as immoral, loathsome, unworthy of human beings, Satanic. Although it was conceded that this abominable mixed love could not be done away with entirely for the purpose of continuing the human race, the millenniums of the history of morals have gone to ever greater and greater trouble to try and run down mixed love as much as possible as against distance love, at least in the respect in which it was held.

At certain high spots in this uncommonly curious conflict in the course of civilization's history between the "two souls, alas" within our breast of love, the attempt was even made to strip duration love of and redeem it from every last remnant of sexual character. Just as the saint could no longer be thought of in the arms of a woman, so in the end he was not supposed to originate any more from an act of mixing. You know how Buddha as well as Christ were derived by legend from completely spiritualized, mystical distance acts without any "pollution." In all these things there lurk venerable pilgrimages of the seeking human spirit, of this newborn child of consciousness, which tried out thousands of different roads in its search for onward development by means of higher ideals and which in the end gathered ripeness and experience on all of them, even on the very strangest. In this connection it is very characteristic that such conflicts about the relative rank of the

different kinds of love customarily arise in us where historical strata of different ages within our being are involved; in other words, where the opposition of old and new is concerned. And in this sense it is no mere chance or coincidence, but an inner logic, that in this quarrel between the different kinds of love the selfsame hearty adjectives occur which the "soul" loves to hurl against the "body" in our case.

When distance love, which in its own opinion has become wholly white as a lily, characterizes bad, blood-red mixed love as "animalistic, carnal, sensual," we know what that means: those are the words of the soul which would like to emancipate itself from the body. But we long ago discussed the fact that two purely historical antitheses of old and young are struggling in this opposition between body and soul in us. The part of your individuality which you habitually call "body" (to emphasize it once again as strongly as possible at this important point) is an older wisdom within you; the more restricted spot, where you feel your spirit to be active, is the younger wisdom. Your body possesses the writings of the æons; your surveying intellect with its content of consciousness is a relatively very young creation within this work of the æons. It made its appearance so fresh again in you as a person, it had first so seemingly entirely to make the acquaintance of civilization's traditions (themselves a young evolutionary product) as total novelties beginning at the very bottom, that one feels like saying it actually is only the few years old that you are.

Although both are enclosed in your individuality as in something higher and more universal, both of these parts must for this very reason betray a certain antagonistic character. There is something ponderous, gigantic, groping, smothering about your body as compared to your spirit. At the same time there is something automatic about it, something of a thoroughly drilled giant, who drags along the millions of the years on his back, but whose mobility and freedom of action are somewhat restricted and somewhat dulled by this burden. Beside it, the spirit appears as a restless little dwarf, that incessantly seeks with utmost haste to build up new values, future values, on a little white field which its good giant confederate, the body, furnishes and protects. This little dwarf has no millions of years directly shining ahead of it in its activities. What it learns about the world, even about its own body, it must first hurriedly gather together in its clean blank field in a

few years. But these odds and ends that it snatches up it juggles so freely in thousands of new possibilities, and compels them to indulge in such a new dance beyond all the wisdom of the body, that in the end the entire progress of development on this planet earth at present actually does seem to run via the nervous new work of this little dwarf of the spirit. And since the little dwarf with its Bengal light of the torch of consciousness sees that perfectly well itself, at bottom it really is not too great a wonder that it considers itself to be the really important part and the body to be really a terribly stupid confederate, a sort of necessary evil. And thus a certain conflict arises within the ordinary human individual, the "person" itself; a conflict of parts mutually hurling libels at one another. The spirit makes fun of the stupid body. And to cap the climax, when the giant becomes sluggish, when it gets sick, the spirit rages against it and curses the fate that chained it to such a squeamish fellow.

In reality this is just a temporary stupidity of the mind's eye. The individual needs the body as well as the spirit. Your body is the colossal granite block that represents the succession of the æons of your past. Your conscious intellect, on the other hand, is the place that is temporarily released from all the pressure of this granite block, the actual ideal working surface, where the new is to develop, where the new is to start. Most certainly, your "body" is the animal element, for it still encompasses the entire animal that once was "you." Your "spirit," on the other hand, is the naked youth in the sun, forever on the lookout for future values and in whose field of vision no longer stands the marsupial that has been surmounted and the monkey that has been surmounted but an ideal human being, toward which the individual, you as a whole and as a member of humanity, are striving. You must not forget, however, that this ideal human being would not be standing there at all if your body did not have the monkey and the marsupial in it. And it gradually becomes manifest in the course of generations, how through the spirit the body, too, moves slowly forward. Spiritual achievements very slowly leave their mark on the body, too. The dwarf educates the giant. Just think how the dwarf comes to the giant as a physician to-day. There is no end in sight where this is going to lead to; this conscious conquest and then the development of the body by intelligence in us. The ultimate goal can only be complete reconciliation for common

ascent: the hoary ancient, becoming rejuvenated with the blooming child of the spirit, and the child ripening to manhood in possession of age.

Meanwhile this opposition that still exists actually has its reflected image in that other antithesis between mixed love and distance love. In a certain sense, mixed love is the body of the love-individual. The act of procreation with its genuine ensuing cell mixture is the sole real moment in which the body of the love-individual is absolutely produced. Distance love, on the other hand, can very well be regarded as the spirit in the love-stock. There is no question but what mixed love represents an older writing in you and distance love a younger one; so that here, too, the old and the new are at odds.

In mixed love, the human pair continues to live the old dwarf fairy-tale about the ring fusing, about the mixing of chromosomes in the proportion of half and half. All that is tenacious in life, the conservative element of life, its fundamental unity appears here. No matter how high you have climbed, this first contract you may not break. It is your old bond, your Old Testament, as it were. In no wise has this been shaken on the entire road from original bacterium to highest mammal; these old pillars still tower on and on. I do not need to tell you the old story over again at this point; it is eternally new however. The many-celled character alters nothing therein. This primevally old world system of love revolves ever in the same orbit. It summons you to procreate, it summons you to die. Whether you are protozoan or volvox or tree, worm or jelly-fish or civilized human being.

On the other hand, duration love and distance love, too, have their deepest roots in this primeval fairy-tale. Just as in the final analysis the sublimest spirit goes back to the dull primeval perceptions of the first cell bodies, so somehow or other does the sublimest spirit of love go back to the chapter of the initial fairy-tale about Rumpelstilz. There you had a self-division of the cell into two or more parts as the very first fundamental form of "love." Only at a higher stage did two such fractional pieces from two different individuals that chanced to meet fuse together: but the new being that was formed in that way divided again. Here you have a sort of neutral original ground for all three kinds of love; the real mother-liquor out of which everything could come into existence.

In the separation of these cell parts you have the original beginning of all distance, just as you have the original beginning of all mixing in their fusion. Both spring equally from one original primeval root. Mixing from the very beginning counts on distance, counts on the necessity of the mingling cells first having to meet, first having to find one another, and that they will come from two directions, from two different individuals in different places. In the splitting off process, in the detachment of a fractional part of a cell and above all, in the resumption of this splitting off process after the act of mixing has taken place, you have the fundamental fact of duration love: the translation of the parental unity into a distance relation of separated parts.

Beyond this common, primeval mother-liquor, however, things more and more went differently.

Actual, innermost mixed love remained standing still to a striking degree. Its fundamental principle seemed to be incapable of any further development on a direct road. It was not touched at all by the whole tremendous intellectual evolution in the highest stage of life. There is proof of this in the fact that with this intellect we human beings first had to "discover" our own final act of mixing between our ovum-cell and our sperm-cell, and did so only well along in the nineteenth century. Sperm-cell and egg-cell unalterably kept their diminutive cell form, although by virtue of the force that gradually came to be potential in their hereditary chromosomes they were the possessors and carriers of all evolution up to man. After millions of years, their fusion process took place according to the same old patriarchal method of forming a spindle and so on, just as we spied upon them at their work before. How far this conservatism in the original act has been carried you can study in that last little distance which your human sperm-cell and ovum-cell have to cover between the opening of the oviduct and the gateway of the body, just before their final union. As I narrated to you, they find one another on this last stretch of the road in the purple shaft at most by means of the very dullest of all sensory perceptions, by something in the nature of a chemical sense like smell or taste. There is absolutely no talk of their having genuine eyes, ears or speech after the fashion of the many-celled human being that surrounds them.

This last lure of love deep in the moistness of the female interior

takes place in the same forms as in the oldest primeval sea, that was inhabited by freely mixing one-celled beings.

At the right spot for this eternally same purpose, a remnant of that primeval sea is still produced in the dark grotto of the female interior. But as soon as you look at the entire female, the tremendous, many-celled cathedral in which this grotto arches, and reflect that in order to properly populate this little bit of salvaged primeval sea in the grotto two different kinds of love-cells are necessary there, and that to convey the male variety of love-cell there a second, just as gigantic cell cathedral, an entire male, is necessary, and that there is a distance which has to be bridged between these giants, you immediately enter a totally new world as far as the part love plays in higher organic evolution is concerned. These cell cathedrals are intensive products of evolution. Whatever played into their realm had to participate in their fate, and could not simply remain in that little remnant of primeval sea in the grotto. Their progress was the actual progress of evolution in the whole genealogical tree of life. Acts of love which affected them had to keep pace with their evolution. Ever new tasks were imposed on distance love, which was to bring together entire human persons, and on duration love, which each time was to work out completely such a big, vigorous, self-contained human person; and they could do justice to these new tasks only by continually going along with the new evolutionary procession.

And so you here see the extreme opposite of conservative persistence. As the higher organs of sense develop in the many-celled being, distance love grows right along, too. As the vertebrate organism attains a certain evolutionary height, duration love decisively builds its whole share of mixing—the connection between mother and child—upon it and remodels this into those strange occurrences of the placental connection, about which we have spoken. Above all, we see both kinds of love immediately joining the free intellect as it develops. Distance love (we just discussed this in characterizing it) gradually puts itself in possession of all civilization's means. The distance part of duration love runs to the care of the children, maternal love, union of the parents in marriage as a protective co-operative association for the benefit of the children (all that we shall still discuss), for a long while instinctively at first, then growing in the rays of free intelligence.

The result is that when man finally does awaken with a reflecting

consciousness and begins to philosophize about love and indulges in rational moralizing and speculating on values, man finds these two forms of love already on hand within his spiritual life, finds them ennobled, civilized and humanly spiritualized, as green branches that have grown up with him in the sunlight, while the old original trunk of mixed love continues to stare rigidly at him from out of his own existence, like the mandrake root on which a curse lies. Trimurti, the trinity of love, seems to have an angel's head with its extreme ideal love that already melts away in the blue empyrean, and almost entirely an angel's head with its maternal love, but in between the two there is a face with grotesque elephantine features. Perhaps the picture would be a better likeness if one turned it around this way: in two cases, love has a genuine human face, in the third case, however, an embryonic face, which to this day persists in a dark original stage of nature, and which we can just as little do without as without the tremendous, mysterious, whizzing ball at our feet, the earth itself, but which apparently has not yet been quite fully and properly translated into actual human values; probably, because like this earth itself, it still is something too titanic to be given in full in our sphere but not in the sense of being something inferior.

For the meaning resulting from this last discussion must be that to our calm, considered appraisal all three heads of love must in the final analysis be subject to the identical consecration of historical necessity. Their face as one whole is that which nature has so far been able to achieve on our human star. Until this day it represents the selection of all that is best in a world which was not built up on happiness that was given as a present from heaven above, but was built up on unutterably hard work toward happiness.

Assuredly, it cannot be denied that in the general, increasingly spiritualized picture of our present-day stage of humanity, the spiritual expression of that old foundation stone of the primordial world, which nature now as before sets for us in the shape of mixed love continues to cause us the most trouble.

Everything that is historically younger in our being is far more familiar to us spiritually in the higher sense, in our sense; it just happens to belong more to our intellect, like a friend of our youth who is of our own age and with whom we can talk accordingly: but here we should bow to the absolute authority of age. Wherever

mixed love with its siphonophorian trait makes itself felt in us as a spiritual power, we feel it as something instinctively monstrous, something that the intellect cannot debate with. We harbour the fear of being face to face with a power which, if it wants to attain its ends, has absolutely no respect for anything in the upper story of our ennobled spiritual civilization. Our ordinary individual intelligence is dethroned in a jiffy, almost without any serious resistance. Whole wide regions of our personality, which hitherto we had considered to be the best in us and on which we believed we had built up our life, are suddenly eliminated, almost before we quite grasp it. They suddenly appear to be weak, colourless, wholly within the realm of the isolated individual's diminutiveness and hesitation. In place, there appears on the scene a single energy of ourself, which we had hardly suspected until now; an energy which is entirely one-sided, but in this very one-sidedness has a force that we had hitherto not believed possible in us. What formerly directed in us is now reduced to the rôle of a mere spectator. As a looker-on, we see how love digs a bed through us like a raging torrent. All our highest spiritual values of formerly are suddenly but dams, around which the wild waters rage. The dams may burst . . . and we could only look on with our hands folded. In the case of a similar attack coming from the outside, we would fight against it with death defiance; at the very least, we would complain. In this case we stand there as if petrified, lost in a general admiration of the force that can bury the green crops of a whole life under tons of mud in a few moments.

What we experience happen to be the characteristic traits of the demonic.

In everything genuinely demonic there always lies something destructive, particularly when it has to take its course with unchecked elemental force through a world of fine values that are breakable as glass, as all the higher spiritual attainments of our civilized world still are.

With what a terrible hail-storm can the unchained urge to the siphonophorian element of mixed love come crashing in on the infinite tendernesses of distance love that has gone farthest on the road of spiritualization, crashing in on the fine ethical stock-formation of two noble personalities, on seedlings of the heart and the sweet trusting gardens of pure souls!

How it can ravage as seeming robber and burglar! All attempts

to shackle it, to check it only liberate this ruinous element in the demon the more. Then rape and other crimes accompany its course. Pitilessly it lashes the purest, finest spiritual individuality into surrender to sexual halves basest of soul. In such cases, it violates not alone strangers but our own selves worst of all. And our lot becomes infinitely more tragic than that of the animal. We must plunge into the abyss with seeing eyes. When the magic spell of this demon is taken from us, we are tortured by the inconceivable, how we could ever act that way.

Whoever has frequently experienced the outbreak of this chained force goes through life with a certain constant horror of the possibility that can burst forth any instant from his own innermost self. You wander on so peacefully for a while, you spin a thousand shimmering strands and garlands of flowers about yourself. But that fear does not leave off. When will this whole cobweb tear to pieces again! And then we shall stand there utterly powerless again; we shall even laugh madly as the garlands fall, as the flowers become poor, bleeding hearts; for after all it is our force that rages, it is our volcano that breaks out. . . .

When this demon of sex hunger gets you in its super-power, you are no longer softened nature's spoiled darling who has been declared to have come of age, with his soft hands among all the bright, gay, glittering crystal forms of civilization. You are the savage soldier of primordial nature again, breaking into the astronomical observatory of a scientist in a red night of blood, smashing the instruments off the pedestals to resounding smithereens and laughing insolently while so doing. Love's fundamental force of gravity has caught you in its direct line; the force that works solely toward the original primordial purpose with human persons that overstep a certain margin in its case, and tears them along to that purpose in a straight line, no matter what sort of a person it happens to be. So do we rear the most splendid structures with utmost technical skill and art. . . . But when the gravity of the planet earth grips them they must fall, inexorably; there is no escape. When the force of gravity is bound to have its way, the temple of Olympian Zeus which the earthquake has touched collapses in a tangled mass of ruins. When the noblest, the strongest, the healthiest of us occasionally stands before such a mass of temple debris of his own inner self, to which the demon with one sudden jerk has crashed him down, of all that he had built up stone by stone during years with all his

brain-work, and had transfigured in the light that comes from above . . . who will not at some time have heard the voice of the sceptic about the universe out of the dust of this collapse, heard from out of the depths of his own intellect, that rears again even though it is impotent, the *"Credo quia absurdum,"* that this demon must still ride us human beings. . . .

And yet, in the end that powerful old exorcism, *"Nemo contra deum nisi deus ipse"*—no one is against God save God himself—holds good for this demonic characteristic of mixed love as well.

Rightly understood, it is a good spirit. Only by the act of mixing does humanity continue to exist. There must be a compulsion for humanity, which otherwise has become so sublime and so ethereal, to consummate this siphonophorian act. There simply is more at stake than even the most splendid individual. The continuation of the whole is involved, including the fundament of all civilization. What serves this titan carrying the whole must keep on taking place at certain moments. Although mixed love remains in life, it must yet keep a characteristic of that other elemental force of nature that transcends all individuals: death. Because personality in us is so strong, the titan has to be still stronger. If he seeks air to breathe and roars so that temples instantly cave in, he must also enjoy freedom to give full vent to his passion. After all, it creates you again, you who can build yourselves new and more beautiful temples. . . .

But even that is merely the exterior. Mixed love is not just a savage giant. There lives in it the eternal primordial glow and the primordial force of life, encompassed in the ring of the individual; all that is latent in a person and can be aroused in the way of elemental inner energy. And in it dwells the power of boundless sweetness, of nature's most perfect happiness; once to satisfy its strength at the moment to the point where all wishes completely die, to the point of merging completely in absolute bliss without a further wish. How poor and empty the world would be if one were to take the sexual act of love out of our lives, as the supreme symbol of these two elemental revelations of nature, of power generally and then of the power for happiness. If this force reduces temples to heaps of ruins, it is your force after all. In a certain sense, your personality is never on the shining heights except in the moments when this demon force is revealed. Therefore, no matter how much damage the elemental storm of love may have caused us, we yet see, if we

quite honestly probe memory to the very bottom, the greatest moments of our lives in it, the moments that were worth living, the ones the mind's eye looks back upon with envy in times when things are in quieter, regulated flux; may fear warn you never so much that with this force, the demon of destruction would be unchained again. The vernal storms and lightnings of existence are in these great moments, there is no help for it; and in the end every one knows it. There simply is in them the force which, if it wrecks the temple, yet knows that through it the temple can be built again.

And what a soft sun of happiness shines above two young human beings, full of this force and animated by the same will and the same desire to give themselves up to one another. How much woe of this enigmatical world does that moment pay off. Man with nothing but gloom round about him thinks of this particular moment: you too did possess that once. Even though it may have blown away again. Yet you know now what nature can pay. What it could pay in the lap of coming into being. Nature pays it there where it eternally throws new life into things. Shall we not hope that this eternally onward flowing wave of life will carry up more and more gold to us out of this dark hidden treasure of happiness? And help work toward this end? Who would want to miss this symbol. . . ?

And how necessary appears the blood heat, which pours from here on and on into distance love, and with it on into the farthermost spiritual love. Which after all sends streams of red blood throughout the entire civilization-stock, gives it body, keeps it from becoming too sublime, too evanescent, keeps it warm when the air of pure ethics gets too icy, when reason becomes too much of a cold calculator, when art becomes too abstract. Then you everywhere feel the necessity and the wholesomeness of this incessantly pulsating undercurrent. Here it is not lava which burns up, but merely gentle warmth, proving that not just machines are rattling down there, not just ethical automatons, but that hearts are beating.

It appears as a blessing not to be expressed by words for the civilization-stock, for the spiritual stock as we have it coming into being before us to-day, that its structure is made up of fervent loving individuals that incessantly inject into things the force, the longing, the happiness, the blood-heat of the principle of uniting, of forming common units, which pure intellect alone could not produce, even if it extended itself to the limit to achieve the success of such a prin-

ciple. Here the dread demon becomes a helper, who in the end blazes a trail to the spirit.

Mixed love is also on hand as a fundamental corrective. The intellect is young. It does foolish things. Stupid things that might hinder the great progress of things. And here a power towers before it, which it cannot get at. Perhaps it will be able to do so at some time, after it has become far more clarified than at present. Until then it must bow to the inevitable, and after all for its own highest good. For up to a certain degree, the "Good Fairy Utility" has so clarified, bred pure and selected the method of this oldest power of love, at least crudely, that no matter what crops of the moment it may trample down in individual cases, in any event it still suffices for elementally saving the whole and steering it onward. Better an old, rough helper, as far as method is concerned, with primitive traits which to a certain extent are strange in our enlightened world, than excesses in experimenting on the part of intellectual powers that know how to build observatories, temples and Olympian idols, but not yet how to make human beings.

The rôle of duration love as a soul element in civilization has from the beginning aroused far less scruples.

Maternal love was ever held in esteem as something pure, even where the siphonophorian facts of mixing were abhorred, even to the womb. And in the top story of the human spirit, the love of children for parents received an additional special confirmation as a specifically civilized human precept in the conscious setting up of ethical-social fundamental norms. Marriage (whose connection with duration love we shall discuss in detail later on) has received religious as well as social sanctifications.

There is no doubt that the spiritual, original phenomenon of duration love, of the love between mother and child, has kept a certain elemental, instinctive trait among us, to which one can well attribute a small admixture of the demonic element. At the peak of its power, maternal love breaks loose with the might of a raging torrent that would burst all dams if the hindrances in its way were not as a rule practically entirely reduced as far as individuals and society are concerned. How many temples and images would a real mother smash if her child were at stake! Only that other elemental force of love, mixed love, might at times prove still mightier.

Directed for the most part toward devotion, self-sacrifice, help of another being to the point of the complete abandonment of one's own person, as maternal love is, it was bound to become a particularly high value for civilization. It becomes the supreme source of unselfish sympathy ready to lend a helping hand. Out of this feeling for one's own children grows the highest instinct of helping all that are helpless and weak. Strange children, too. The sick. Even animals. The mother is ever anew our teacher, teaching us helpfulness, care of the sick, protection of animals, in short every form of active compassion. In so doing, she infuses blood-heat, elemental, instinctive force into this sympathy. We can thank our stars for the blessing that our compassion does not rest merely on a few ethical formulas of the intellect, but that it is continually fed by this warm blood!

Here too we feel how the power of the person is increased. We also feel how happiness is increased thereby; only it is a shade finer and therefore closer to civilization's spiritualized values of happiness. Happiness in this case is far less the realization of possession than it is the blissful enjoyment of surrender to another being.

Since every woman has something of the mother in her soul, strong traits of this form of love's happiness are found in the highest expressions of her sexual love. But there is, after all, just a light colour, which grows weaker the stronger personality is developed in woman. In maternal love, however, it forms the fundamental tone, that increases as maternal love grows in strength. Happiness of surrender, without the wild thrills of sensual pleasure but yet felt as warm-blooded gratification, spiritualized and yet not become mere ethics or art or knowledge but having a physical fundamental being: in this form, gratified maternal love can perhaps be declared to be the most clarified and purest form of happiness that we have in our present stage of evolution.

The eternal Madonna idea, as it belongs even to the free-thinker as a symbol, is rooted here. We already went into this once before, and need only touch on it here.

And so on the whole it turns out after all that in the spiritual expression of this trinity of love, as it is given to us historically, whether we like it or not, we have a force with which one can live and let live, and whose seeming contradictions in the end play into

each other's hands and together play into the harmony of our whole civilization. If strata of the historical process of their coming into being still noticeably lie over one another to-day, if they place before our eyes the various stages, as it were, of the "taming" of this wonder being, yet the characteristics of harmony preponderate in the picture as a whole. Not the traits of absolutely clarified perfection. For here as everywhere we are still in the very midst of the process of coming into being. But of the road to clarification, which man, too, so clearly marks on his planet in other ways.

The fact that historical insight into love begins ever more clearly to develop in us is manifestly part of this ascent, an important station on the way: the fact that it takes the place of that paralyzing fright in the face of the erotic spectre, and that it affords the intellect an infinitely better task than the unfruitful work of morally underscoring and hardening the real or alleged contradictions in love's trinity.

For in the matter of love, too, the historically directed intellect which is successful in the historical field can in the end not live out its life to the full in any different way than all historical research everywhere does in the pursuit of its noble purpose: it must descend into the past in order to help clarify the future.

The intellect must grasp how the tangled roots run in order to be able to survey the possibilities of future growth—the same intellect which is everywhere reaching for the reins of nature in the sense of bringing about systematic changes and conscious improvements. The historical intellect in its true earnestness, in its true greatness is ever a prophet. Not a prophet in the old mystical sense who in a sterile and deedless way knows in advance what must come to pass. But one of that band of real working prophets, who themselves shape coming events to conform to the ideal they have, and with their own mighty hands force them into the form of their vision.

You cannot resolutely raise up your eyes in this sense to the great three-fold form of human love without immediately becoming aware of a whole row of smaller sphinx heads, which have to be mastered individually in the same fashion.

In its physical part, the act of mixed love among us possesses a whole series of very special accompanying phenomena which from time immemorial have tormented the intellect to the point of desperation. Their magic spell, too, can only be broken historically.

They go back to old extravagances and old acts of parsimony on nature's part, which still hold your sexual organs under their spell.

Moreover, distance love at a certain height of its development made a wonderful start to intervene in mixed love and duration love, proceeding from its own values. For it elevated the choice of sexual partners in the act of mixing to individual love-selection, with every sexual half not suiting every other opposed sexual half, indiscriminately, but particular personal preferences coming about in future. Since it led to the act of mixing, this individual "sexual selection" was bound to develop on the road of heredity into a definite constant force in duration love. On the other hand, genuine values of distance love gained importance in it. For individual love-selection before the sexual act took place through the higher organs of sense, particularly, through the eye and the ear; and, above all, it also proceeded from higher spiritual valuations of æsthetic, ethical and other sorts. Thereby these values acquired the physical power of love on the road of definitely directed individual breeding; the organs of sense—the eye for example—came to be auxiliary, genuine sexual organs by a roundabout way. We shall have to investigate in detail how far back below man this strange bridge of the three kinds of love might have gained importance. There can be no doubt that this principle must remain one of the most important in our whole love-life in the present and in the future.

Again, independently of this, in the case of human beings we see the tendency to the sexual act generally connected with an extremely strange phenomenon of human nature, namely nakedness. The problem of the origin of nakedness suddenly becomes important at this point as an acute problem of love. And the problem of shame will have to be dealt with at the same time.

Lastly we experience one more tremendous move on the part of duration love. For the benefit of the child (at first purely for its economic benefit, but higher up for its individual benefit as well as a factor in that individual breeding which we just mentioned), the parents are forced beyond the bonds of the sexual act into a new sort of love-stock of more prolonged duration; namely, marriage. The history of marriage, its past and its future chances, will have to be considered.

Every one of these special roads, which we now have to follow, is consecrated by countless individual human struggles, human tears, human hopes, human resignations. Man stood at every turn of these

roads, helpless like a crying child that has lost its way back to its mother. But this child's tears in the end became the man's mature look of courage, dwelling with earnest thought on the confused zigzag course; not merely thinking "how can I find my way home," but "how could I lay out this road better for the future?"

§ 4

Credo quia absurdum. . . .

I believe it, because it is senseless. . . .

You know the old article of faith, in which mankind for such a long time saw the inscription of its primeval cradle: God made man as he is. One fine day man appeared on the green scene naked, with all his good points and his bad points about the naked soul and the naked body. Lovely as this legend sounds because of its very simplicity, to me there was always something about it that dashed one to the ground.

If I still believed in it literally, with the naïve sense of a child, a trait, a voice would now lie in it for me as a mature man close to life's peak in the fifties, which might admonish me to go into the wilderness. Into the desert of sand and the desert of stone, as an anchorite. Where the sun burns and burns, without a shadow, without a spring. And where the hermit puts out all that is behind him like a mad dream. Thousands have done just that, in cases where this and kindred beliefs were still actually alive and quivered through human hearts instead of being merely repeated by parrots of faith. They believed . . . and they resigned themselves. And went into the wilderness. And let the pitiless zenith sun shrivel their brains.

They had the belief that they knew what the world was. But as a symbol they sought the lot of the hermit pining away in the wilderness. As a symbol of the wilderness of thought. And the parched mouth prayed mechanically: *credo, credo . . . credo quia absurdum. . . .*

If I were to say to myself that man was made as he is in the matter of his love as well, as male and female, with all needs as we have them, and that this human being was supposed to be the crown of creation, a dull, paralyzing despair over the utter leaden inconceivability of these things would grip me. A child cannot feel that, and therefore it feels only the lovely element in that belief. But a man of fifty who has sailed this human life, even if he has only skirted the coast of it, must feel that. What tremendous facts in the realm

of sexual love he is expected to accept in silence without any other explanation save that such was the intention of the Original Being of the universe in creating His crown of all cosmic existence. . . .

Let us say that reproduction is something that was appointed from the beginning. According to God's will, mankind can only continue to exist in this way; that while the dead sink down round about, a small male sperm-cell mingles with a female ovum-cell, and that a new human being sprouts out of this mixture. Strictly considered, no theodicy of the millenniums, however ingenious, has ever been able logically to explain even that with the assumption that man was created immediately and directly as the crown of all things, without any and every postulate of possible development. But at least there might be something in the way of comfort in it, that came close to being a dark suspicion of logic. The individual human being, made responsible by God for his deeds on earth, had trouble enough to walk on the sharp edge of the knife between sin and salvation during the years of his life. He was not to be begrudged the fact that his years were narrowly circumscribed, that this pilgrimage of life did not last for ever, but that the curtain very quickly was rung down on it and that a new generation came along for its turn in the experiment. We procreated this generation; but then it suffered for itself and went its way with bare feet over our graves on the knife's edge. One could compose oneself about the whole business.

But you look around and you see that this simple act is again all bound round with a whole web of peremptory absurdities, as it seems.

In first line, there is the tremendous wastefulness that surrounds it. An unequalled squandering of procreative material.

Invariably a new human being is to originate only by the mixing of one ovum-cell with one sperm-cell, and in order that this mixture may come about, a sexual act between man and woman is necessary. Fine. Let that be the basis. Mankind must be preserved. Among the fifteen hundred million human beings on earth every case of death is invariably to be replaced by an act of birth. Very consistently for this purpose, approximately half of these fifteen hundred million human beings are women and the other half men. These males and females unite, and out of this union children grow. Two healthy children which continue to live, and which replace the father

and mother when they die would solve the problem of mankind's maintenance. It is so very simple.

For these two children, exactly two ovum-cells would be necessary in the female and two sperm-cells in the male. Every ovum-cell, as was said, is the size of a little dot that you can just barely make by placing a very hard, pointed lead pencil perpendicularly on a piece of paper. Placed together, the two would make a somewhat thicker point not quite half a millimetre wide. Each male spermatozoon, however, is only one-twentieth of a millimetre long; no longer visible to the naked eye. Two of them make one-tenth of a millimetre; still nothing for the naked eye. The grand total of these four specks of dust would be all the necessary mass of material for maintaining mankind.

To be sure, as things are, not all pairs of human beings find one another. Furthermore, little children die in vast numbers. And so on. It might also be provided that mankind should not merely continue in existence, but that it should gradually increase in numbers. Therefore it is logical and well understandable that the possibility of procreating more than two children were implanted at birth in every woman and man.

But that has its given limits under certain circumstances. Every child develops for nine months in the womb. During this entire time it bars the way to new impregnation. Since the capability of being fertilized mostly makes a further pause for a longer or shorter time after childbirth under normal conditions, you can roughly calculate with an intermission of one year for every child. Now the whole duration of life of even the healthiest woman is limited. In general, no woman can give away more than ninety or a hundred years. And of these years, more than half drop out entirely, being spread over youth that is still sexually immature and old age that is no longer sexually mature. In round numbers which are high, the period for procreating is limited to about thirty years. That would leave room for only thirty children.

We all know, however, that even that is a patriarchal figure, which we must not accept even ideally. Let us say twenty, and let us say that it would therefore have a logical sense if every woman were given the capability of bringing twenty children into the world. Twenty ovum-cells per woman would be necessary for that. And that would give a maximum limit of twenty sperm-cells for the male. Twenty ovum-cells would represent a little piece of living substance

the size of a modest blot of ink; strung on a string they would just barely exceed the length of a hyphen. Beside them, twenty sperm-cells placed end to end would appear as a comma of exactly one millimetre in length.

With these means, everything could be achieved. All that would still be required would be to have the sexual act so arranged that when it took place, it would really bring one sperm-cell together with one ovum-cell. That ought to have caused the least trouble of anything, on the basis of a direct "creation" with a purpose.

We human beings, who, after all, are still in the infancy of our own conscious ability to do things, are able to transmit the cells of the body of one living being to another one with almost infallible certainty on the most diverse occasions: As gardeners, we graft a cultivated sprig on a wild stock, in other words, we force the shoot of a better, finer fruit plant into a living cell connection with an inferior sort. As surgeons practising the art of transplantation, we transplant living pieces of skin on the human body in order to cover wounds or to form a new artificial nose. And in the case of our protégés from the animal and vegetable kingdom we frequently take even the sexual act of fertilization into our hands: in our fish culture (we already talked about that) we artificially fertilize fish eggs with fish semen and from hoary days of antiquity, the fertilization of the date-palm has quite habitually taken place by human hand, pollen from the male flower being stuffed into the open female bloom. This palm pollen can be kept for years, like snuff, and is still good when the gardener needs it. How much better should the Creator have known how to construct man in such a way that the utmost simplicity and certainty of the means would correspond to the simple, great purpose.

And what a contrast is afforded by the facts!

You look at the ovaries of a young, ripening girl. She is just approaching the dawn of love, and so you expect to find the still untouched plant for those twenty ova in all, say ten on the ovary at the right and ten on the one at the left.

And instead of ten on each side you find thirty-six thousand, seventy-two thousand ova in all, already prepared.

Even for a woman who brings twenty living children into the world, that is still seventy-one thousand, nine hundred and eighty too many! In the most favourable case, the fate of these supernumerary ova can be nothing else but annihilation while still in the

womb. And we see the ways of annihilation clearly enough. The bulk shrivel up and perish on the ovary, like barren berries. A part, although fully matured, die by that strange process which is marked externally by the unimpregnated female's menstruation. Quite unconcerned as to whether or not male sperm-cells are really being introduced from the direction of the sexual gateway, the female body performs the automatic action which we already touched upon once before; at least once every month an ovum matures completely on the ovary and becomes detached. This takes place on the possible chance of its being fertilized. If a sperm-cell just happens to come along, the matter succeeded. But in countless cases it does not succeed. Instead of fecundation and beginning pregnancy, what we call menstruation takes place. And the ripe, detached ovum dies just exactly as ungratified as those others shrivelling up on the ovary. As is well known, menstruation takes place every four weeks under healthy conditions and normally ceases to occur only when pregnancy has begun. Even with twenty pregnancies in thirty bearing years there would still remain a fair amount of opportunity for losses of this sort, before, in between and after. But now take the infinitely more frequent case of fewer pregnancies right down to none at all. Think of those two children, which, strictly speaking, are all that would be necessary. Having two children would leave twenty-eight years free, each year having twelve months. And each of these months would mean at least one ripe detached ovum maturing, wandering and perishing in the female organ. That would make three hundred and thirty-six ovum-cells that would wretchedly perish in their prime, without reaching their goal. In the case of an old maid there would be all of three hundred and sixty victims.

You can get a pretty, graphic picture of the seventy-two thousand berries on a female bunch of grapes, if you think of each ovum developed to the mature size of one-fifth of a millimetre in diameter, and then string these ova one next to the other, like a pearl necklace or like one of those strings of eggs which are laid by the toads in their puddle in the springtime. You will get a string of approximately fifteen yards in length. If it had the necessary strength, you could let yourself down on it from the third floor of a tall apartment house. And these fifteen yards are now put down against that hyphen of four millimetres in length (not quite sixteen hundredths of an inch), representing the sperm-cells which would suffice for twenty children. . . .

In itself, this piling up of cells in the big cell state of the human body does not mean much. These seventy-two thousand are lost in the immeasurable crowd of cells like a mere bagatelle. Hardly anybody has any conception of what huge lengths would result if one pictured all the cell material in the human body strung out side by side. The red corpuscles which give the red colour to your blood and each one of which represents a stunted cell, are much smaller than the ovum-cells and with the naked eye you become aware of their red colour only from the blood, but you cannot see the individual globules. Yet their number in you runs up into twenty-five billions. And if you picture these twenty-five billion red corpuscles strung into a necklace, you get the enormous length of approximately one hundred and twenty-five miles.

But there is a profound practical sense to this vast mass of corpuscles. Their enormous surface, unrolled in the human body and slowly and continually drawn through the lungs as if by a roller furnishes the gigantic suction field which takes up the oxygen from the air, oxygen being vitally necessary for you, and thereby it maintains your life. No purpose of this kind is to be discovered in those countless ova that are frittered away. But the thought does occur at this point what precious property is being squandered. There is not only an individual—a cell being—in each of these ovum-cells but there is in it all of the highly concentrated force of the entire parental existence and of all the ancestral past; that mysterious force which enables an ovum-cell in a favourable case (after its marriage with a sperm-cell) to produce a whole new human being. The body as well as the soul of the mother and of all her ancestors, everything that the child directly receives from the mother and these ancestors, already lies engraved in the little cell's chromosomes like the stalk in a little grain of wheat. This living mote of matter is the very tiniest of crystal mirrors, but in this mirror once more lies the whole gigantic picture of the body: as a true microcosmos, each of these little ovum specks of dust contains the entire macrocosmos of the mother and all her ancestors. And so many thousands of these precious cells are doomed to inevitable destruction!

The ghastly phantasmagoria grows when you consider the male semen.

The maximum figure of twenty spermatozoa per man has the effect of a poor joke compared to the most modest functional efficiency of a healthy human being. According to the sure figures given by

Lode and Waldmeyer, there are more than two hundred million spermatozoa in every single ejaculation of semen by a normal man.

Let your mind's eye wander back to the picture of the living drop of semen under the microscope. A Milky Way of quivering, swarming little sperm-cells passes before you in that one little drop. How they crowd and whirl and jostle! What would the twenty that you had put down as the necessary maximum number amount to in this small witch's cauldron of homunculi? But your microscope's magnifying field takes in only a small section of the drop, which you clearly see with your naked eye; it just gives you a sample, as it were. The same life quivers throughout the entire drop. This drop in turn is but a small fractional part of the living wave that flows out of a mature man during a single sexual act. But this same man is capable of performing practically an endless chain of such sexual acts. He is not merely capable of doing so. His innermost nature drives him and compels him to do it. The tiniest fractional part of that little drop would be enough to generate the huge number of twenty children which we assumed. But this wave again and again rises and surges in him. There are no pauses, even when the act of true cell mixture has taken place, for duration love does not touch him further in this respect. He wanders away from one woman, where nature's sacred purpose has been fulfilled, and his strength is almost instantly restored, with its power of a conqueror, its compulsion that sweeps everything along with it and its certainty of new conquests as soon as a suitable opportunity is offered by a woman. And two hundred millions are shot at each and every act. . . .

In this case, the disparity between amount and purpose is so colossal in the very number of the acts, that it has forced man to do some thinking on the subject ever since he has been able to think, and long before any one had the slightest suspicion of the mystery of wastefulness in the case of woman. For in the case of the female all this takes place mysteriously, in the interior. And no one had any idea what menstruation signified. But in simple, actual practice, one had learned from the body's wisdom that the male's semen was somehow necessary for procreating children. For thousands of years it was even believed that the female was merely the black, fertile soil in which the man planted the true divine flower with his strength. Two hundred years ago an entire little human being was still looked for in the spermatozoon—a veritable homunculus which

was supposed merely to develop and grow in the womb. But the farther men chose to carry this supposition and no matter in what mistaken notions they landed, the more terrible did the spendthrift dissipation of this precious semen become apparent.

An ocean was poured out in order to fill a cup. . . .

You know the glorious picture in the Hindu gospel: how Buddha, the king's son, in the fullness of life's May, struggles out of the passionate brown arms of his beautiful young wife and indolent of soul goes driving in his golden chariot through the blossom-laden morn. And there on the bank of the sacred river, in which the sun is bathing like a naked queen with shimmering golden hair and lotus flowers are waving, sits an old blind man with bald head and crooked limbs and laments his age. And in the cool fairy-tale shadow of a giant fig-tree lies one sick unto death, and groans, and the sores on his body emit a pestilential breath. And as the driver lashes the horses to get away quickly from this ghastly spot, the royal chariot is stopped in midst of all this blossom magic and glamour of sky by a silent procession: they are carrying a dead man to the place of burial. Then Buddha climbs out of his golden car and casts himself in the dust, for he has come to know the world's misery. And he abandons crown, wife and child and goes into the wilderness, to meditate on things. . . .

But this royal son of mankind would not have needed to leave his young wife's couch at all. He could just as well have learned the terrible earnestness of the riddle of the universe from the hecatombs of squandered sperm-cells.

A thousand acts with this woman, and the whole wave with its infinite freight of life, in which each mote contains the pictures and traditions of the millions of the years, a thousand times foams away into nothing; each wave with its myriads of hoary old little souls dashes against the unfruitful shore and flows away into nothing like the breaker of the actual flood that leaves its mussels and jelly-fish and starfish helpless on the sand till the burning sun dries them up or the harsh sea wind shrivels them to pale skeletons. Every single loyal, passionate act of love, lapped in the soft cajolery of light and perfume of a royal couch, is the dire extremity of old age, of pining away, going blind; a pitiless mortal sickness and a funeral procession that never ends. . . .

And even if one of the thousand waves meets the true lotus flower,

the sacred blossom containing the egg of life; in this supreme wave but one little speck attains the flower, even here there is a last hecatomb of others that stand on the mountain top and see the city of life flash with its golden roofs and yet become even as the knight of the fairy-tale who slew one hundred dragons, only to be eaten by the one hundred and first because his ancestor twenty generations back was not called Rosamond.

Buddha the brooder would have to do still more thinking, however.

"What a huge expenditure has been ignominiously squandered!" to use Mephistopheles' expression, in order positively to coax and defy man into committing all these seemingly senseless extravagances.

As you well know, that mysterious sweetness, the nerve storm of sensual pleasure, is connected with the sexual act. Stormy waves of a wild, one might almost say barbaric, sensation of pleasure break over you. This feeling draws you down into its abyss like a helpless ship gripped by the vortex. You merely have to think about it—in order to be seized by a soft vibrating feeling, like the seductive, dizzy spell of sinking without a will of your own. The world is blown away like the smoke of the clouds up there. And all your being plunges down into the sacred purple depth in drunken surrender.

It is purely a natural emotion, far removed from your conscious thinking. It is a sudden coming to life again of your physical bottom, which heretofore you only noticed when it tossed up pains like krakens and sea-monsters on your mental shore, but which all of a sudden now presses you with its lava-hot wave of desire against the stars. It is the whole dark region of "nature" deep down below your consciousness abruptly thrusting upward. And this thrust is pleasure. You hang on it, powerless and at the same time blissful, like a leaf on a tree, which cannot wander and cannot speak but to which the golden sun has automatically found the way in cosmic destiny, and which now passionately quivers and starts up under the down-pouring rain of light, heat and heavenly blue.

But the storm blows over. You are again sitting on the barren strand. The strand of your thinking. And you think. Buddha rests his forehead on his hand. Marvel of marvels! The sexual act, as the supreme act of mingling between the two participating mature human persons, pays this red-hot, blood-red nervous premium; but

not the true act of procreation, be it understood, meaning that most inward, genuine mixture of ovum-cell and sperm-cell.

It would be so absolutely logical for things to be turned just the other way around. Procreation was necessary. Let us say, by divine commandment. So that the tree of mankind might flourish, after its seed had once been tossed into time. And now sensual pleasure was created as a bonus for procreation; as a premium which forced the sexes together with the might of a conqueror, stronger than all their thinking. How very simple! The moment of really consummated procreation would have released the feeling of voluptuousness in the man as well as the woman. The moment in which the sperm-cell mingled with the ovum-cell; or to put it in the terms we had previously coined, sensual pleasure would regularly have to coincide with the actual climax of mixed love in its entirety.

Oddity of oddities! Sensual pleasure does not dream of accommodating itself to this logic. It has nothing whatsoever to do in our case with the deeply concealed, subsequent mixture of ovum-cell and sperm-cell. It makes not the slightest distinction between a sexual act which really becomes mixed love in the sense of that specific purpose and one which remains hopelessly stuck in distance love as far as the ultimate purpose is concerned. And sensual pleasure has contributed most of all to the fact that the fine but sharp last boundary line between mixed love and distance love has again and again become blurred for us. A sexual act in which the last distance between the ovum-cell and the sperm-cell can never in the world be covered is just as valid for it as a sexual act from which a new little human being does actually originate.

The king's son on the lotus bank unites with his young sweetheart. The emotional thrill of that deepest sensation of bliss runs through both of them. As if the individual were dead. And this death were new life. Life in a higher sun, in new light.

But nature pays this premium in the case of the man for the simple separation of his sperm-cells, for the little human Milky Way that tears from him like a wild torrent, as if it wanted to plunge out into the wide universe. Let it plunge on out! Where it gets to is a matter of complete indifference to this feeling itself. In the case of the woman, this premium is placed on the moment when this wave of life is first taken in, the moment in which the strange Milky Way with its millions of tiny little points of stars intersects the big constellation of her female individuality in any way. Strictly consid-

ered, not even that can be clearly asserted. So dark are matters here. The conflict of opinions continues possible. But that is immaterial.

One thing, however, is sure. It can perfectly well be the case that the female's ovary with its gigantic number of ova has not sent out a single ovum-cell, capable of being fertilized, to meet this semen wave and does not send out one, either, during the entire time the most enduring of those two hundred million spermatozoa could still live and wait for it to come. It can equally well be the case that a young little human being has at this same time long been lying in this woman's womb, like a dear lotus bud floating on the waters, and that it bars all roads leading to new procreation by the comfortable right of possession. No matter what further reasons there may be, which can give all of the spermatozoa a sealed death sentence as they enter in; may the man release them in never so carefree fashion as healthy wanderers and may the woman take them up just as unthinkingly, doomed to hapless imprisonment and wretched death from starvation, even to the employment of that artificial wall of a fish's bladder; yet nature's premium is paid in full, with full force, the lightning of feeling cutting loose and storming along its appointed path, the intoxication triumphing, all-powerfully, master over two human beings, till their thinking breaks to pieces and their souls flow over into one another as if they had suddenly become suns, light, a force of nature, the harmony of the spheres, the universe itself, enjoying something higher than merely soul and body in time and space. . . .

Credo quia absurdum.

And then may Buddha on his royal couch dream what else is attached to these things. Once sensual pleasure is freed from the genuine act of procreation and can go the limit, the whole pedantic consistency of nature sets in; the same logic which, if mountains are sometimes to labour and bring forth a mouse, now pays out a Mount Everest in mice. An immeasurable longing for voluptuous pleasure rustles through the great green forest of mankind, through every springtime wood of a new generation anew, on and on through the millenniums. And this sensual pleasure actually does lash billions and other billions of pairs of lovers together in whose case any idea of real procreation is an absurdity. The unfruitful, the pregnant, and the women who fail to achieve nature's great purpose through some chance of the moment; the storm rages over all of them. The

mad intoxication of longing tears them along toward that other kind which can be gained even without procreation—sensual pleasure. And into this mad whirl there now is discharged the insane overproduction of the male's sperm-cells, which we talked about. The hecatombs plunge down, all doomed to certain destruction, without the faintest red tinge of dawning hope. Billions and billions of acts, whose sense is sensual pleasure and no longer procreation. Milky Way after Milky Way of longing life dying of this new sense; a world in each perishing spermatozoon.

A dull suspicion quivers through humanity, that there is really an absurdity in this. All barriers are shifted. After sensual pleasure has renounced mixed love in the act and pledged itself to distance love as having the same rights and privileges, distance love rises up and becomes a despot over sensual pleasure in the strangest acts of its own invention. Poor souls, solitarily drifting about on a plank of life, suddenly discover that sensual pleasure can be obtained without a second being. All alone. Or a veritable caricature of the act is invented with a second being of the same sex. Between male and male, female and female. At bottom it is only too self-understood that things come to this pass. Woe unto man when a sorceress of such power as sensual pleasure is turned loose. Let loose from the golden anchor of having a meaning in procreative life. It is easy for you to condemn the former practice and brand it as the deepest moral shame. And say that the latter runs counter to the penal code in the modern state. But that will not get you one step further in philosophy. Here you must understand. And out of understanding comes infinite pity. But even compassion will not give you the right attitude. You must understand the tragedy in its whole terrific force, which can no longer be grasped even with soft sympathy. You must see Prometheus, poor naked bleeding Prometheus man lying here, forged fast on the razor-sharp rock of a paradox. It was not man who created the absurdity; the absurdity pressed man between its spectral thighs, like the werewolf of the myth, and rode him, broken-winded, till he foundered. And this human being fought hard enough against it for his part.

Open that tremendous book, the true Bible—the history of civilization. There you will vividly see the very moment in which something went through man like a dark shudder. A dark suspicion of two different kinds of things. The true, sacred act of procreation. And the mad hunt after a special intoxication of bliss, which in mil-

lions of cases dissipated the wave of life for nothing. That came as a terrible shock. Undoubtedly this suspicion first flashed up in connection with those totally senseless acts of onanism and pederasty. Then it continued to burrow further. Its question came to embrace male and female as well. And from this point the text continues in letters of blood.

Man in the sea of contradiction reached out for a spar. He made a sense for himself; that terrible sense already mentioned. Sensual pleasure suddenly became a work of Satan to him; an additional gift of the devil's, laying siege to God's life work. Sensual pleasure meant sin. Satan's claws were stretching out for all to behold where sensual pleasure boiled up without any act of procreation. And whoever succumbed to it, whoever merely named it as something blissful, plunged into blackest sin and kept on falling through all stories of moral and social contempt. Red hell burned in the red heat of the senses. The body, the naked body as such became a sin, a sinful body, as the vessel of lust. In the end the very deepest doubt arose on this point: namely, if sensual pleasure was everywhere a sin where it made its appearance separated from procreation, was it not a sin in the act of procreation itself . . . was this act not contaminated; had sin not eaten into its very marrow, since it could not take place without sensual pleasure? The writing grows ever bloodier. The scourge of the ascetic, mortifying his flesh, cracks. Poor humanity! This morality with its doctrine of sin became the vulture that now fed on Prometheus' liver.

And what did it all help?

Buddha castigated himself, till the red blood spurted on the walls. Away with this hot blood! The clear, conscious spirit casts out sensual pleasure. It wills no longer to let itself be swallowed up by the waves of its raw natural bottom. May mankind come to a stop as a whole; may it be wiped off the tablet of the universe like a phantom. Supreme peace draws near. Longing for sensual pleasure has died out. And with it all its abominable consequences are gone. The tortured body lies at the feet of the victor, the spirit, like a withered leaf. . . .

But weariness quivers through the spirit as well. May it garner its wages, and rest after its hard labour. It is the sleep of the victor, who has triumphed. And Buddha sinks down on his penitent's couch and sleeps. Poor fool! Sleep itself is nothing but a sinking down into that great subterranean region of the individual, whence

sensual pleasure springs. Buddha sleeps. The outer senses are silent, as if hung with black cloths. But now it gets light from within. The dream stalks onto the barred stage. And with cool spectral hand lights the lamps and brings everything back again. A magician who removes all seals, blows up castles, breaks chains. Here come the liberated. The body. The naked body. Woman. Loving. Loved. Perhaps even those extreme spectres: the rash comfort of the solitary, and the other being of the same sex. And the hallucination simply reaches through the body with a unison force which the waking spirit could never have attained. It does not ask questions, it does not philosophize and does not moralize; it acts; with rigid, straight, spectral steps, sure of their goal, it goes and gets the body. One, two three; it has the body where it wants. The male wave of life boils up and pours out. And at the same time, the entire individual is plunged into the full red heat of the most powerful sensation of sensual pleasure. Poor ascetic, who sought to struggle with a demon that winds stars into garlands! And this demon was not supposed to be able to take a few million sperm-cells away from you, and squander them at will. . . .

At will! And if we had rooted out sensual pleasure utterly, buried it under millstones and driven a sharp stake through it in its grave, as through a vampire, nature would still continue to be spendthrift in us with triumphant power. And Buddha's final thought would have to be that we must not attack carnal desire in this fashion, if we are concerned about procreation itself.

For no matter if this feeling does play its rôle never so luxuriantly independent of procreation, and run into the maddest labyrinths, it is a question whether any sexual act would still come about at all anywhere, and with it therefore the simple prerequisite for genuine procreation without sensual pleasure.

Before the thinker's eye there arises in a last disquieting vision everything repugnant that surrounds this act, all the things that do not appear alluring but as veritable bugbears.

The sexual act is the highest, most sacred act in the continued existence of humanity. All that man has to offer that is most precious ought by rights to be lavished upon it. Thus poetry and art dreamed it. Zeus sinks down to the virgin in a wave of gold, suffusing her whole being like transfiguring sunshine from heaven. Why could not the beam of a loving eye have cast its spell and carried the wave of power from man to woman, from eye to eye; the

wave of energy needed for the generation of a new human being? If it was necessary for two cells to mix physically for this purpose, why did not a clasp of the hand release a single male cell which would then wander over into the female's cell association. A look of genuine love, a hand-shake with the strong feeling that we wanted to be "two" and yet one: and the clock would be wound up and, gently ticking, would work out the child of this love until the hour of birth struck. . . . And why should not this child of love ripen in midst of the mother's purest bodily beauty? Why should it not blossom out of her like a lovely, gay flower; say a rose that would bud between her white breasts and redden there? Or become detached from her burning lips like a great blessing, a benediction of mankind, which a new little child does represent? Ever when man has pictured a naïvely pure island of the blessed, he has dreamed that the new human being must somehow come into existence like that. The little children lay in a blue lake, and a merry bird brought them to the parents. Or a blue lotus blossom opened and became the face of a child. Or a virginally beautiful goddess arose in naked purity out of the sea foam one joyous morn. Or Pallas Athene sprang forth like a brain child from the thinker's cleft forehead of a world dominating man.

And now the process as it really is.

Credo quia absurdum!

Is there a more absurd and incredible fact than that man's highest and most sacred act of love is connected with the urinary organs? Organs through which one of the body's ugliest sewers discharges daily? The finest, highest, noblest extract of all mankind of the millenniums flows in and out through the selfsame gateway, through which a malodorous waste product of nutrition, which the individuality of the human being has scornfully rejected, is removed as a regular thing. The envoy of the cosmic principle of continued creation, the true great poet of the eternal epic of "humanity," the Atlas that carries us all on his proud shoulders, crawling in and out in the city of mankind through the offensive channel of a latrine during a few moments when the disgusting current that habitually belongs here happens to make a brief pause . . . what a grotesque game!

The higher animals had already recognized these excretory matters as worthy of being covered up. The dog buries its excrement. A special moral code, whose natural sanitary basis is very trans-

parent, developed on this score in the case of man. Every one knows these things are necessary. But they are the extreme diametrical opposite of things experienced in common. If there ever was anything which one has to attend to all by oneself as much as possible, this is it. And now Nature demands that the highest act of love is to take place between two persons specifically through these urinary channels. The love-individual is to close itself in siphonophorian fashion at this most awful of places. Who has not at one time in his youth, as he grew to know these things, experienced the odious moment when for the first time (in addition to the general double shock of dual sexuality) it dawned on him that the entire sunny splendour of love has to squeeze through this act between two urinary organs! These very ones of all the organs of the body! Two souls wanted to melt together in the highest and most sacred act, the act whereby the individual's great longing at last attains the universe, all that is higher, humanity, the succession of the generations, the true superman, continuing to live on and on in child and grandchild and great-grandchild for millions of years; and this melting together is to go the way of urine. In the most inconceivable position, and one most inconsistent with the free godlike gait of man. Amid all possible awkward attendant circumstances that are accentuated even to the point of the utterly ludicrous.

Then childbirth! Pregnancy already a disfigurement of the woman to monstrous deformity. The child must come out through the same nasty urinary gateway. But this opening is tiny compared to the child's size. Violent hemorrhages are caused by its tearing loose in the interior. The child finally struggles through the narrow crack in a veritable death grapple, amid blood and wounds. While it is doing so, the mother lies there like a dying woman. Her cry of desperation is perhaps the most piercing sound that the human voice can produce. Compared to this, what a lovely picture of peace is the gay egg which a bird lays in a warm little nest and which the little new customer nibbles at from within, as at a sweetmeat till it cracks.

You feel the full contrast, however, in one of those delightful lemon groves on the Riviera. Dear white blossoms with an intoxicating perfume and at the same time golden fruits hang on the green branches, according to the custom of these wonder children. In flower as well as fruit, the tree celebrates the triumph of its beauty. And this white flowery star is the sexual organ, this golden ball the

ripening fruit. You gaze out through the still valley, where lemon grove after lemon grove moves inland, out to the blue sea that floats like a soft eye in the valley's gateway. And you are gripped by the utter desperate incomprehensibility of your humanity.

Why did not God create His human being like these lemon-trees? Why is a woman's cheek not a sweet blossom on which a kiss would procreate life? And why does not the lord of the earth ripen in a golden apple of the Hesperides? *Credo quia absurdum.*

Go into the wilderness, Saint Anthony.

§ 5

Bud forth, O frozen Christ!
For May is at the door:
If Thou dost not bloom now,
Thou'rt dead for evermore.

ANGELUS SILESIUS

But we do not feel the least bit like going into the wilderness. We want to lie on our backs and dream happily up into the golden green foliage.

For those two different things do not exist at all: that God, who wanted to make man so good; and this poor wretch of a human being, who turned out so miserably. There is only one mankind, and that is a hoary old veteran fighter. What man has, he has obtained from himself. Once upon a time he was an original nebula, a sun, a primordial cell, a worm and a fish. And now he is man, not because God made him so, but because his giant arms kept on reaching out and spanning ever more: as an original nebula, he gripped the sun, and the first cell as sun, the worm as original cell and the fish as worm. And finally the outermost annual ring till now, the greenest and last one that you call man.

Man climbed up out of a dark, deeply mysterious primordial bottom which you can quietly call God. But you know about Him only through things, through the world itself. Where you want to catch Him separately, He is silent as dead space! But as far as you see, there is no creation of perfection in this world from the beginning. To be sure a something like a very slow tendency toward the light runs through all this process of coming into being. Formations seem to become ever more harmonious. Certain forms acquire longer duration, greater unity. They gain in depth. Eyes open and look out into the distance. Intelligence awakens. The world becomes inwardly clearer to itself as if awaking from dull sleep to clear consciousness. You can call this trend to light God too. But the manner of it signifies an ineffable struggle, an endless, laborious experimenting. It must keep on moving without stopping, with a very

small gain, satisfied if this gain does pile up as time passes. But how much time that takes. How many groping attempts. How many provisional stations with a thousand shortcomings, where the next step can start only very slowly. An eternal struggle from chaos to light. Tiny first little points of light, little islands of order in the grey primordial waters of the chaotic. And out of the midst of this struggle, man, too, emerges. Man, too, a fighter; man, too, a station attained by wearisome fighting, with a thousand directions everywhere, indicating how things ought to become even better beyond this point. The light is already so strong that at times he already feels himself to be wholly perfect. But the brighter it shines, the clearer become the cracks, folds and gaps of his laborious origin, of the work that is still only relative, of the compromise behind which the true divine call of nature does not sound: "Arise, you are completed, Adam in Paradise," but: "You, too, are only a fighter; you, too, are only so bright, in order the more to comprehend the eternal 'Excelsior' with your eyes; in order to see the work that still has to be done." If you hearken to this call, you will become modest and courageous at the same time. You are alone. And you are still deep down. But in you, too, the struggle of the power of light in the universe is taking place. And you will mount upward, as you have climbed.

Through all the seeming utterly insane contradictions about love that storm over you there runs that deep, earnest, solemn melody which does not reach him who rages and him who despairs, but only draws near to the quiet, gentle beholder and interpreter of Nature. It is a melody of peace. It runs very deep. It murmurs and murmurs.

It is evolutionary history again that murmurs down there.

Waves of your world history.

You lie upon your couch of love with this history of the world. You gaze upon your naked body as a sceptic. You gaze upon your darling. And you can find no answer. But you must see through both of you. See your darling's white body gently dissolve to the beat of that still, murmuring melody into a bluish cosmic mist, see it flame up as a sun, see it glow down to a red star. See it drag itself along the strand of the oldest ocean on a thousand soft little protoplasmic feet. See it wriggle along as a many-membered brown worm; see it shoot along as a fish with silvery scales; see it lie in the sun as a lizard. And now in turn see your questions about love in

all that. The devil's mask of absurdity falls. You no longer pray. You no longer curse. You understand.

Every one of those "absurdities" is true as a fact. But every one of these facts is at the same time a sign-post pointing to a bit of history in the sense of those incessantly groping experiments in evolution, through which our human origin passed. The traces of this history are never real absurdities, however. For the whole course of this history up to us is one continual ascent; it was labour of light, on the whole. Absurdity begins only if you consider yourself to be finished.

You can, to be sure, lay yourself down under the sacred fig-tree for a hundred years and deedless wait for an answer: your body will tell you nothing that way. The comfort of knowledge is a piece of world evolution, in that, like everything else, it demands hard work of one's own. Even then it still remains a fragment; it remains a provisional stage in the evolution of thinking, just as our whole human body with all those "absurdities" is such a stage for the present. It has been provided for that our grandchildren, too, will still find plenty of work on hand for them to do. But meanwhile it already puts in our hands more than enough material for purposes of exorcism, to free you, wise Buddha on your couch of love, from the worst of those imps of the devil, at least.

The first "absurdity" to experience this "sanctification by history" is the tremendous wastefulness in the matter of spermatozoa and ova.

Well, then, you did not come out of the studio of a heavenly Phidias as a finished work of art; but your youth was spent among the little Rumpelstilzes. Let us once more fix in mind the most decisive fundamental line of our old Rumpelstilz story, for it is of decisive importance at this point.

Every one of these original Rumpelstilzes, in which man too at that time was still completely inherent during a certain first act of his prehistory, consisted of but a single cell, instead of the billions that now compose your body. If two Rumpelstilzes had to form a genuine love-individual in mixed love, there remained no other choice for them than actually to fuse with one another, body with body. As if you and your beloved were to melt together, and the product of fusion were now the child. The two simply did what the sperm-cell and ovum-cell exhibit in your act of mixing.

For every little Rumpelstilz was simply a single cell; the one equivalent to a sperm-cell, the other to an ovum-cell.

Only later did the state of affairs arise as a further stage of evolution, where such one-celled Rumpelstilzes habitually got together in big associations. They formed those lumps of cells which gradually developed into regular higher "persons." And it was only with these cell aggregations that the custom for the first time made its appearance, no longer to form the love-individual by mixing the whole, but of leaving the matter of mixing to certain cells in both associations which were delegated to perform this task, as it were. This was connected with the great principle of division of labour, which at once began to play such an important rôle in these cell associations. Certain cells in the association devoted themselves solely to eating, others only to rowing or defensive activities and so on; but all performed their functions in such a way that the entire association profited thereby. This is the way by which your complicated human body with all its organs finally originated: a gigantic cell association, in which one group of cells chiefly breathes (the lungs), another group digests (the intestines), another group forms the external protective covering (the skin), and so on. Very early in the game, and at a time when you as man were still in very low animals, in cell aggregations of the most primitive sort, a group of cells was delegated in every association to be special mixed love cells under division of labour. From time to time these were simply put out of the association more or less rudely, with the express purpose that each one should of itself seek a cell that had similarly been put out from another association, for the object of mixed love. Once they were out in the open, all alone and independent, each one of these cells really felt itself transferred back to the original condition of a solitary little Rumpelstilz. According to the latter's old custom, it either wandered or it waited until a strange delegate from another association somehow found it; and it then fused with this one, and out of the product of fusion there now originated an entire new association, by renewed cell division. The old single little Rumpelstilzes had already largely become separated into two different sorts for the purpose of finding one another: a small, more active sort and a larger, more inert kind; and these two extremes had come to prefer one another for the act of mixing. This practice now continued in the following form: the big cell associations customarily sent out two sorts of love

delegates; smaller, faster workers and larger, lazier ones. Immediately on being released, the first kind started out in search of the second kind. And the latter sort mostly just went a very short distance, then sat tight and waited to see what would come their way. In other words, tail-wagging, swarming sperm-cells and buxom egg-cells.

In this connection a method enjoying widespread popularity early developed, one cell association turning out only fighting semen troopers and another association nothing more but little egg princesses that waited the coming of the others. This particular method became more and more established in the highest realm of life; and it definitely and finally introduced the fixed personal antithesis of male and female, at a certain early vertebrate stage in our human genealogical tree; in contrast, for instance, to the hermaphroditism of the snails, where each and every person is male and female at the same time, though the act of mixing must take place in the usual way.

All this was previously narrated in detail up to this point. But now we come to an important consequence.

If you imagine man's ancestors as having arrived at this stage, separated into male cell associations that sent out only sperm-cells and female ones that sent out only eggs, then, strictly considered, the demand would already have been logical at this point that for the purpose of preserving the race, each female needed to turn out just exactly two eggs and each male just two spermatozoa, assuming that these two sperm-cells would actually reach two egg-cells every time and that these two egg-cells would likewise come together with two strange sperm-cells each time. Just as obviously, however, this assumption was subject to an obstinate difficulty in the exigency of things as they actually were, inasmuch as the sperm-cells as well as the egg-cells were thrown out at random to take their chance, with the general slogan, "Seek and ye shall find—or else not." For there was absolutely no talk about any "copulation" between the male and the female animal for a long while yet. In the case of the one party, the eggs simply emerged automatically, about like an ovum in the case of an untouched virgin to-day. An ovum becomes detached from the ovary at a definite time without any copulation, and wanders a short distance in the interior of the body, when menstruation follows. You need only picture to yourself that this girl's ovum passed not only through the ovi-

duct and the womb perfectly capable of living, as is actually the case, but through the external gateway as well, and that finally, in the almost invisible form of a dot, it walked on out into the wide world all on its own, and you have an absolutely similar occurrence. In the case of the other party, the sperm-cells emerged alive just as they to-day leave a solitary man, let us say, through an act of onanism or, what would be somewhat more natural, through one of those pollutions, which we discussed before, resulting from an exciting nocturnal dream.

With these pictures, get the following clearly in mind. Those older ancestors, in which man was still inherent at that time, lived in the water. You will recall that your ancestors climbed on land for the first time in the vicinity of the mud-fish and the amphibian. All your ancestors that went before breathed water and swam or crawled through water; beautiful bright green or dark turbid sea water, as the case might be. The ocean is gigantic; it flows from continent to continent. We shall certainly not imagine the males and females of man's wormlike or fishlike antecedents being separated that far from one another. Let them be as close together as a man and a woman who are swimming side by side with two arm lengths of room between them at a mixed bathing beach. Now imagine that while they are swimming, a single living little ovum, the size of a pencil dot, becomes detached from the woman and a single microscopically small spermatozoon, only one-twentieth of a millimetre in length, from the man, in the open moving water. Let ovum as well as spermatozoon possess the good quality in full measure of being able to keep alive for a while in cold salt water. But will they ever come together? The probability is certainly very much slighter than in the case of two fleas in a hay stack. Much smaller, because the incessantly moving water will easily sweep them apart.

The probability would appreciably increase, however, if not just one but a hundred, a thousand or ten thousand spermatozoa were released. Or if the number of ova were increased. The more, the better. And once the number of sexual cells that you might choose to have poured out was so great that they filled the whole cubic yard of water separating the two swimmers with a more or less thick cloud, a sort of certainty would be attained, not only that the necessary one-time mixture of just two cells would take place but very probably that there would also be an immense overpro-

duction in the way of procreation. This overproduction, however, might be highly desirable if a being were involved which was subject to being strongly pursued, and whose mortality figure steadily and rapidly increased, so that procreation had to be doubled and redoubled, as it were, to keep up with the mortality.

Now that is the situation, in which nature very manifestly first started "squandering" sexual substance in the process of man's origin; not on the basis of some absurd whim, but completely under the spell of our old "Good Fairy Utility." Judged by the logic of the situation, real "wastefulness" was by no means involved. Sexual procreation in itself already existed. Sperm-cell had to reach egg-cell. But at the same time, physical copulation had not yet been invented. The sexual substances left the male and the female respectively like pollutions and menstrual blood. The one and only expedient was to increase the mass of these discharged substances to such an extent that the streams would flow together on the outside with practical certainty. In other words, the primeval basic fact of mixed love already existed as law. But that last, extreme, most intimate act of distance love—copulation—was still lacking. Spermatozoa and eggs, thrown out into the open, had still to cover an incomparably greater distance independently. And therefore their number was tremendously increased, on the principle that if a thousand pioneers fail to reach the North Pole on their hard expeditions, the thousand and first will get there.

Other motives, which were bound to prove favourable to increasing the number of sexual cells released, undoubtedly mixed in. For instance, the one we just touched on, which made the greatest possible number of actual fertilizations appear desirable. Furthermore, the fertilized eggs that matured, not in the womb, but in the open water from the very first day, were exposed to multifarious dangers. Young animals at once starting to wander around defenseless and without parental care perished by the thousands before they themselves could engage in reproduction. And so every act had to look ahead and provide for the future as much as possible; it had to hold high the ideal of real mass procreation. This viewpoint in particular was bound to lead not only to the number of sperm-cells being multiplied as luxuriantly as possible, but the eggs to a certain extent as well.

You may say that this principle is a crude one; but it is certainly very far from being absurd. If you want to draw a compari-

son in human terms, this principle resembles the method of a hunter who wants to shoot a rabbit and who for this purpose fills all the air full of shot over a considerable part of the field in which the rabbit is known to be sitting somewhere: one shot must hit. In the case of a human hunter, a little act of wastefulness in that same sense must first precede the actual shooting, for the hunter or his dog first has to go over the whole terrain and do considerable superfluous walking to no purpose before he finally gains the right spot and the rabbit jumps: only now can he fire his one shot. The method of human intelligence remains the simpler one.

Yet it cannot be denied that of all methods which are possible here, only two are absolutely sure. The one method is the absolutely accurate single shot at the rabbit with the help of seeing eyes. The other method is that crude one, which blankets the whole field with a deadly rain of shot and thus kills the rabbit in any event. With the help of this latter means which is blind but which, when worked to the limit, is just as effective if not surer even, an infinite amount of utility, preservation, adaptation and progress was achieved in the animate world in the Darwinian sense of natural selection, before intelligence, shooting directly at the target, came into play at all.

In various individual cases you invariably find this fundamental principle at work as a substitute method wherever a certain blindness is involved in some form or other. A bird having sharp eyes flies straight to the branch on which it wants to perch. The shoot of a climbing plant, which undoubtedly is still blind in this sense, first feels around the entire circumference of a circle which it can reach outstretched like the hand of a clock, and does so again and again, in search of a support on which it can creep up; if it encounters a pole in so doing, it grips the pole and climbs up. Compared to the direct action of the bird which is sure of its objective, the procedure of this shoot of a climbing bean is undoubtedly a crude one, involving a lot of blindly feeling out possibilities, which means a waste of energy.

Nevertheless, in all cases where there is a bean-pole at all, it masters the situation by its trials in all directions, by running around the whole clock-dial of possibilities. And a certain employment of that old blind method continues to play a powerful rôle among human beings too (as that example of the hunter already shows). A mass of unsuccessful attempts, which feel out the field

of possibilities more or less blindly, customarily precedes every new invention and discovery. And every artist knows how many a plan, many a sketch is thrown away before a good work of art emerges from this competition within the artist's own brain. The tremendous field of vision in our human mind, which concretely exists in all of our direct search for a specific purpose, weakens this phenomenon in countless cases. But it still does exist in our case as well.

No matter what you choose to think philosophically about nature's purposes below the higher animal intellect, that procedure by which all the water for yards around, or even farther, is filled with sperm-cells prepared to fecundate, just as the air was full of shot ready to hit in our example about the rabbit, is in no case absurd, judged by the final result which it intended to achieve. It can just as little be characterized as absurd as can the root of a plant which is constructed in a way that does the utmost justice to the purpose of sucking in the earth; you can quarrel as to how far a natural teleology already held sway in this root working toward a definite suitability for a purpose, but it is impossible for you to deny that certain purposes are most brilliantly achieved by it in a practical way.

Once the fact of some utility or other was given, nature put its whole gigantic force into play in everything that concerned production. If nature had been successful in forging beings from single cells up to cell colossuses of millions and billions of cells, what did it matter to nature to split off a few hundred or thousand or even hundreds of thousands and millions of cells from these colossuses for reproductive purposes?

This method indulged in its wildest orgies in all of love's cohorts that had acquired a sedentary, firmly attached or rooted mode of life. Although this method was undoubtedly invented in the water, it was tried out further on the air in emphatic fashion. Plants became the most incredible spendthrifts. A vast number of our best known plants continue to-day to be exclusively dependent upon the wind taking along their male sexual substance and transporting it to strange female organs. The idea is to load down the wings of this helper, the wind, just as heavily as possible. Put a twig of hazel catkins into water at home along with other trophies of early spring, and overnight the whole bunch and the whole glass

and the table cover too will become covered with golden dust, with the hazel pollen. Wherever you stroll among the green children of the sun in their love-time, this pollen greeting is wafted round about you, entrusted blindly on a chance to the rustling wave of air by millions and millions of little heads, little cones and little catkins. It pours up from the grass and the grain field like a delicate, intoxicating vapour. It descends in waves from the pine crowns of the forest like aphrodisiac smoke, every cone a flame of love, from which countless love-darts radiate. Literally, countless. Billions of pollen specks are used up to bridge the distance of five yards between two nettles. Where sociable plants cover many square miles of the earth's surface close together, the possible maximum almost becomes true and the whole column of air above is almost literally full of pollen dust. Zeus, who surprised his beautiful nymph in a fertilizing cloud, becomes reality. Golden clouds rise up with a puff of wind from the pine forest and drop down far and wide on thickets of foliage trees and on meadows. Rain takes a hand, and the tempest downpour gathers the golden pollen into golden streams, which the superstitious populace marvels at and dubs "brimstone rain." Æons ago that must have been a much more gigantic spectacle on earth, at a stage when the sexual life of plants was different in many respects from that of our dust-shedding pines. In the so-called carboniferous period, endless uniform primeval jungles of ferns, shave-grass and club-moss extended over whole continents. You know the spore dust (a sort of preparatory reproductive cell) of our club-moss; the so-called witch-meal or lycopodium powder that floats away as softly as a breath. Imagine whole continents luxuriantly overgrown with club-moss having stems as high as a house, and the witches' smoke steaming up from it to the sun. Perhaps it floated over the terrestrial globe like a delicate golden shimmer to an observer in cosmic space. And when the colossal cloud-bursts of a moist swampy age broke through this love-net, sulphury yellow torrents of mud tore their course and at the river's delta the blue of the ocean was coloured a yellowish tinge far and wide; streams of love's semen, an ocean kissed by Eros, love that belches its force into the highest strata of the air like a volcano, a terrestrial globe that lights up under its burden of love and radiates its colour, the colour of the plant's love-smoke, out into cosmic space. . . .

The worst "wastefulness" that was ever indulged in by animals

seems mere child's play compared to this phantastic overproduction. The higher plant that bears bright flowers has already restricted production somewhat by learning to employ insects as messengers of love, no longer demanding such mad payments for their service as the uncontrollable gusts of wind. In the case of the animal, however, the whole performance probably never took on hazel or pine-tree dimensions at all, even though there was no talk of actually saving sexual substance. The animal, wherever it was most capable of evolution, early and energetically tore itself loose from being rooted fast or stuck fast. The sexes were mostly able to swim to one another or crawl to one another, and in that way they could reduce the distance at a time when semen and eggs were still simply thrown into the water on the chance of their finding each other. Nevertheless, you get a faint conception of what the probable figures were, if you chance to take note of the number of female eggs in the intermediate animal zone. The human girl's seventy-two thousand are a feeble reflection of the tapeworm's and the oyster's millions, about which we spoke. Nobody has ever dared to calculate what flood of semen it takes to procreate an oyster.

The most interesting thing about all this is how far this method of wastefulness extends in animals, even up to your ancestral relations as a human being.

Call to mind the grotesque picture of the herrings' orgy of love. You are dealing with a fish. High above the worm and already in the ranks of the vertebrates. Stomach and anus, spinal cord and brain are already on hand just as nice and proper as could be; that hard board, the backbone, is already shoved in for the whole length of the body, supporting it, and the capsule about the brain has already become consolidated into a skull and on this skull the biting apparatus of the jaws has formed a snout. The fins hint at limbs and the swimming bladder already contains the prophetic possibility of lungs. This is sure; that if you go and hunt yourself up among your animal ancestors in their various stages, you as a fish were already incomparably closer to man than the original cell was to the fish. And yet, in the case of these fish you still see the whole old, wide-open method of procreation joyously in full swing, and you also see the most lavish squandering of sexual products being indulged in.

The herring in our illustration long ago ceased to be grown fast to anything. No vertebrate animal ever grew attached to anything

again. The fish may habitually roam freely where it will, in the farthest provinces of its element. It may associate more closely with its own kind only at the period when its sexual products are maturing; and you do in reality see the herring climbing up from all the depths of the sea for the sacred procreation festival. If you will only grasp its sense correctly, this is the great religious moment of their lives in a certain sense. For religion really represents the actions or feelings of every being when it absolutely rises above itself into something higher and more inclusive, into the ring of a greater form of existence, as it were, which encompasses its own little existence like a speck of dust along with all the others. When it is to rise up in this sense, the herring with its little fish's brain, that runs through its skull in the form of a thin strand with a few knots of a low grade, can hardly as yet consciously sink itself in the eternal divine nature of our Master Goethe, for instance, which embraces Faustian destinies as well as suns and human beings and herrings. The supreme super-act of its individuality is procreation; the moment in which its little existence enters into and is completely dissolved in the great ring of the species, into the eternal herring, as it were, which is preserved throughout the millions of the years by the reproduction of generations, into the Platonic idea of the herring, which is something tremendously higher and more inclusive than the individual herring with its swift little hour of life.

But now when they really get down to the big act, you see these herring still steering their bark of love entirely according to the hoary old crude method. The semen passes from the milter—the male herring—by a regular sort of pollution, and the spawner—the herring female—simply drops the eggs like a drop of menstrual blood on which a virginal ovum-cell independently swims out into the light of day. The males mostly wag their tails down below and in that way fill a deeper layer of sea water with the milt of their pollution, while the female lets her eggs drop down from above through this cloud of semen; and as they do so, the actual marriage of sperm-cell and egg-cell takes place by lucky chance; by lucky chance and thanks to a sufficient wastefulness on both sides. The mass turns the trick! The individual egg of a herring is only one millimetre in size and the individual spermatozoon naturally is very much smaller. But to make up for that, every female herring produces her thirty to forty thousand eggs. And if you fish a dainty morsel of milt out of your little keg of herrings, the same being

nothing else but the bridegroom's reservoir of semen filled to the bursting point, and compare it with the size of the whole animal, and then say to yourself that each single sperm-cell is microscopically small, you may at least suspect clearly what corresponds to that hecatomb of eggs.

We human beings are funny people at bottom. In the case of the herring, we have become quite comfortably accustomed to eating the semen mass as a very great delicacy, as a matter of course.

Oscar Peschel well said once that aversion to any kind of food rests only on agreement or on terror of the unknown. It sounds pretty gruesome to us when the Arab thanks Allah for giving him a dish of locusts; or when the pretty Samoan girls bite into a fat capricorn beetle's larva with their healthy teeth, till you hear it crack, and then the worm twists between their lips like a cigarette that has suddenly become animated; or when the South American Bakairi maiden, who is also very easy on the eyes, saves a few particularly well nourished little lice from her stiff black hair as a dainty morsel for her lover. And at the same time we civilized epicures revel in pickled pig's kidneys, although we know perfectly well that they are the urinary organs of not exactly the most appetizing of mammals; and the actual peak of the superfinest civilized gastronomic æsthetics consists, as it is impossible to deny, of snipe giblets, whose real savoury flavouring ingredients are the excrements and the finely chopped up tapeworms of the snipe's intestines. Things would not have gone right along this line if that mad animal production of semen had not turned up somewhere in the field of vision of our gastronomic joys. But what must these little silvery fish produce in the way of this particular material, when you stop to think that a big full-grown man, whose every finger is half as long as the whole fish, can eat himself full with nothing but fish semen—just on a few slices of these milters.

The cool Walpurgis bath has made you hungry and as we just happen to be talking about these toothsome matters, suppose you unpack the lunch basket. A caviare sandwich. We are right back again at the colossal egg production of fish, from a different angle.

If your caviare is genuine, in other words, if it does not consist of grains of sago soaked in herring broth or of perch or tunny eggs, it comes from the fish known as the sturgeon, and each of the little black pearls is a sturgeon's egg. The sturgeon is an extremely curious old-fashioned fish. Its ancestors were certainly closer to

your human genealogical tree than the herring is. It was in the vicinity of the sturgeons that that group of mud-fish separated from the fish branch, transforming their swimming bladder to a lung and thereby definitely and finally conquering the way onto land and the road to man.

That again does not mean much to man, the finished product of evolution, to-day. At this particular point of his genealogical tree he falls upon all his old forbears as a gourmand. The famous lowest fish of them all, the amphioxus, has, to be sure, been done culinary justice to only once to the best of my knowledge, and that was at a banquet at Jena in honour of Ernst Haeckel, the courageous genealogical tree explorer, on the occasion of his sixtieth birthday, when whimsical admirers of his imported a little keg of amphioxi from Naples and made sandwiches with it; their taste confirmed their close relationship to the next higher fish group, the lampreys, as Haeckel told me. These lampreys have long been held in high esteem. Shark's fins are a delicacy in southern regions. The mud-fish ceratodus in Australia has red meat like a salmon, and the explorer Semon's black servants gobbled it up clandestinely with more enthusiasm than was agreeable to that splendid zoologist. In the case of the sturgeon, however, man's æsthetic prodigality has reached such a climax that even the sexual wastefulness of fish nature on its grandest scale threatens to flag in the face of it.

Let us assume that each one of these little black pearls on your slice of toast comes from the particular variety of sturgeon which is the most prolific for caviare export purposes; the so-called *isinglass-fish* or great sturgeon that dwells in the Black Sea and its tributary rivers. Out of each one of these pearls, if it had been fertilized, there could have emerged a truly demonic fish monster, with armour plates and buckles like a decorated Roman legionary, with a toothless bugbear of a snout in front like a giant suckling and ending behind in an uneven tail-fin like a ploughshare. If nothing intervened to prevent it, this grotesque fellow could grow up to be a veritable swimming log eight yards long, or about five times the girth of your valued body.

Now figure that there are only five hundred sturgeon eggs on your caviare sandwich. That makes five hundred sturgeons, each eight yards long, or more than two miles of fish meat. And you are eating these two miles on a slice of buttered toast. How many similar caviare sandwiches are eaten annually other than by your-

self, you can learn from a general estimate which puts the annual consumption of caviare at approximately ten billion sturgeon eggs. Since the whole female fish is customarily caught, killed and cut up in order to get the eggs, ten billion sturgeon females would have to get into the fishermen's nets annually, if each sturgeon produced only one egg a year. According to that calculation, the whole Black Sea would be filled full of sturgeons like a dried out little pool in the spring with tadpoles, or worse. But there is no talk about that. For here the enormous figure of each individual female sturgeon's egg production comes in.

Some of these great sturgeon females have been caught, weighing three thousand pounds and carrying nine hundred pounds of eggs in their bodies. That makes at least three million eggs in a single fish at one time; enough for six thousand caviare sandwiches. Naturally there are not always that many eggs. On the whole, however, you are looking into an egg factory that calculates in millions; millions per female. The herring's thirty thousand are a poor stop-gap compared to that. The trout has a mere trifle of a thousand; the stickleback not even a hundred. The pike manages to make it a hundred thousand, while the carp seriously approaches the first million mark. The codfish alone beats the sturgeon, allegedly running up to nine million. But the concept of one million is sufficient. A fish which produces a million regulation eggs inside itself almost deserves to have its eggs spread on buttered toast far from the Black Sea right on the sand of the Mark of Brandenburg, one feels like saying. As a matter of fact, the ravages of civilization already threaten the continued existence of this animal. Meanwhile the matter itself supplies us something this time that is not only food for the stomach but food for thought.

With the existence of a million of these black egg pearls in an animal which is relatively still so close to you as the fish, you very obviously touch upon the secret of your seventy-two thousand human eggs. And in the gigantic cloud of semen required to fertilize the eggs by stirring them around in herring fashion in water that was freely mixed with male pollution lies the mystery of the billions of the human male's sperm-cells. You must still see in man the fish that he once was—the ancient fish—and you will understand.

Changes have taken place in many respects in the course of evolution from the fish upward. In the case of the frog—an

amphibian, having four legs and breathing air with lungs—you still have a mighty mass of eggs that are really laid, and the male still continues to pour out its semen over the eggs. But then considerable changes take place. External free fertilization gradually becomes impossible. In the end, the entire development of the fertilized egg is drawn back into the mother's body. To procreate children by male pollutions becomes absolutely unthinkable. And the long intimate connection of mother and child, the size and maturity of the child when it is born, the cessation of all egg laying on the part of the female limit the number of eggs that can attain fertilization to that minimum which we finally note in the case of the human being. Nevertheless even then it is clear that nature continues to keep the shadow of the old, of the oldest. The plant for the wholesale production of a sturgeon or a carp is preserved in the human ovaries. And in the male semen nature preserves having a veritable flood at its disposal, as if the spermatozoa still had to make a trip in the open water.

Only in this way does the real historical meaning of certain automatic actions of your body become clear. If deep within woman's body an ovum starts independently on a journey to the womb at every menstruation, that clearly still constitutes a concealed act of laying eggs, of detaching the unfertilized ovum and letting it drop down into the open on the lucky chance of its finding semen. The human egg can no longer get out into the light of day, or it will die. But the oviduct and the womb (I used this figure of speech once before, but only here does it gain its real significance) have actually become the water by proxy, the water into which the herring still throws its eggs. If no fertilization takes place, the egg is expedited to the outside, and there is room for a new shipment. The possibility of impregnation, in other words, the presence of male semen in this secret chamber at just the right time, belongs in a different department which was acquired later, and is connected with the "discovery of copulation" (presently to be discussed). But beforehand, the automatic act does its duty in the old fish sense, just as far as it knows how: the fish in man still faithfully puts those seventy thousand eggs on the ovary and releases as many of them as will go in periodic succession toward the womb; let a higher authority take care of everything further.

And the same thing holds good for the human male. Here too you have a primitive stadium, a fishiness, as it were, forming the

foundation; the semen splitting off in enormous masses, as if it were to flow freely like lemon juice over wide surfaces of caviare and not merely to make a conquest of a single ovum-cell that comes floating toward it like Cleopatra to Antony with open arms on the narrow Nile deep within the woman. Here, too, genuine copulation is under the management of a higher authority in the organism. It is something which was acquired later, is managed by a different department. But when this department does not act, when no directions come from above for a long while, the semen organ simply ejects its cells even without the proximity of a female, entirely according to the herring method. The only difference being that here it means certain death to the cells. But that is all one. If the new younger law will not comply with nature, the older law simply comes into force once more. The female is totally incidental, entirely a distance value, to these sperm-cells at the time when they pour out. They simply strive to get out into the open, into the "water" outside. If "the open" happens to be the female gateway, fertilization will take place in the most favourable case. But if not, then it does not. Even if the most senseless instructions come from the higher department, as in onanistic and pederastic acts, the wave of life surges up immutable of purpose just the same. Perhaps nothing is more wonderful than to say to oneself that even these abnormalities would not be possible if our body were not a huge raft of so and so many layers of zoological evolution. The onanist who scatters his sperm-cells at random once more climbs down so and so many stories in his own human building and knocks at a level which normally was covered over long ago with great granite blocks of evolution between fish and man.

Nevertheless, you may well ask yourself the question why natural evolution continued to cling tenaciously to mass production even after the original purpose of the sexual substances finding one another in the open water had long ago become antiquated. In the case of the human sperm-cells one might say that they still have some distance to travel alone in the moisture of the female sexual organ, and that in so doing, many may miss the road by accident or chance and that therefore a reserve continues to be a good thing; for copulation itself still remains somewhat imperfect. It is hard to imagine two hundred million men having to stand in reserve in every sexual act, as is actually the case, on that account though. Furthermore,

this explanation does not apply to the stock of more than seventy thousand female ova which do not come into the question at all as reserves in this sense, since they never become detached from the ovary.

Might this involve merely the tenacity of an old law, a certain obstinacy in nature?

I chanced to express to you before that I see a sort of reserve law of evolution in this dragging along of seemingly utterly antiquated ancestral characteristics in the form of remnants, rudiments and echoes in later and higher living beings. The old is not given up entirely but ever continues to be dragged along as an appendage or at least as a disposition, in order to be used once more in connection with a necessary new adaptation if occasion arises. To my mind, all the facts of the fundamental biogenetic law tend in this direction. The land amphibian still keeps the respiration of a fish in its youth as a tadpole, and in this respect we even have direct cases (the Mexican salamander axolotl, for example) where an animal like that, which by chance is confined to water for the duration of its life, remains true to the ancestral method of water breathing and even reproduces young which do the same thing. The fishlike overproduction of human eggs and human sperm-cells would signify a reserve, a sort of watchful waiting on nature's part for the eventuality that free external fertilization of eggs discharged in menstruation by semen poured forth in pollution might again appear more useful for some reason in human evolution. This is something which we could just as little picture to ourselves as we could a return from the separation of the sexes in the human being to hermaphroditism. But the simple logic of the law of reserves would not need to bother its head as to whether or not we can think anything on the subject; it would go its way in our bodies, just as in the body of every other higher vertebrate animal above the fish or the frog.

However, in the case of such important things as semen and ovum-cells you must not reject the supposition entirely that in addition to this mass purpose of simply finding one another in the open water, mass production, once it was launched, served still other purposes from the beginning. And these purposes might still be so much in force to-day, that they alone might now force through this mass production in the case of man.

Whenever such mass production appears in nature, certain selec-

tions in the Darwinian sense invariably become probable; selections of the most vigorous or the fittest among competing individual beings.

When a certain number of fertilizations have resulted from that mad whirling pell-mell of fish or mussel egg-cells and sperm-cells and a little later an imposing army of young mussels or fish appears, we see this selection of the vigorous making itself felt immediately and energetically in that host of offspring. Only a certain part of this young generation gets a station further, to the climax of life, to its own sexual maturity with semen and egg production. A tremendous percentage die young, just as myriads perished as eggs or sperm-cells. In many individual cases, pure chance may govern surviving or perishing. But on the whole, the struggle for existence will assuredly proceed to make a real selection of the strong in Darwin's sense. Only an élite of the relatively strongest, healthiest elements and those that have the greatest power of resistance to certain influences will be left over in the end. This élite alone will become mature and reproduce. This is Darwin's old idea, that ever continues to be so logically illuminating: that by this selection of the strong, the animal species continually become consolidated, are maintained in full vigour and are even improved. Only the élite of the strongest, of the fittest reproduces anew.

But you have the tremendous wastefulness in semen and eggs interposed between this young élite and the next one. This wastefulness already results in a certain élite of actual offspring. In the sense of our earlier discussion, this would be an élite of lucky finders which was bound to emerge as an average out of the potpourri of eggs and sperm-cells, according to the simple mathematical law of probabilities. But might not a selection of the vigorous already have taken place here?

If we bear in mind that semen and eggs were simply poured out into the open cold agitated water, a brief transition is thinkable preceding the first possibility of a chance meeting: in first line the decisive factor would be whether one spermatozoon or one egg was more vigorous and had greater powers of resistance than another. One that succumbed at once to the cold of the water was eliminated from the competition of seeking before it had really started. The consequences of such differences could not be immaterial. An egg-cell with powers of resistance that enabled it to endure for a long time would have a greater chance of being found. A strongly

mobile spermatozoon had more chance of finding an egg than a less active one. The individual strength of certain sensations and instincts in the several sperm-cells and eggs was bound to make itself felt. If the sperm-cells are guided by sensations of taste resulting from chemical effects produced by the egg-cells, a stronger gift in this direction would possibly prove decisive, when one among a number of spermatozoa which were equally near first "tasted" the proximity of the egg-cell in the sense of a "chemotropism" (reaction to the chemical action of the egg-cell in the surrounding water) and steered its swimming course accordingly.

A pretty experiment chanced to prove that certain instincts play a rôle in the egg-cells, and that their plus or minus quantity can frustrate the act of fertilization (even after several spermatozoa have succeeded in finding the egg). During Oscar Hertwig's memorable experiments with sea-urchins in 1875, by which the actual external procedure of the act of fertilization between sperm-cell and egg-cell was ascertained for the first time, the quaint experiment was successfully performed of making an egg-cell lying in the water individually "drunk." By employing the same means that would have similar effects on us, chemicals such as chloral hydrate, morphine, etc., violent mechanical shaking producing dizziness and other "narcotic means," one can put a living egg into a genuine "drunken stupor" in which it forgets its necessary instincts just exactly as does a bee which has nipped some intoxicating substance and as a result becomes so utterly perplexed for the time being that it no longer looks for its own home hive, nor knows home when it sees it, but contrary to all normal bee custom crawls into the first strange hive it comes to. It is the hard and fast egg practise to admit only a single spermatozoon for fertilization. The "intoxicated" egg, however, lets in several of them and thereby messes up the whole further formative process even to the point of utter confusion which cannot be unravelled again, and this at the climax moment of victory. Even without an artificial jag, an individual plus or minus quantity in the way of such instinct might not be without importance.

Furthermore, when normally only a single spermatozoon crawls in, you might have a case where several of them reached the same egg-cell simultaneously (certainly not a rare case in such mass production) and where a competition of strength between the rivals would take place, in which the strongest would triumph. By such

selection, the powers of resistance and special talents for fertilization of the sexual cells would necessarily become increasingly strengthened, which in itself would spell a gain for the species. But if you assume that such powers of resistance and the sensory and instinctive and physical strength to conquer are certificates generally of the healthiest, most vigorous individuals that are most capable of living later on, it must dawn upon you that this selection already works in advance of and plays into the hands of that later selection among the young and the grown-ups, by eliminating a mass of inferior misfits before and during fertilization, and favouring a first élite of vigour, which merely has to come up for final selection later in the struggle for existence between the actual offspring.

You could perfectly well apply this whole train of thought to man. In the first place, as regards the spermatozoa. We human beings after birth are under the spell of this selection of the vigorous just exactly as those mussels or fish are. Among us, too, a large number of children perish before the years of sexual maturity begin, and only an élite is left over, which in addition to many chance cases yet surely is in large part a relative élite of the strong. If our means of civilization begin to take a hand here to-day and bring about many changes, pulling many weak children through, etc., all that belongs in a special field of its own, about which we shall have occasion to speak later on. But in any event, wherever these interventions on the part of intelligence do not take place, man must still be everywhere under the spell of direct natural selections, if they have any validity at all; and the mass production of our semen would be a place for such competition. The fact can be observed under the microscope that our sperm-cells show differences in size in one and the same ejaculation. You could imagine a mighty competition of strength taking place among those two hundred millions in every male wave of love within the female interior even before reaching the ovum-cell; a competition which would be all the more effective since the main road is pretty clearly fixed, and chance therefore plays a smaller part. An élite of the most powerful in the matter of locomotion and sensation might very soon separate from that colossal swarm and get ahead of all the others in the search for the ovum-cell. If there is an ovum-cell on hand and if it is reached, you could very well picture to yourself a very last selection among this élite on the basis of energy, the result of which would be the conquest of love's throne by the strongest hero. In

the extreme case (which reality with its chances will probably never offer) you might virtually say: the ordeal of greatest health and strength will let only the very best hero of all those two hundred millions attain the ultimate goal. But selection which was only relative would be very useful. In case no ovum-cell happens to be on the spot, the spermatozoa's ability to wait and their longevity would result in further selections, and possibly the representatives of several waves of love gathered together here may engage in competition. With a little imagination you can think up all manner of other things in connection with the strange adventure of armies of millions locked up in this cave. Every selection of those that were already "strongest" before this first situation would necessarily have to be not only a gain for breeding ever better adaptations in spermatozoa but also a permanent factor for preserving and increasing the vigour of the whole species.

Naturally, the spermatozoa are not all-powerful. If the whole crowd in a wave of love is inferior for reasons connected with the male person sending them out, if they are poisoned as a whole by alcohol or syphilis, the formation of an élite out of a bad lot will not help very much. But at any rate, in case there is only a certain percentage of admixtures of inferior elements, one can hope that a cleaning out process will take place in favour of the best of the lot, which the union of a sperm-cell selected as relatively vigorous with an ovum-cell from a totally different human household would finally crown.

If mass production merely possessed a content of natural selection in this sense from the beginning and still has it to-day, it would be perfectly understandable that mass production has been maintained right up to man, although the chances of the sexual cells finding one another have become so much more certain. You are more inclined to ask why a girl's seventy-two thousand ova are not all made to mature every time and why all of them are not similarly thrown into competition. It would be thinkable on this point that the small number of ova which wander from the ovary into the womb in the course of years were already the result of a selection taking place on the ovary itself, determining which ovum was completely ripe and was to become detached. All of them which became detached might represent an élite in the above sense. It has frequently been observed on ovaries of animals how some individual cells rapidly surpass the surrounding ones in growth. It has been

distinctly observed in arthropods how the eggs that lag behind in growth not only gradually perished but how they and their nutritive material were virtually taken up into the food yolk of the victress in the competition, and were therefore eaten up by her, so to speak. In this sense, selection among the egg-cells would consist of a virtual struggle for existence of these cells with one another, a struggle for food with certain traits of cannibalism, on the scene of their original formation.

If you stop to think what a hard battle of life nearly every child is born into among us, it strikes you with an almost gruesome force to picture a series of tremendous battles already preceding the embryonic formation of this child and taking place even before fertilization; battles in which billions of sperm-cells, thousands of ovum-cells had to fall in order that just two sexual cells might in the end come together for the act of mixed love. All of this belongs in nature's great chapter of selection generally, which we have to take into account in the fulfilment of nature's purposes at particular stages. We must be satisfied that this much at least becomes clear in the course of higher evolution; that as introspection and conscious intelligence in the individual increases in nature, where the pangs of those that sink down beside the few victors must become ever greater—the pain caused by clearly seeing their own fate—there too do these very brutal mass eliminations rapidly recede in favour of far less brutal roads of progress. This is the case with human beings in our civilization. If you ask me why so many "blind alleys" must first be gone through in nature, why these enormous lotteries are operated so that a few may draw prizes to billions of blanks, why the actual production of millions of sperm-cells for the ruthless selection of an élite takes place, instead of having all this take place as an ideal possibility, as it were, and only then have the prize brought into play as the first reality, I can solve that for you just as little as I can the question why the climbing plant has not got an eagle eye, while it is about it, so that it could see the pole, or why evolution first takes place with low imperfect attempts, and only then proceeds with higher ones that keep getting better and better. That, however, is not our problem here. We asked whether the human being's wastefulness of semen were by any chance an utter absurdity, without any sense at all. There is a difference after all, whether a way is intricate but does lead to a

goal, or whether it just senselessly fritters away a vast expenditure in order to end in nothing. What I do assert is that this way of ours has even various possibilities of sense, all of which lead far away from the *"Credo quia absurdum."*

For the rest, I led you through more or less vague suppositions. It is thinkable that quite apart from the problem of finding and the problem of vigour, mass production further has mysterious connections with the simple play of throwing the greatest possible number of variations in the lottery of evolution, with having as many fine variations of character play along in heredity's gift of chromosomes, variations that do not directly come under the general competition of health and strength, but which afterwards become of the greatest importance in the great selection of persons after birth. From this point of view, the fixed number of sperm-cells and eggs in every species might possibly correspond to the possibilities of transformations in some sort of a kaleidoscope. In its semen or egg production, each individual would first turn this whole kaleidoscope around, even though on the whole with its own individual characteristic. It would remain a matter of chance just what number would actually come out of this turning kaleidoscope for procreation, by coinciding either with a chance prize for finding or with a lucky draw in the way of victorious strength. But it would not be immaterial that, in so doing, the entire kaleidoscope had invariably been turned around.

Everything which leads you into these basic elements of actual character variations is, however, still purely hypothetical from beginning to end to-day, and seduces you into ultimate fog banks of the evolutionary idea, which our eye is in no way able as yet to resolve into real stars. It is enough if in the end you see this little Milky Way of sperm-cells open into and vanish in the big Milky Way of the ultimate problems of life and progress at a place where for fifty years the human spirit has been struggling, not with the absurd, but with the highest logic of nature.

The first mighty granite block that was historically placed on this foundation of mixed love in the pyramid of your prehuman evolution was copulation: the physical copulation of the two big persons, which bodily closed the love-stock so tightly for the benefit of the act of mixing between their sexual cells that for a few moments

the appearance of a real act of mixing on the part of their whole bodies resulted.

Viewed as progress, this matter looks extremely simple at first sight.

Clearly it had already been particularly drummed into the herring by nature, that with all due openness and haphazard scattering of semen and eggs reproduction would not be a success with the bridegroom discharging his milt on the coast of North America while the bride releases her roe on the coast of Norway. That would be like the fairy-tale about the two royal children who could not come together because the water was much too deep. The noble race of herring would die out. Here, too, the big persons come together in love to within a certain imperative minimum distance and only then do they produce their sexual substance.

In the course of the progressing logic of things, a tendency more and more to diminish this distance was bound to make itself felt. The nearer, the surer. The more unnecessary the whole prodigality with the sky the limit. Till in the end body touched body, source touched source of the stream of life.

And there is not the slightest doubt that the original evolutionary history of what you call copulation lay in this simple "logic."

Its materialization and continuously more ingenious elaboration and improvement, however, encountered the strangest snarl of special circumstances as things went on.

And the consequence was that certain things resulted for you, the precocious ultimate child, man, which you have wanted to brand doubly and trebly as "absurdities," although these things are again merely evolutionary moves in the game, without which you would not be existing at all, since it was not a philosopher by means of a facile reasoning *a postiori*, but the "Good Fairy Utility" very *a priori* and amid the most laborious difficulties of concrete reality that groped your way out of the animal.

A soft little voice sings anew out of all that is "absurd" about your act of copulation. The small voice of a child. The little voice of the homunculus that is coming into being. You still are it—the homunculus of nature. Ahead of you, distant as the constellation of Hercules, stands the true *homo*, man. The singing that proceeds from you still sounds somewhat glassy. But this is the mould. And one day you will resound like bronze; the bell will be finished, which then perhaps will ring through planetary space.

§ 6

Whate'er once was, there burns and brightens free
In splendour—for 'twould fain eternal be.

Faust.

Human female and human male are in a fish milter and a fish spawner then; somewhere in hoary days of antiquity, far beyond the ichthyosaurians, in some long lost sea, on whose petrified banks of ooze bowling alleys are running full blast or a meeting of workers is discussing the social question or a procession is passing to-day.

This milter and this spawner are being more and more strongly urged by evolution to emit their love-products when they are as close together as possible, so that the little cells may find each other.

How will they go about it?

It is extremely obvious that they will hit upon a very simple practise, but one which signifies a colossal step forward.

They will place themselves body to body.

Egg roe as well as semen milt pour out of particular openings in the body. Therefore they will place themselves with opening against opening as far as possible. So that stream may at once flow to stream. The pollution of male semen to the female eggs that wander out into the open, at the moment when both make their appearance.

I told you before what this physical approach meant for animals that were wild robbers. How the conflict between love and eating became acute. Recall the spider's strange story. But let us now keep more to the mechanical problem, which was seriously propounded for the first time—in the history of mankind as well. I am almost tempted to say, the purely gymnastic feat of placing body to body, sexual outpouring to sexual outpouring as closely as possible.

All possible sorts of merry, tail-wagging fish still demonstrate all the gradations up to the climax in the prettiest fashion for you to-day.

I remember a delightful day spent wandering in the Swiss Alps,

in the Canton of Glarus. A wild pass on the heights, after long hot hours of walking. Beyond the fir-tree line. Only a carpet of mountain-roses running around in a wreath, and then beyond, all wild brutal, yellowish brown rock in hard silhouettes against the milky white sky. Close to six thousand feet up. Way up here, but still sunk in the last patch of mountain-roses and gentians like two little blue eyes, a couple of little lakes. Just a little below, the brook that poured down fell on the next highest terrace of the valley in a glorious waterfall, blowing away in white foam, and then hour after hour it ran slowly murmuring through the great dark fir forest and finally into a fairyland emerald, abysmally deep lake, in which dwelled giant pike and demonic black sheat-fish and above which, on the other side, a rugged mountain wall towered so perpendicularly that hardly a tree or a bit of Alpine goat meadow could stick in a crevice. But up here in these little blue-eyed pools beyond the tree line I came to know a fish in all its glory: the trout.

Some one somewhere in the bottom of the cantons down there, from which now and again a leaden white cloud came steaming up like a mushroom, had leased the fishing-rights here on Olympus and had placed a keeper in charge. He lived in a highland hut, around which the merry tribe of marmots whistled and which chamois now and again made eyes at, real chamois, not the ones fed out of Tartarin. The old fellow was a character: half man yet and already half marmot. He snorted about women, like Busch's old Krökel; he had had and had married I don't know how many of them in his time down in the valley, and I believe one of them was still living down there. For the rest, his heart felt for the sins and desires of the world. There was no restaurant of any kind up here and money could not buy the trout. But whoever knew how to make it emphatic enough that he had climbed for five hours and that he had every prospect of a wretched death from starvation, could arouse the old commandment of Christian brotherly love in the old marmot father; the commandment which teaches that the naked are to be clothed and the hungry comforted for a higher reward than gold. He had no bread and no cheese, and his gentian schnapps hit the hungry stomach like coals of fire. And so he begged me at last to put up with a trout, as Robinson Crusoe serves it to the shipwrecked man. He took the floundering creature out of the fish-box and cooked it in a prehistorically primitive coffee pot. A newspaper, a copy of the *Berner Bund,* containing an article by

Widmann, served as a plate, and a faithful old corkscrew as fork. And while I ate, the venerable old fellow told how he placed the finger of direct fate above merely traditional doctrine every time. Thus, he never shot chamois, because that was absolutely forbidden by law. But as an innocent pastime which no man might forbid, he would set up a peaceful seltzer-water bottle on distant rocky crags which his undimmed eagle eye could just barely reach yet and practise the strength of his age in shooting at that target. But if it should chance that at the very moment of such a William Tell shot a chamois happened to step between the shot and the bottle, he regarded that as the higher finger of fate, to which the wise man had to bow. He thought that when I came up here again we would undoubtedly feast on a good roast of chamois together. For strange as it may seem, in these primeval solitudes far from the world, fate had a peculiar way of holding violent sway for trying out philosophers.

In this romantic setting I first came to know the trout as the epicure dreams it, but mostly does not know it in his narrow earthen valley below. Meat sweet as an almond, with the bouquet of a lobster's claw, and golden brick-red in colour. It was the mountain trout in its most daring development; the fish that had climbed up from the big invisible lake deep down there, from which the mushrooms of clouds steamed up to me through the chink of the valley, and had lost its way in the heights that are the haunts of eagles and vultures, reaching pools in whose blue the mountain-rose generates red reflections and out of which chamois drink.

At this spot made for dreaming there rose before my mind's eye the whole wonder race of these fish of the trout and salmon sort which propound countless riddles to the zoologist who would like to roll the terrestrial globe around like a book to try and solve them. . . .

These trout still have a simple love-story, closely related to that old tale of the stickleback, even though not quite so epigrammatic. But in their vicinity there already is a stirring toward that turning-point which I mean.

No wild carnival of love is needed in the little silvery brook or the blue mountain lake where the trout dwell, as it was in the herring bay. When the roe begins to swell up in her dainty little body, each little trout bride separates from the others. In most cases a number of male suitors follow her. But she bestows her

favour on only one, no doubt the oldest and most serious suitor, whose genuine intentions are indicated by a certain changed colour of the body, much like the lover with the amorously reddest cheeks, to put it in human terms. She knows that too many cooks, and particularly young ones, spoil the broth, since here, as so frequently among fish, the bad custom prevails of males that are still immature eating the eggs with great gusto, instead of sprinkling them with semen. Eating versus love; the old song!

But if the trout maiden is sure that there is a conscientious suitor in her train and one who is at the same time strong enough to chase the crowd of idlers away when the critical point is reached, she immediately goes to work to accomplish her purpose. With her cute little spotted tail she fans a little hollow in the soft white sand of the bottom. She lets her eggs drop in there and as soon as that has happened she moves away. Immediately the bridegroom takes her place and throws his semen pollution on the eggs. Then both of them waggle their tails around the spot until the little cargo of love is loosely covered up with sand, and the job is finished for this time. No further care of the young on the part of the parents takes place; the little ones get up out of the sand and come up in the world on their own hook when their time comes. The water outside is still the field of mixed love. But it is no longer boundless.

In the very remotest sense, that little pit in the sandy bottom, which the female makes, is already a sort of external womb. Just as the oviduct discharges the female's ova into the genuine womb in the human body, so does the female trout discharge her roe into the external pit. And just as the human male pours out his semen in the direction of this womb, so does the trout male pour his into that pit. The pit becomes a womb even in the fact that in it the young develop well enclosed and protected, as does the human infant there. A single step further; and the hollow in the sand of the pool is no longer made externally, but is contrived as an organ of the body. It becomes a pit in the female's body. The eggs descend internally from the ovary to this pit. And the child continues to mature in it. You have monthly egg wanderings, genuine copulation, fruit ripening in the womb. That would mean: man out of the fish. But how many stations still lay in between. What struggles of the animal that would become man. From the pit in the sandy bottom of the pool to the pit in woman's interior: that was the road. But how?

Stretch the dear little trout to a length of one yard. Let it weigh up to thirty-five pounds. And you have the salmon. Our poets know little about zoology. Otherwise it would be hard to understand why one of them has not written the epic of the salmon long ago. An Odyssey from fish life. And an Odyssey of love to boot, whose guide is Aphrodite, goddess of naked love, and not the austerely armoured Pallas Athene.

There is an introductory song to this epic, a fairy-tale of fate from olden days, which furnishes the secret magic key to all enchantments.

Once upon a time some trout lived in a beautiful cool sea. They had food in superfluity and ate until they became giants—salmon. But when their love-time came, they felt the same way as the herring. They sought still, shallow places along the bank where the lovers could play tag and catch one another, and where the female could hollow out its pit in the sand in trout fashion. Here the place was a good one for this game of love as well as for the young to flourish, totally different from the wild sea out there. Once they had reached the edge of land, the questing salmon were afforded much more protected hiding places than just land-sheltered, shallow bays. Merry, crystal-clear little waters ran down from the land; little river arteries that came meandering through green meadows. They consisted of fresh water, to be sure; and the salmons' toothsome table that was so bountifully set with lobster, herring and so on in their ocean came to an end here. But what's the odds to starve a bit during love-time which otherwise was so lively and jolly for them?

So they went to their wedding far up into the arteries of water, dug their love-pits there and rejoiced in their undisturbed happiness. When they went back to the briny element, they quickly made up at the feed trough for what they had done without up there, and fattened up for the next love and courtship excursion. The young crawled out in fresh water, lived there as best they could on small insects, and drifting down with the little stream they slowly came into the ocean, to the old folks and their superior dinner table.

This continued for a long while as if it could never be otherwise. Certain spots in the rivers that were particularly well protected and offered all possible advantages kept on being preferred for thousands of years, and in the end love's new generation each time did not know anything else at all except that one loved and dug one's pit

exclusively at such and such a definite spot. Every tribe had its own particular tradition about that, inviolably fixed in the little salmon brains from generation to generation, like some law of conscience and moral code in a human tribe.

But this faithful fish folk was not spared what human beings so frequently have to experience. We set up eternal moral tablets and eternally changing nature one fine day smilingly cuts the ground from under them; the tree in whose branches God's commandment is supposed to rustle decays and topples over one fine year; the star, which our tribe has chosen as a token, fails to show up one fine evening because somewhere on the Milky Way there has been a cosmic crash; and after millenniums, a little drop of rain washes away the last little grain of quartz from the hill that you were supposed to worship. The salmon experienced that the shore became more and more choked with sand, that the sea steadily receded and that the course of their beloved river kept stretching and stretching between the ocean, where delicious lobster fare beckoned to the high livers, and the little protected spot far up among the meadows, where one went hungry but loved instead. What was to be done about it? One simply swam this additional stretch of river that was interpolated, starved somewhat longer, and loved somewhat more strenuously. But in the end the old moral code conquered the geological hindrance . . . just as many a human faith has managed to put up with a new tree deity and another divine hill a mile removed from the old sacred spot.

But a new hindrance arose. In the very region where lay the salmon's old shrines of Aphrodite, far and ever farther inland, the ground now began to rise. The flat land stretched up into hills, the gentle little hills into wild mountain ranges hung with icicles. The rivers of the meadowy plain became mountain brooks, that gradually rushed down to the valley in torrential thrusts, even in waterfalls. But a tenacious salmon steeped in tradition and with its love for established custom managed to surmount this further obstacle of geology. It got the habit of indulging in daring uphill swimming tours. And where the cataracts that came roaring toward it were not too big, well fed as it came up from the sea and full of nerve force as it was in its still unweakened love-longing, it simply turned itself into an athlete. It sprang upward, leaped up the rapids from stage to stage and triumphed. For the old love-spot now lay all the more

protected up there in the mountains in return, and richly rewarded all the troubles of climbing swimming.

One must not expect too much of Father Homer, even if he comes in the guise of a zoologist. It is not yet possible to-day to place the salmon tale in a definite geological epoch with an exact name; and numerous other questions remain to be answered about it. Occasionally the attempt has also been made to tell the story totally differently. But it still strikes me as the most plausible version, that something of the sort happened some time or other; otherwise the mystery of salmon love to-day remains utterly incomprehensible to me.

Year in and year out, the salmon that is ripe for love leads a downright monstrous double life geographically. To-day you find him a lazy fellow, gorging on lobsters and herring beyond the mouth of the Rhine in the salt water of the North Sea. And somewhat later you meet the selfsame specimen high up in the Gotthard group of the snowy Alps, leaping up the wild foaming torrent from rock to rock like a veritable acrobat, four thousand feet above the mirror of the North Sea. That first salmon happens to be the "eating salmon" and this other one is the same individual in his rôle of "loving salmon." You have a new variation to your theme of "eating and loving," with the most beautiful division of labour, after the model: he who loves, gets sated on love alone. But the love-salmon in this case is at the same time the acrobat salmon, the salmon gymnast. Let us keep to the Rhine salmon as an example.

The high North Sea billows out there beyond the mouth of the Rhine. There swim the salmon, male and female. Each one lives for itself, and eats, eats incessantly, till its little corporation is so fattened that in the cell state of its body there now develops that profound overproduction, which makes itself known by the separation of egg-cells and sperm-cells, roe and milt. All of a sudden a new occupation grips Mr. and Mrs. Salmon. They gather in bands numbering up to fifty. Eating becomes an incidental matter for them. In fact, they gradually do away with it entirely. Stoppages in the milt have beforehand initiated a fatty degeneration of the muscles on the sides of the rump. All this substance now pours out in the form of fluid nutritive materials and is consumed by the salmon's own household, partly to maintain the individual as a whole, partly and chiefly to build up the colossal masses of semen and eggs. A female salmon that is completely ripe for love has in the end eaten at least one third of the entire mass of its own muscles

into its thirty thousand eggs in that way. You recall the story about the young worms that ate their own mother from the inside out and up. It is not quite that bad here. But it is our old theme, ever anew: loving and eating.

The salmon appear at the mouth of the river with the flood tide. A drinking problem first engages them. In a long course of training they accustom themselves to fresh water, whose lesser weight in comparison with the briny flood for the rest only serves to meet their muscular weight which is becoming rapidly reduced. One day they seem to have got the hang of the matter. And now begins a mysterious, solemn entry in state (or at least began in times that were less disturbed and richer in salmon, which the fishermen still sing and yarn about). Procession of the knights of the Holy Grail. There is a comical gravity about all these fish; the stiff consecration of a brotherhood dating back to antediluvian days, whose instinctive moral code looks down with tremendous scorn upon the few thousand years of man's moral teachings. An old, fat female pilgrim swims on ahead and the rest tag on behind in two lines that form a wedge, as the wild geese fly. Only later do the knights, the milters, come with the same solemn ceremonial.

They go up the Rhine at a continuously even pace. Along the clay banks of Holland, past holy Cologne with its hundreds of ding-dong bells and bones of saints, in a bow about Nonnenwerth, through the yellowish green striped reflection of the vineyards, closely crowded together around the Mouse-tower. Losses all along the line. Here a net is burst in a wild charge. But there one holds. Grim *Laestrigones* fish from above for the comrades of the patient sufferer Odysseus. There is not merely holiness up there. The salmon is hungering in fresh water for love's sake. But bad man is hungering for delicious salmon meat, which in the case of these pilgrims swimming upstream happens to be of the very finest, fattened in the sea but no longer too fat, free from sinews and showing the regal red, the red of the cut edges of old books, when the giant body lies carved up. A precious book, good to read in a still, cloistered nook by golden Rhine wine in green goblets. The choicest of the choice are certain fat, eccentric characters which perhaps had already skipped an entire spawning-time at sea, but which in any event now indulge in a certain comfortable take it easy spirit in the matter of love and just loaf along, still playing around in almost fully fattened condition for an endless length of time as

"winter salmon" before they too can make up their minds to get down to real production for love and the necessary self-consumption connected therewith. Whoever as a human epicure has once come upon a real fish epicure such as this . . . has for the rest of his life one special reason the more to love his beautiful native Rhineland. For a while it seemed as if all this glory would come to an end forever, for devastating predatory fishing and all manner of other "work of civilization" had succeeded where all the giant forces of geology, that piled up new high mountain ranges and pushed oceans far beyond the horizon, had failed: the Rhine salmon (like the corresponding ones in the other German rivers) threatened to die out. The brakes are now being put on with desperate energy: may it succeed.

In any event, the lucky ones escape this two-edged human love. They squeeze between the flat meadowy islands in the middle part of the river. Under the old bridge at Basel with the gay little harlequin tower they pass through a deep green water gate into Switzerland. In the distance are the white Alps, like sugar-loaves on the horizon. But there is one last charge. A waterfall that is too mighty, the falls of Schaffhausen block the way at the Lake of Constance. That exceeds their strength. Pilgrims, male and female, with their sweet freight of love, leap at lesser obstacles like trained circus fish. The tail supported on the surface of the water or on a stone and then—zip, up she goes, ten feet high in a twenty-foot curve, like the worms in a Limburger cheese that vault to the edge of your plate, and there we are. If they cannot get any further via Schaffhausen, then southward along the Aar and the Limmat. Past old Zurich with its stiff churches and its dreamy swans, through the long, blue Lake of Zurich around Hutten-Ufenau in the melancholy moonshine, into the deep, bad, man-eating green, green Lake of Walenstadt and on to the uppermost Rhine. Or on under the brown picturesquely gay wooden bridge of Lucerne, straight through the golden green fig-leaf of the Lake of Lucerne, past the classic scene of William Tell and at last climbing from whirlpool to whirlpool up the boiling white torrent to the first blood-red little bouquets of mountain-roses on the granite bosom of the Alps. Up here are the primeval sites of love. Older perhaps than the elevation of these Alpine giants. Older in any event than the tremendous drop of the Rhine into the ocean that endlessly retreated.

And now at last, among their old ancestral Penates, comes the labour of love, the reward for this whole crusade through half of Europe.

The full-grown, fully matured salmon knight again grows arrogant from amorous desire. The skin on its back thickens to a dark rind, but in return its belly gleams a fiery red, its sides suddenly become covered with glorious purple spots, which melt into blood-red zigzag decorations on a sky-blue ground in the head, and a bright seam of colour borders the fins. But strangest of all, the tip of the lower jaw grows out from one and a half to two and a half inches in a hook of cartilage curved upward and finally fitting only with difficulty in a pit in the upper part of the snout, frequently boring into the skin of the nose again like the tusks of the grotesque Babirusa boars on Celebes. The knight's mouth with this cross of love cannot be completely shut any more, so that for this reason alone eating finally becomes impossible during love-time. It is just as if a loyal gallant wanted to express to the lady of his heart with a silent gesture: Look; I love you so much that I have vowed not to touch food before the longed-for hour of love, and as a token I have myself put a lock on my mouth.

When at last knight and lady-love really agree on a good spot, the high act is consummated essentially in trout fashion, only in loftier dimensions corresponding to the proportions of the big fish. The love-pit is dug at a shallow spot. The water must flow somewhat gently here, and it must not be over a foot and a half deep: frequently that is barely enough to cover the backs of the loving couple. Now the mighty burrowing work of constructing the cradle first begins on the lady's part. Belly and head cut deep into the pebbly bed and the tail fans till the stones fly. In this way an oval hollow results, up to six feet long and three feet across; plenty of room to bury a human being in. Mostly they do not stop at one, but roll out five to eight of them. Then in a still, early hour of morning or evening when Mrs. Salmon is cozily resting in one of these love-crypts that fit so well, head comfortably propped up on a stone, the gallant appears. Softly he snuggles beside his lady-love, at first not with his head resting beside hers but just the other way around, with his cheek pressing closely against her flank in the region of the love-gate. His lying down is already sufficient to bring about a decision in her. Out of her

huge treasure of thirty thousand, which she has faithfully fed plump with her best muscular meat, she begins to pay out the first pretty salmon-red little eggs like freshly minted gold pieces. Immediately on sight of this, the knight now turns his whole body around, and really leaning cheek against cheek lays himself for a moment parallel to the lady in the pit and on his part liberates the first blessing little cloud of milt which the gently moving stream carries to the golden eggs like a soft messenger of peace. As the laying of eggs slowly proceeds, the male customarily takes a little headstart of three feet or so and then entrusts cloud after cloud to the stream rearward, just as leisurely as gold piece after gold piece is falling behind. Weeks pass until the great work with the necessary pauses is finished on both sides. Incidentally many a merry intermezzo is reported, which would furnish endless material for a Nibelungen epic poet. There are jokes and pranks very similar to those among the deer. Young males, green about love but already madly in love, come butting in while everything is in full and very serious swing. With chivalrous rage, the stately rightful lord and master hurls himself upon every interloper. But while he is defending the honour of the marital sand pit against one villain, the female calmly keeps on laying her eggs and occasionally does not by any means ward off another young Don Juan if he knows how to exploit the heat of battle slyly and bestow the blessing of a friend of the family on the layer of eggs that happen to be without a master. On the contrary, if matters actually do get that far, the peaceful female quickly whisks a layer of sand over this load and goes on with her text. Only when the actual true lover in wedding clothes is completely crowded out or somehow taken away from her, does she become peevish, does not bother about the young blades but goes and gets herself a new lover, an older and more experienced one. The eggs later produce the young without the old ones having to care any further in the matter. Like the old ones, the youngsters return to the sea when the right time comes, where they eat until they are round and fat and then begin the old game, the old pilgrimage anew.

There is infinite humour in this comedy of love among the salmon, above all in this fight, not as yet for possession of the female's body but for the pit in the sand, which at present symbolically and externally embodies the vagina and womb of the female salmon. Just as the old Frankish knights used to joust in the

tourney just for a little wreath, lying in the middle of the field, from the head of their lady-love, while the lady-love herself is perched high up in the gallery, unapproachable for all!

And yet, in such a state of affairs, how little was lacking for the act itself to become very much more intimate!

How obvious it would have been if this salmon knight, incomparable gymnast as he was and one that had leaped over waterfalls, had no longer contented himself with merely taking up a position in proximity to the female but had sought a slightly more tender situation and had by all means attached importance to being present always very, very closely, gateway to gateway, at the moment when the eggs were discharged, so that he could contribute his part to the cause in the same moment in which the necessary came from the other party. That the act would be deepened to a close pressing together of the two bodies over the pit.

A third tribe of troutlike fish demonstrates this step for you ever so prettily. The blue char love intimately in that fashion. Years ago, fat old Vogt watched them. It was in Lake Neuenburg. In the winter time. Moonlight. The blue char arrived; little salmon thirty inches long and less. Whole swarms of them. But out of this mass they joined up in pairs. And when a pair was really united, it shot up abruptly out of the moon-tinged mirror of the lake—two wrestling silver strips. Belly was placed against belly. Three feet high their leap flashed over the water in the cold winter air. And during this leap the milt squirted out of the knight's body and the roe out of the body of his lady fair. This was no leap to conquer a waterfall. But it was a running high jump into love, the gifts of this love pouring down like a waterfall. The triumph of gymnastics, acquired in the course of wanderings, now proving itself in the game of love. Picture to yourself a nuptial leap like that over the nest pit which is to receive the fertilized egg, and you are again a whole stretch further along. A piece further on the track to you.

Let your eye rove again, far from the old fish lake, deep into the human activities of our most noble civilization of to-day.

Dance music.

Graceful couples, loosely folded in each other's arms, swing along in the dance. Male and female. Hot cheeks, hot eyes. But otherwise just a naïve, honest game, harmless, consecrated by the rhythm

of music and seemingly entirely raised by it to a higher, more spiritualized level in humanity.

And yet, as the philosopher's eye pierces through these pretty pairs of dancers, here too are age-old accords.

In this half embrace merely with the arms, whereby body hovers against body only very loosely and yet the approach is so great that the warm breath of the one young human breast grazes the breast of the other, in this dancing individual composed of the two there rises up something of the vertebrate animal's simplest, most primitive attitude of love. These arms that hold on to hand and hip are the old pectoral fins of the little fish in the lake, with which the two scaly bodies kept their equilibrium loosely together. These legs that are lifted from the ground in dancing are the little old Melusinian tails of the leaping salmon in the love-leap. If with the breath of that dear girl over there a little egg were to fly out, imperceptibly small and lost in the shuffle of the golden specks of dust which the dance excites into whirling, and if at the same time totally invisible little elves of spermatozoa fluttered out with the breath of the male dancer, and if these breaths in crossing one another united this secret life, so that a fertilized ovum sank down to the floor, and if this inlaid floor were the good old love-pit in the sand, out of which this germ of life was really to bloom . . . the old picture of trout love would be brought back again in its entirety.

Things do not go quite that far, although there can be no doubt about the existence of an erotic root in the dance even on the noblest heights of our civilization.

In a certain sense, the dance went over a similar course among us as the kiss.

Among savage peoples, the dance often quite naïvely constitutes a direct elementary school of the genuine human act of copulation itself. In older civilization it still openly keeps this rôle for a long while, at least in one species, which only awakening, refined morality then isolates as an "obscene dance." We still continue to have a certain gargoyle of this species to-day, but for all finer sensibilities, even where they by no means reject erotic values in themselves, it is utterly on the decline as a direct value of mixed love in this form. A second motive which was inherent in the dance from an early stage and which grew ever stronger then

had a certain tendency to separate it entirely from the erotic. This time it was not an ethical motive as in the case of the kiss, but an æsthetic one; namely its relation to art.

One line of development that has continued to flourish in lively fashion to this day and latterly has bloomed ever more intensively has practically done the dance entirely out of its erotic connection. Wherever art conquers something completely, invariably it gradually eliminates the direct erotic element. Where one succeeds in seeing the human body entirely as a statue, this must inevitably happen. And the dancing body in motion, as a purely æsthetic spectacle, must in the end succumb to this.

On the other hand, powerful forces, in my opinion very powerful now as before, worked and still work against this force of the æsthetic; forces which in a certain sense spring from the nature of the æsthetic itself. Dancing became connected with music. But of all the arts, music, as you know, is the one that most intimately stimulates erotic feelings. It does so at a high level of civilization in an infinitely fine and refined but nevertheless extremely powerful connection. Music in art has traits of mixed love in love. It too possesses as its realm the instinctively monstrous, the demonic but at the same time the warm-bloodedness of love as well, which constantly injects an enormous elemental force into things. Schopenhauer felt this in a big way when he conceived music within art to be the elemental representation of "the will" itself. The comparison at the same time gives you the connection: that which most powerfully pictures the "will" will invariably be nearest to its actual excitation. But the erotic element too belongs to this "will."

To this add the fact that music draws real, warm human bodies into its rhythms and, in dancing together, the bodies of both sexes even, in very close proximity. The result cannot fail to be that very fine erotic motives will continually make their appearance in the noblest, æsthetically most transfigured dance, even where the directly erotic dance is and remains an absolutely abandoned savage stage. Think of your funniest and cutest bit of youthful asininity during your first dancing lessons. Think what dancing means for the adolescent force particularly of female existence, inwardly elementally awakened though still held in leash culturally. Play, art, symbol, all supply the body colours. But down in the depths in us the demonic element of nature keeps on working into everything; this element, whose reality courses like red blood

through all symbols at a certain period. In a higher sense, the dance in our case still continues to close the love-individual in a strange harmony of physically approaching and yet distantly spiritualized sensations. Actual physical proximity, music, elemental passion stirring up everything, yet with perfect certainty that the coarse erotic element is absolutely out of the question, still makes the psychology of the joint dance even in our most elegant ballroom form an uncommonly interesting problem, in which you can study the whole tremendous interplay of our natural and civilized qualities, this splendid play in which the nature and wealth of the creature called "man" so essentially lies.

In the animal, however, you have the entirely original picture which still appears in you, but only as a fossil, as something turned to stone, utterly naïve and pregnant at the same time.

Little wriggling fish in the lake, without specific weight in their watery element merrily shooting to one another with a graceful stroke of the tail fin, holding one another dallyingly and even leaping out high above the water together, they still give you the original starting-point, the original focal point of your attitude in dancing to-day as the direct expression of consummated mixed love of the two persons that are partners in it. . . .

Three further roads emerge between a fish that loves while dancing in blue char fashion and you, when you not only have to dance but consummate your sacred act in all its greatness.

Three further stations.

You can also say, three further beams of light that shine from the sexual life into your fish-man origin.

The first station was that body was no longer merely placed parallel to body in the attitude of dancers. But that those places on both bodies, at which the milt and the roe pressed forward, were pressed directly together, the one upon the other. As the milt and roe mixed within this connection and the true act of mixing between sperm-cell and egg-cell took place, the exterior love-pit in the sand was removed into the individual itself.

Those two places were particular openings of the body, two gateways of the body through which the roe and milt got out of the interior of those bodies. The lock therefore really consisted of two openings being pressed one upon the other. And so therefore the question as to the kind and situation of these particular openings,

these gateways of love, was bound to gain decisive importance for this station. The nature of this station might therefore be crudely characterized as the door question about the act of love.

The two further stations result with compelling logic as inferences from this way of putting the problem. A still more deepened problem of position. And the knotting together of this problem of making a physical connection with an auxiliary soul problem of the two big persons participating in love.

The deeper gymnastic problem consisted in the pressing together of the two gateways of love assuming ever more ingenious form. The attempt was made to have the two halves veritably root in one another. The edge of the one gateway literally developed a hand in order to clamp itself fast in the other; a member which in the end came to be pressed in in tube fashion. You can characterize this problem as the problem of the copulatory organ or the member question for short.

The spiritual auxiliary problem culminated in both love-halves being urged by a very particular form of nervous excitement to press their sexual gates together as closely as possible and gradually make the physical connection as firm as possible therefore. This nervous excitation, which expressly located at the rims of the gateways, is nothing else but that singular personal premium previously touched on which nature pays for the extreme act of mixing, namely, sensual pleasure. And so you obtain a pleasure question as the sum and substance of this third station.

Each one of these three questions in turn contains its own snarl of evolutionary complications. Each one has a gripping love-story of its own on the historical line from fish to man.

I shall begin with the door question . . . which alone is a tale that cannot be matched for the dauntless daring with which the evolutionary principle, splendidly struggling upward but hemmed in by thousands of old barriers of tradition, kept on working over and transforming. You need not grow anxious: man will emerge after all, the genuine, unadulterated human being—"you," who is as he is, not *"quia absurdum,"* but just because in swimming onward and upward he carried very definite conditions in himself, because he was "determined" in his own self; conditions which at the same time formed his own nature. These conditions made it possible for him to go forward, because there was a motive in them which irresistibly increased in strength with the uphill climb. But

these conditions never gave him the power of cutting off his own evolutionary history, his own past, as if he were a prince from heaven. If he had ever cut it off, his own future evolution would instantly be dead with it and he would plunge forward into nothing, because suddenly there was nothing behind him.

On to the door question, therefore.

§ 7

We, before we hither wandered,
Thoroughly the question pondered:
Sisters, Brothers, speed afar!
Briefest travel, light endurance,
Yield the validest assurance
That we more than fishes are.
Classical Walpurgis-Night

The door question in the act of copulation cleanly solves one "absurdity" for you at once. It gives you the key as to why in your human body of to-day two such fundamentally different things as the loathsome waste material, urine, and venerably precious procreative substance have to use one and the same gateway on their departure from the deep purple shaft.

We already spoke once about how your body was equipped with doors generally. I shall leave out the "windows"—the eyes and ears —which I do not count as genuine doors. We first had only one regular gateway of the body in you in your primeval ancestral animal forms; that was the mouth. You will recall that once upon a time when you were still wholly on the threshold of coming into being as an animal, in the volvox stadium, you were just a crude lump of cells, a sort of hollow bladder made up of cells that were all of a kind. Then a first, clear division of labour took place. One division of cells established itself as a protecting and feeling skin. The other as a digesting stomach. At this stage, the animal took on the form of a cup instead of a bladder; it had a skin on the outside and a stomach wall on the inside and somewhere this skin left a hole—a mouth through which the necessary nutrition could get into the stomach. By multifarious transformations there now came out of this cup-shaped form a third form, whose basic design was no longer the bladder without a hole nor the cup with a mouth hole, but an extended tube which had a hole in front as well as behind, in front a mouth and behind an anus. The fish stage, where we just halted, begins beyond this tube form with the two holes.

When we considered the matter of doors before, we always dealt only with eating and digesting; we never asked anything whatever about how the sexual substances, semen and eggs, were formed and how they were transported out of the body in the aforementioned bladders, cups and tubes of your pre-fishy ancestors.

The matter is eminently a matter of course in the case of the bladder which was entirely without a hole in the beginning. If certain cells, as the real sexual cells for fertilizing strangers, had to become separated from the association in such a cell bladder and flop into the open water, that could not take place toward the interior, into the closed hollow space of the bladder without doors, (provided it was not supposed to coincide with the disintegration of the entire mother colony, with the "bursting of the bladder"); it had to take place from the skin of the bladder outward. Those little wandering cells that sallied forth to found new colonies were simply shed by the skin, just as a small piece of nail or a small pimple on the skin scales off occasionally in your case. And if you wanted to imagine two of these simplest cell bladders already pressing themselves together in a real act of copulation, like those dancing blue char, procreation would in all seriousness take place from skin to skin by the simple pressure of a dancing couple against one another. "Oh press thy cheek against my cheek. . . ." a rosy little flake of skin from one cheek would serve as sperm-cell, and would procreate a child with a little pimple on the other cheek in regular fashion.

This most naïve method of "procreating with the skin" prevailed without the shadow of a doubt for a long while among your very old ancestors. I have told you so often about the little green freshwater polyp. The hydra is already one chapter further along. It can look down with scorn on the bladder without a hole. It already has the regular cup form with skin, stomach and mouth opening. It has even specialized just a little beyond this simplest original form. Nevertheless, this polyp is still a most decided skin lover. Semen as well as egg-cells continue to scale off from the outer skin of its body in pimple fashion; love swells out of it in the form of corns, as it were, which simply drop down when their time comes and which are sometimes sperm-cells and sometimes eggs.

Just beyond the polyp a transformation appears which palpably takes account of the existence of the body's first gateway—the

mouth. Under division of labour among the cells, the skin has become the outer fort of the body's fortress, as it were, ever since the cup form was clearly achieved. From now on it represents the outer and more exposed part of the body, it serves all manner of defensive and orienting purposes, becomes hard, armour-like, chalky, or at least, bristly, the rough fellow, so to speak, whose function it is to scrap with Tom, Dick and Harry. It no longer seems practicable from now on to recruit the most delicate, the most defenceless and yet at the same time the most precious formations in the entire factory from this exposed fire wall. Simultaneously, however, the interior cavity of the body has become much more serviceable for this. It is no longer the hermetically sealed hollow of a bladder, but a nice little stomach kettle with an open mouth. Why should not the procreative materials just as well walk out where the food substances come walking in? Let us recruit them from the cells of the stomach wall then. Let stomach love take the place of skin love as a new station!

You see this stage splendidly developed among a large number of those beautiful jelly-fish or medusæ, whose bell-shaped body is really nothing else but a swimming polyp turned upside down. Very consistently in this case, sperm-cells and egg-cells separate from the skin of the stomach in certain definite nooks of the stomach and get out through their producer's open mouth. Copulation after the manner of the blue char would here have to take place, no longer in the sense of corn touching corn, but in all seriousness by way of a kiss. Strictly speaking, even more coarsely —by belching. The one love-partner's mouth would belch semen, and the mouth of the other eggs. And the door of love would simply be the only door of the body that existed, namely the mouth. It seems, however, as if this method had for good and sufficient reasons approximated something that was merely kiss-like.

In the long run, the interior of the stomach proved to be just as poor a temple of Venus as the outer skin.

The more the stomach developed and improved as purely an eating apparatus, the more precarious the sojourn in it was bound to become for all things that did not want to be digested. They got into a crush of all manner of material that was pumped in, that was examined from the viewpoint of digestion, shoved around, covered with sharp sauces and sucked out, and there was a very high degree of danger, if one was not squeezed to death in the crowd,

of simply being digested along with the rest, nolens volens. That would have been the climax of the conflict between love and eating: eating oneself—digesting one's own sexual substances. That simply would not do at all.

As the stomach became a tube in the worm stage, and therefore acquired an opening behind—an anus—the problem of getting out of the stomach at the right time would in itself have become a more comfortable one: the sperm-cells and egg-cells would no longer need to be belched through the mouth but could get out into the open along with the excrements through the anus, and they could have been brought together by a veritable sort of anal love. However, before this came markedly and generally into question, your worm-like ancestors appear to have taken a decided stand against the whole stomach procreation business generally for the chief reason which I just mentioned, so that matters no longer developed to the point of direct anal love for the present, and oral love too was practically abandoned in favour of an entirely new method.

Among the worms, in contrast to the polyps, jelly-fish and so on, something develops for the first time in the body which is totally unknown in animals consisting simply of skin and stomach. An intermediate space forms between the outer skin and the stomach wall; a new cavity in the body which once more surrounds the stomach like a second body tube. It is called the body cavity, and it is still that same cavity which you first encounter in your human body to-day when you open it up. Imagine that you were to slit open your own abdomen according to that abominable Japanese practice. First you would slit through the solid abdominal wall of skin and muscles into the interior. You would not cut right into the intestines (the prolonged stomach), but the entrails would now squeeze out of the open cavity as tubes that were still firmly closed. You would merely have opened the abdominal cavity with your incision, in other words, the space in which stomach and intestines lie embedded in the form of a special tube that naturally extends to the stomach and anus. It is not that way as yet in the case of the polyps: there, when you cut into the skin of a hydra, you cut through a thin supporting layer straight into the wall of the intestine lying directly against it, without first boring into a special body cavity between the skin and the intestine. A body cavity gradually formed first among the worms, from whom you received

it. The process was not so very simple, at least not along the evolutionary line leading to you. It was not just a case of the skin and intestine moving away from one another and so leaving an empty space between them. Cells at the mouth end of the stomach seem to have been shoved in on both sides of the mouth in pocket fashion, like a finger of a glove pushed in between two napkins lying on top of one another. In the end the finger on each side closed up at the top and now it lay like a hollow sausage between skin and stomach. Its inner wall was not formed by skin and stomach, but by the new cell masses of the glove-finger that had been pushed in.

The details of this process are by no means certain yet and you can comfort yourself with the knowledge that when the harmless little word "body hollow" (cœlom is the learned expression for it) is uttered in zoology to-day, the various parties will go for you like spiders for a fly: each one will wrap you up in a different net of theories, and the whole matter in its actual extent cannot be presented in a popular way at all as yet. If I serve it to you in this home-made fashion, you must bear clearly in mind that you are getting only a certain provisional approximation to the truth. But even so it will answer for the following.

Just hold on tight for your part to the rough idea of the finger of a glove sinking in on both sides of the mouth and, as the two fingers merged together, in the end forming a new inner tube around the stomach: the aforesaid body cavity. It was a matter of course that the places on the animal which customarily split off semen or eggs would make use of this new hollow which sagged in like a bag. They had taken a dislike to the Cyclops' cave of the stomach where their precious cells were constantly exposed to the danger of being slaughtered as a sheep for food by Polyphemus and eaten up along with the rest. And so, under the guidance of the "Good Fairy Utility," they had settled down to the best of their ability close to the entrance of the cave, the mouth. But this was still a windy spot.

Imagine in your own case that the testicles or ovaries were located where the tonsils are on both sides of the gullet. I am not speaking now of how the actual act of copulation would take place in such a case; for this act we are for the present keeping to the picture of those blue char dancing body to body. But consider how the gullet is already a place overburdened with work of every sort.

The stream of liquid and solid nourishment flows down or is swallowed down with an effort. The air blows up and down for the breathing lungs that likewise open here, and a further complication is caused by the throat's rôle as an organ of speech. Further in front in the mouth lies a fine chemical organ of sense in the shape of the tongue, which plays an extremely important rôle in the selection of nourishment. And further you have the outposts of the stomach there, already making a start with digestion: as the stomach's crude, first accomplices, the teeth reduce the food to small bits and the salivary glands pour the first solvent sauce over it. And now picture the procreative materials in addition, in this overload that truly makes your head swim! What an unavoidable danger there would be that they would involuntarily be chewed to pieces here, attacked by the saliva and swallowed down into the stomach instead of being thrust out; or that they would get into the windpipe and cause choking and dire distress to the avenues of speech. Of course the situation was not as complicated in your old worm ancestors as it is in you to-day. But certain dangers, such as the sexual substances being swallowed, undoubtedly existed.

It was no wonder then that those new cavities bagging in on the sides between the wall of the stomach and the skin afforded a welcome retreat for the semen and egg department of the body's big factory.

Imagine that the tonsils at your throat had been your real sexual parts for a while and that an opportunity had come along for these tonsils to slide down on both sides into the abdominal cavity between the intestine and the outer wall of the body. There can be no doubt that a much more comfortable, convenient and less endangered place was offered deep down in there for separating these most precious and most sacred products of the body's whole business enterprise. On both sides of the Cyclops' cave of the stomach, a special chapel was reserved for the individual's holy of holies, where the highest mystery could take place in unapproachable glory and secrecy: the possibility of a connection between the individual and the race and thereby a visible form of the immortality of the individual through the production of sperm-cells and egg-cells. The holy grail of the entire organism, as it were, sank into two niches or sanctuaries where from now on there was no further danger of any kind that this most precious vessel could ever be used for a profane meal.

And this arrangement would really have been perfectly splendid if there had not been just one hitch about it.

The body cavity had been formed, and the places where semen or eggs were split off were from now on located in two beautiful tabernacles deep within this hollow between the stomach wall and the body's outer wall. In their well protected situation, they gradually developed into definite organs which turned out their semen or eggs, as the case might be, at the proper time. Turned out; but where to? Eggs as well as semen no longer fell into the open gullet, but at first they fell into the body cavity that was closed all around. No doubt there was a laudable purpose in the glove-fingers that formed this hollow growing nicely together again at the top; so that the things which were to take place and develop in them, representing the most intimate inner life of the body, would not be disturbed from the outside. But thereby, the sexual materials would have been exposed to the danger of being imprisoned in the belly of the whale like Munchausen's ship. Joyously it sailed in through the open maw; suddenly the monster shut its mouth and ship and crew were jailed in its belly. After it had happily transferred its holy grail into the innermost sanctum, semen and egg production had to try and get out of this shrine again, even through a mouse hole, when its time came to produce itself in public. A really simple way developed. The belly cavity simply had to have another very small hole in it no matter where, just big enough for the sperm-cells and egg-cells to squeeze through.

Take a lamprey in hand. As you know, these delicious little animals are very close to your genealogical tree and, in outline at least, they still show you the place where your ancestors were when they first began to develop a skull around their little brain. In the case of the lamprey, semen and eggs are formed in the cavity of the body between the intestinal wall and the covering of the body. When they are mature, they fall down into the belly hollow and now the thing is to get out. Help is afforded by a simple hole in the wall of the body, opening behind the anus; a true and genuine sexual gateway expressly on hand for that purpose. And that then would be the original, the prototype of the further solution of the door problem: a special sexual door at the belly, having just as little to do with the mouth as with the anus. You find this prototype just as clearly developed in several higher fish.

From this point a further, small but very important step forward in a straight line can easily be imagined. It would not be necessary for the sexual gateway to be bored through to the body cavity. The sexual organs in the interior of the body could form a tube, and the point of this tube could bore through the belly wall. Milt and roe would slide into this tube, instead of into the body cavity. And they would escape through the opening of this tube out of the whale's belly like Jonah and Munchausen.

Here we must speak about an extremely interesting road which evolving nature took, and which first furnishes the key to the mystery of your sexual doors as they exist to-day.

We seemingly have come abruptly upon your human situation with the progressive step which we just mentioned. A tube comes out of the body cavity, and the apparatus for producing semen and eggs is attached at the rear end of this tube. Is your case very different? In woman, at least, things appear to be exactly that way. You have an opening on the naked body between the thighs, having absolutely nothing to do with mouth and anus, and therefore with the alimentary canal generally. It leads directly into the abdominal cavity lying between the intestinal wall and the wall of the body. It no longer opens into the abdominal cavity in lamprey fashion, however; but a tube runs from this opening to an organ which receives the eggs at second-hand from certain places of production in the abdominal cavity. That insignificantly higher stage of development appears to have been reached, but there seems to be no further difference.

In the case of the human male, some sort of a specialization has unmistakably made the matter more complicated. The apparatus for producing semen, in the shape of a bag containing the testicles, appears pressed forward out of the abdominal cavity and the tube belonging to it has become entirely visible externally as a "member." But this development is connected with matters of copulation, which we have particularly reserved to ourselves as the member question, and therefore does not come in question here where simply the door as such is involved.

On looking at it more closely, one thing does strike you; the very thing which, with a touch of pathos, we included among the horrors of human love from the viewpoint of a theory of super-

natural creation. This gateway of the body in man serves not only the sexual materials but also a second matter which according to established usage is extremely disagreeable, namely urine.

We will now have a look at the proceedings, not at all pathetically but quite calmly, from the viewpoint of natural history.

After all, the concept of the "disagreeable" invariably gets down to a subjective standpoint more or less.

A dead cat is lying back there washed up on the shore of the lake. I think we are in agreement that a drowned body, swollen up to the bursting point with the gases of decomposition, with poisonous flies swarming around it, and filling the lovely spring air far and wide with a pestilential odour comes pretty close to representing the abysmal rock bottom of all that is æsthetically atrocious. And yet I would be willing to wager that if I could conjure you down to the size of a bacillus of decay, and then transferred you into that drowned carcass without telling you where you were, you would believe you were in some Elysian fields of the Blessed, replete with marvels of colour, such as Böcklin painted. A wondrous emerald-green dome of heaven would arch over you, shot through with luminous ether and magically bright, and in its radiance you would view a landscape such as the heart of many a modern painter dreams: blood-red mountains, sky-blue woods and an ocean steeped in ochre. A giant blue-black hippopotamus would wander in the centre of the field and out of the sea would leap silvery white dolphins the size of whales. The heavens would be the vaulted interior of the drowned cat's bloated belly, shimmering with the vivid green of decomposition and all those other Böcklin colours would belong to the various decaying entrails and fluids, into which a dung-beetle had forced its way and where maggots burrow. Everything just happens to depend on your standpoint. If conversely you descended from Sirius as a vast spirit of light, it might well be that this whole earth would strike you as a dirty drowned body, spat out by the great light ocean of living fire worlds. The sacred azure heaven with its chaste little water bubbles that shines up there above you would appear like a disgusting decomposing skin on your wretched excrement, the earth, which is not even self-luminous any more, and under this horrible bladder human beings would swarm like maggots and dung-beetles, driving their holes in its putrefaction. It is absolutely necessary to say this to oneself quite ruthlessly once at a place such as this.

Viewed with the necessary perspective, the case of urine is not so very different, either.

I think you have an approximate idea what your urine is beyond good and evil.

As a living human being, you have in you as the law of your existence that you must incessantly eat your way through this world as long as you live. An independent individuality mysteriously asserts itself in you, to be sure. But this individuality is at the same time imprisoned in a sort of screw; it must move forward in time in such a way that it continually screws through so and so many integral parts of other, strange individualities. It takes these ingredients into itself; they pass through it spacially. Certain parts fit into its structure, remain with it, and become part of "itself"; the others pass clean through, subsequently drop off, and disappear entirely behind it. This happens from the first day of your life. You keep stuffing and stuffing a strange world into you. All varieties of such a world. Air, water, animal and vegetable matter. The atmosphere in which you swim; the liquid marriage of oxygen and hydrogen; hoary old uncles of yours—plants; your ancestors and cousins—animals. You are like an incessantly burrowing maggot: before you the mountain of cheese in which you dig a breach, and behind you an endless track of what has been choked through, rejected and digested.

You take in the foreign element in three forms: solid, liquid and gaseous. And in these three forms it leaves you again. A life-size picture of the quantities would make your senses reel. Just imagine that you were suddenly to survey the entire life-work of your individuality in this sense: that all the food you have consumed during your lifetime were before you, from the maternal blood that fed you when you were an embryo to the last breath of air in the wilted lungs of the dying old man. And behind you the endless scene of refuse. It is a lucky thing that nature keeps on cleaning up, otherwise, as Martin Luther once said, man would long ago have stopped up the whole earth with his refuse. You would shudder at the giant size of the actual "you" as an individual, the mass of things that you had surrounded and forced your way through in your years of life. Hills and ponds of nourishment; and behind you, hills and ponds of waste. And humanity, as a whole, like a monstrous earthworm, continually devouring the whole crust of the earth throughout the millenniums and passing it out

again, just as the earthworm does its own little field. The plants chew up the mineral substances for humanity beforehand, then it devours earth's green cover of plants and devours the animal which itself has already fed on plants. And in the highest sense, since plant, animal and man are all only parts of the earth, this terrestrial globe, like an enormous stomach, keeps right on digesting itself and making its own materials circulate around and around.

Your urine belongs in this great picture; it, too, is an incessantly rushing stream in this gigantic panorama, a steady downpour that runs down from animality and humanity, to return to the great cycle again.

Food passed into you; you again ate your way for a certain number of cubic inches into your surroundings, into the earth in which you are sticking as an earthworm. The intestinal tube and its appendage, the lungs (originally only a blind alley bag on the side of the gullet, as you will remember) have surrounded the nourishment in crude condition at first. Then the blood pays it out in refined form to all the tissues of the body, and pumps it into every last little nook and corner. The blood takes in the gaseous nourishment in the lungs; from the intestinal walls it sucks in the solid-liquid nourishment and it carries the nutritive substances to every last one of the millions and millions of cells in the farthermost tiny fibre of the brain or the ultimate tip of the toe down below. But now a certain amount of the big kitchen's waste matter, the fine excrements of the whole organism from every single cell, has to be removed. The intestine itself throws out great indigestible masses of food. But that is only the most superfluous stuff; the hard shell of the nutritive nut, as it were. The blood has to take care of the much more delicate, more specialized removal of all that becomes superfluous in every cell of the entire body. And there are two ways of doing this. It pumps out the gaseous form of waste that must be removed in the lungs as carbon dioxide. To take care of the watery waste and the waste solids that are dissolved, the blood passes two splendid cleansing places in you, the kidneys.

Each of your two kidneys is nothing else but an excellent filtering apparatus. The wave of blood comes rushing along through its securely closed system of pipes. Suddenly it passes the kidney. It floats on the filter, on the sieve, like the dirty water in the gutter

on the perforated cover of a sewer. At the moment of passing the kidney, the fluid blood is essentially composed of three totally different things. Firstly, clear water of which a considerable part can very well be drawn off as superfluous. Secondly, the actual filthy and poisonous substances that must be gotten out as quickly as ever possible. Thirdly, however, good nutritive broth that has just been gained, the circulating albuminous substances, which must absolutely not go down the sink here. And the kidney's sieve correspondingly lets only the superfluous water and the excremental material filter down, and keeps back the albuminous ingredients. It does so in a healthy condition at least. In certain forms of sickness, the filtering plate gets loosened in such a way that the albumen goes down, too, the body's most sacred nutritive bouillon flows off, and then the entire human being is in a bad way.

"Going down" means that the waste fluid now passes through a regular sewage system instead of the canal of the blood, and runs through a separate pipe from each kidney into a great common reservoir, the urinary bladder. And from this bladder it rushes directly out of the entire body through a last irrigation pipe. Since the kidneys lie in the interior of the abdominal cavity just exactly as the ovaries do, this can logically take place only through a hole that has been made in the abdominal wall.

And strangely enough, in the female this inner urinary conduit empties into the same gateway through which the sexual materials pass. For a very last short stretch, in the arch of the gateway itself, as it were, both exits even unite. And in the case of a man, this union is far more intimate. There you have urine and semen running absolutely in common (even though not simultaneously) through the entire, big end of the canal called the penis, as if they had always been the best friends in the world.

I believe there is an obvious enough idea here. This time nature was frugal. Under the compulsion of some definite utility that decidedly recommended the principle of saving instead of wastefulness here, Nature wanted to permit only one opening to be bored through the closed body cavity. And since two systems of pipes had to come out of this interior space—the discharge from the kidney filters and the discharge from the sexual organs—nature simply put these pipe openings together for as far as it would work.

In other respects, nature had already clearly brought about a

simplification in both of these systems. You will recall that the bodily house of your wormy ancestors took on the general form of a motor car. In the middle, an intestine as the groundwork. The further organs double, at right and left: two eyes, two ears, two arms and legs, even two hemispheres of the brain and two lungs. In this general twofold character of all the organs that developed later, the sexual organs could not stand back either. And so your beloved one still has two ovaries to-day, one on the right and one on the left. One would do. Among birds, for example, one of them (the right one) is almost invariably entirely stunted, so that when you cut a hen open you seemingly find only a single genuine ovary every time. But nevertheless the old double symmetry has in most cases, and so to the human female as well, maintained itself faithfully in the old-fashioned way. In the human male (despite such striking transformations otherwise) you still have two organs for producing semen in the common scrotum.

Nevertheless, at least one consistent way of saving becomes visible in the fact that from a very early stage each ovary no longer bored its own separate hole to the outside, but both ovarian canals emptied into a single common opening. This simplification of the gateway already prevails very generally among the fishes and from there on up no different way is known.

This same principle governed in the case of the kidneys. They, too, originated in pairs, one on each side of the body, and they have maintained themselves that way right up to you. But the principle of simplification unmistakably remains in evidence in the fact that only one urinary gateway developed instead of two. Among animals where a bladder developed as a common reservoir for both kidney filters, only one gateway was necessary as it was, and you yourself belong here as a mammal.

In this sense there really is nothing surprising about imagining that one day the urinary gateway and the sexual gateway became merged into one.

As a matter of fact, evolution was from the very beginning even more frugal than this logical line would result in being.

The formation of a special sexual gateway which could only subsequently have become merged with the urinary gateway did not take place at all in the main line of your ancestors: it did not have to take place. For in very early times matters had become arranged in such a way that the urinary pipe along with the urinary

opening simply took over the matter of transporting the sexual materials on out.

That sounds strange enough. But just think out the following course of events.

Here is a worm. It has developed a closed body cavity, and in this hollow lie its sexual organs, as if in the most beautiful of tabernacles. Semen and eggs want to get out. But how? One way was to break a special sexual opening through. But what if it was not necessary to do so? The eggs or spermatozoa are drifting along the inner wall of the worm's belly like so many Jonahs in the whale. Suddenly a ray of light. Fine little hatchways open through the wall of the body. Small shafts pass through the wall to the outside like fox holes. These fine galleries, however, are nothing else but the initial plant of what we call "kidneys" to-day.

The walls of these shafts serve as first, still very simple filters, through which the useless juices of the worm's body run off. But since they already represent regular openings in the whale's hollow, even though very fine ones, our little Jonahs and Munchausens daringly venture into them and clamber through; and the problem is solved without any special sexual gate: semen and eggs are out in the open and got there by the urinary road. A large number of worms still show this exactly to-day.

Among other worms, the kidney apparatus early became so arranged that you no longer had many small kidney channels all emptying out. The several urine filters poured their contents into a larger tube lying on either side in the worm's body. This tube now opened, just like a single one of those tiny filtering canals of the previous sort, into the body cavity on the one hand and on the other hand out into the open air.

The main thing was in no way altered thereby: semen and eggs could simply use this big urinary tube on both sides of the body, instead of the many little ones, as a gateway for getting out of the body's jail into the outer world. You still find this stage very well developed among worms living to-day, and specifically among those worms which are unmistakably close to your human family tree in other respects.

And thus and not otherwise, as it seems, did this matter start among the oldest vertebrate animals (your own more immediate clan); among the simplest original fish. If the lampreys do not

just happen to do it that way any more, they must have gone along a side road again in this as in other respects. With their special sexual gateway they took a thoroughly logical road, too, as you have seen. A part of the higher fishes likewise turned aside here. But your genuine ancestral line no longer needed that special sexual gateway at all, since eggs and semen had long ago accommodated themselves quite resolutely simply to using the urinary canal and even the kidney itself, which composed the greater part of the canal, for their journey to the outer world. Milt as well as roe fell into the kidney and floated out with the filtered water. True and regular urinary love could be recorded here, and if in this case male and female were to copulate in that blue char fashion, eggs and semen would actually squirt out in the most daring sense, like dirty kidney water, like urine.

With increasing development, however, this extreme way of mixing two things which were fundamentally so very different could not be kept up as something definite and final, merely for the sake of saving space.

In the region where your family tree gradually climbs from the shark via the mud-fish to the amphibian, a distinct endeavour manifests itself to divide the big inner urinary tube into two specialized plants, as it were. One special plant for the sexual materials and one for the urine. The big canal divides; and in the beginning, purely factors in the development of the kidney, which was itself becoming perfected, appear to have played in here. One section of the canal sufficed for the urine. And so the other could be reserved for sexual matters. Down below, both tubes came together again, to be sure, and naturally emptied into the same hole in the wall of the body and finally out. And in this connection the following in turn became established as a special dispensation.

Up to this stage of evolution, your ancestors were in many cases still "hermaphrodites" on the score of love, and perhaps this was originally quite generally the case.

That means that each individual animal produced semen as well as eggs.

You must recall what I told you about the snails and earthworms at this point. The hermaphroditic plant no longer meant that each individual being could copulate with itself at pleasure. Two individual beings had to come together even so. It merely meant that, strictly speaking, none of them had to be entirely male, none of

them entirely female. Each one gave the other semen to fertilize the other's eggs. Each one was a hermaphrodite for life. You know the pretty story in Greek mythology, this mythology of a race of seers who transformed all the dull meditating of the Orient into lovely pictures of art. Hermaphroditos is the son of Hermes and Aphrodite, who mythologically is always amenable even though married. He bathes in a spring; the nymph of this spring, whose watery body his beautiful youthful members touch, falls in love with him, and in answer to her prayer the gods let the bodies of both merge together into a single being, which now is female and at the same time male.

Zoology cannot tell it to you as prettily as that. But it has established as a fact beyond all airy mythology that an entirely naïve hermaphroditism handed down from very olden times has continued to prevail fairly high up in your human family tree. It was the regular practice. Those strange tunicate animals or ascidians on the threshold of the vertebrate, which are at least three-quarters wormlike uncles of yours, still know nothing else. But there are even genuine fish which habitually continue to "practise hermaphroditism" to-day. A variety of lampreys, the curious slime-eels, successively develop mature semen and mature eggs in the same body, like the oysters. Genuine fish belonging to the perch group found in the Mediterranean, are hermaphrodites of the purest water. No commandment of the gods, therefore, would have had to intervene in your case when you were still in this stage of evolution. And Aristophanes would much more likely have known a good reason why Father Zeus would one day have split the double-sexed human being into two halves, male and female, because they had come to be in too high spirits to suit him, what with their double capacity for love.

Hermaphroditism plainly continued to play into the urinary question for a while.

For a considerable time the transportation problem must have been a threefold one. In one and the same individual there was involved: firstly the urine, secondly the semen and thirdly the eggs. If semen and eggs were produced at different times, it was no doubt a matter of complete indifference whether or not they both passed through the same canal exit: there was no danger of mixing on the inside and hence no danger of self-fertilization. But once the simultaneous production of the two kinds of materials in one individual,

as we still have it in the case of those Mediterranean perch, made its appearance, the need for a separation of canals to carry off these different and antithetical sexual materials was bound to become urgent quite apart from the urine. Very early, the following additional way out of the dilemma appears to have developed.

The urinary canal on both sides, as was said, had gradually divided into two complete, independent canals as far as the exit, the one distinctively as a urinary canal fed by the kidney filters, the other as a sexual canal, freighted by the sexual organs. Now the matter became so arranged that the two sexual organs separated in regard to transportation routes. The female organ, which produced eggs, used the part of the urinary tube reserved for sexual substances; the male organ, on the other hand, preferred to continue using the genuine urinary canal now as before, so as not to come into collision with these eggs, as being the lesser evil, so to speak.

And once this had been the tenacious custom for a long while, it persisted as a tradition when hermaphroditism finally ceased entirely. From the amphibians, from the salamanders and frogs on up, there is no longer any hermaphroditism in the realm of higher vertebrates right up to you; at least not normally. In every single salamander, every single lizard, every single bird and every single mammal only one sort of sexual organ is developed capable of functioning: it is either wholly male or wholly female.

But if a male salamander from now on produced only semen and no eggs, it is perfectly understandable that the separate section of its urinary pipe, which hitherto had been tenaciously and exclusively used for the transportation of eggs, now became valueless and shrivelled away. The whole sexual mail, which now consisted only of semen, now as before remained true to the old custom of going out via the kidney, so to speak, and not fighting shy of the genuine urinary way. And so, in its case matters actually had gotten back to the original state of affairs: its entire sexual emission ran through the genuine urinary pipe again.

Conversely, the female salamander, which specialized exclusively in egg production, kept to the separate canal for shipping these eggs and could not possibly do without it. On the other hand, from the very moment that it no longer produced any semen, the genuine urinary canal was a matter of total indifference to it as far as transporting its sexual product was concerned. But since the urine continued to flow now as before, this section of the canal could not

be allowed to shrivel away, and so Mrs. Salamander simply kept both canals side by side in full working order; the one only for the clean eggs and the other only for the dirty water filtered from the kidney.

Each one of the gay little pond salamanders that you may pluck out of the toad puddle there will still show you this whole stage in the prettiest fashion: the female's eggs already emancipated from the urine, although passing through a pipe that was originally separated from the urine conduit; the male's semen, on the other hand, still dropping through the kidney into the urinary canal and floated on out—still one-half urinary love.

Above the salamander, on the line from the lizard to man, the whole apparatus was considerably remodelled. The kidney was to blame this time. As nature continued to develop and improve this valuable blood filter, it was gradually made over into what was really an entirely new organ.

A large excrescence or shoot developed at the lower end of the old kidney apparatus, shoving itself into the abdominal cavity in a totally different position and from now on representing the actual kidney, which took over the entire work of filtering in a very much more ingenious form than had heretofore been the case.

This kidney immediately made a new urinary canal of its own, and in mammals, where these canals coming from both kidneys at left and right joined, a large common reservoir, the urinary bladder, developed. Then a last piece of pipe led out of this vessel to the gateway and let the urine flow off. At the same time, in the case of the male the old urinary canal was completely relieved now, the semen no longer needed to drop through the kidney and into it along with the urine: the old pipe became entirely free for sexual purposes, and became exclusively a "semen conduit" without any urine. In the female, this canal could now shrivel away, since it was entirely without employment as soon as urine no longer passed through it.

And so in the end up to you yourself there were only two different things left over of all this beautiful Odyssey of eggs, semen and urine.

Firstly the fact that you and your beloved's channels of egress for semen as well as ova are really original urinary canals and rightly so, having only gradually been taken possession of and in the end permanently occupied by the sexual materials.

And secondly, a deduction that was obvious enough: the old community, even identity of urinary canal and sexual canal continued to express itself in the wholly or almost identical place where the two great systems of conduits in the body empty into. In the human female, the urinary canal and the sexual canal still open together into the gateway arch, as it were, of one and the same opening between the thighs. In the human male, the semen canal runs even into the urinary canal itself close below the bladder, and urine and semen continue to flow through the entire external male member harmoniously, though not simultaneously, toward the selfsame opening. This male member represents yet another formation of a special canal, about which we shall shortly have something to say.

But you realize that what seemed to you to be the epitome of all that is most horrible, urinal canal love, the use of the same opening by these two systems of the body that are as different as heaven from hell, in reality is already an extreme dilution, a mere ghost of an old, infinitely cruder state of affairs. During millions of years of work, evolution first fished and chiselled the ovaries and then the testicles out of the kidneys, out of the urinary apparatus itself, where they had settled down simply because it offered a way "out of the belly of the whale" for their vital substances. Evolution has unravelled the strands which an historical fate had knotted together, and separated them again until close to the gateway itself. If you choose to call natural evolution God, well and good; then God has been incessantly at work about since the Devonian age, when the first lizard appeared on the scene, separating your sexual materials from the urine again. And now that the matter has almost succeeded, to within the length of a finger, you come along with your late little field of light in the brain, you turn the light on and break into harangues about the awfulness of a world that alternately uses the holy grail of procreation for a urinal as well. . . .

But I am going to conjure you even more powerfully. . . .

We spoke about simplification. How nature wanted to save in the matter of gateways in the body, like a wise architect, knowing that too many doors make thieves. Two ovaries with two oviducts finally terminated in one opening; two male testicles in one male member; two kidneys in one bladder and finally in one aperture. And in the case of the male, this urinary aperture coincided with the opening in the member; in the female, with the orifice of

the big birth cavity. But why did not one more last simplification take place?

Only a tiny distance on your naked human body from the urinal-sexual gateway is another gateway of the lower end of the rump; the anal gateway.

In the female, the situation is so crowded that the two openings are side by side like the lenses in a pair of spectacles. Why was this not overcome too; why not merged together?

You notice that we have now adopted a different sort of questioning. What outbursts of rhetoric we would have if things really were that way in the case of human beings! If the holy grail of procreation collided not only with the urinal but with the evacuation of the bowels. Procreating, giving birth, urinating and now on top of that evacuating the bowels as well, all through the same door. Calm yourself; such is not the case. We simply happened to dig into things from an angle that made the question come up, why it is not the case? The principle of simplification gives us the right to ask this question.

And here we must state that the simple reason why it is not the case is this; that we human beings had already tried it out and abandoned it in our ancestral forms. And that attempt was strenuous enough.

You will recall that the possibility of anal love, of genuine love through the anal gateway, fleetingly appeared to us before.

Where the sexual materials still separate from the wall of the stomach and the stomach became a tube with a front and a rear opening, the anus could be used just as well as the mouth for pouring out semen and eggs. But you know that this stomach love ceases to play any rôle in your family tree, at a very early stage, for the sexual organs establish themselves in the body cavity, which is independent of the intestine, and here they use the kidney and its gateway as exit. This begins with the worms and continues on up into the realm of your more immediate ancestors, the vertebrates. On this upward road you now note an endeavour which belatedly brought the intestinal canal into connection with love again.

The lowest of all vertebrate animals, that famous fish amphioxus, which is practically on the border line between worm and fish, performs a particularly clever trick. In the amphioxus, the kidney as well as the sexual parts already empty quite regularly into a joint chamber which, though it has some other purposes as well, can yet

be characterized as a urinary canal. This common canal, however, opens through slits into the foremost part of the intestine, and the female's eggs as well as the male's spermatozoa float merrily through these slits and out of the amphioxus' mouth. If this practice had gained further currency, urinary love would again have become oral love, and you would to-day have to transport urine, semen and children in addition to air and food for the intestines through your gullet. Those multifarious reasons that spoke against all love via the mouth clearly interposed with redoubled force here, after love and urine were together in addition, and so Mr. Amphioxus has the honour of being the first and the last vertebrate animal literally to love with the mouth.

This method became all the more impracticable as from now on the urinary opening maintained itself with the utmost energy at the rear part of the body in the vertebrates. In so doing, it necessarily came into a certain relation with that other end of the intestine, the anal gateway. There were no sharp teeth at the lips of this gateway, no digestion was starting here, nor did the danger of a downward swallowing movement exist, as in the mouth. It was, after all, just an opening for eliminating waste exactly as was the exit for urine; it was constructed entirely for eliminating matter and therefore it was in many respects decidedly suitable for the urine as well as for the sexual materials (which, through the urine, had become accustomed to waste materials and for the rest were adapted to being expelled as well).

And so we really do experience it: in the case of a large number of fishes the eggs, semen, urine and solid elements all in the end pour out together through one and the same gateway. This is particularly the case with your closer relatives, the sharks. The amphibian, the frog and the salamander knows no other method. All canals in the body wanting to get out at the rear radiate to one and the same focal point: the fat food intestine, the male's urinary canal on each side of it which is at the same time the semen canal, the female's corresponding genuine urinary canal and that separated piece of urinary canal, which transports the female's eggs.

If you want a term for this innovation, you would have to coin one which would bring urinary love and anal love under the same rubric. The scientist offers you a word, even though it is not of the best. Wherever he encounters this union of urinary exit and anus in animals he calls it "cloaca" for short. And so we now have ar-

rived at cloacal love in our text. Animals in this stage, who would love in blue char fashion by bringing their apertures for discharging semen and eggs as closely together as possible would under these conditions simply have to turn their "cloacæ" to one another in the act of love.

From the salamander on up, cloacal love continued to play a decisive rôle for a long time. Every one of the reptiles, including the lizards, snakes, crocodiles and turtles, likewise the extinct reptilian monsters, the ichthyosauri, the fluttering lizards, the dreadful dragons and all the rest received it from the salamander. The bird is simply a highly developed, warm-blooded flying lizard, covered with feathers. And so you find the genuine cloaca inevitably developed in the chicken and the ostrich, the eagle and the nightingale and all the thousands of other winged creatures of field, forest, sea and air; invariably you find the solid egg and the liquid semen, the excrement from the intestine and the urine from the kidney (which in this case is pulpy) all coming out through one and the same big gateway of the body behind.

And only in the mammal does this later come to a full stop. Great as was the triumph of this protective economy on nature's part, happily succeeding in merging all gateways into one, it could not be maintained entirely in this fashion to the highest phase of evolution.

In Australia there continues to live to this day that wondrous animal which we have repeatedly trotted out and which embodies the turning-point to the most brilliant peak of all animate nature on earth: the duckbill. The duckbill is the last relic of the original mammals that are long extinct, and as such it still lays eggs in a way very similar to a bird or a lizard. And in all seriousness the duckbill still has a deep cloaca as well—the only one of all living mammals to have it in this form. Latterly a little dispute has developed among scientists as to whether or not this duckbill cloaca can be placed on a level of complete equality with the reptilian or the bird cloaca, but in my opinion no doubt exists that its external function marks a transition. As a matter of fact, the duckbills are frequently and specifically referred to as "cloacal animals," from which the layman might well draw the wrong conclusion that these little duckbilled creatures haunted the sewers of the Australian farms, like the rats of our big cities; which is something that does not begin to occur to them. Their eggs and spermatozoa float through the

cloaca, which is the combined anal and urinary gateway of their body.

Then comes the marsupial, and there the cloaca comes to an end. All of a sudden there is a fixed barrier, a partition, between the urinary and sexual opening on the one hand and the anal opening on the other. From now on there are two gateways again. And that continues to be the case up to you. You finally inherited it from the monkey. You do not know cloacal love any more in yourself, except in the case of an extremely awkward act of violence, namely, when the wall against the anus tears in childbirth. But that is not normal; it is a pathological exception.

In any event, any attempt to conduct the act of procreation itself through the anus again would have been all in vain. Never again from the duckbill on up did a mammal's sperm-cell normally reach a female egg through the rear end of the intestine. At most, the grotesque phantom of a superficial attempt can be found again in a certain pederastic form of the sexual act.

In occasionally seeking the intestinal way as the sexual road (only for purely sensual pleasure, not in the sacred sense of procreation), the pederast goes back to the duckbill, as it were: the only difference being that what still possesses an important natural sense with the duckbill is perverted to sheer nonsense by the pederast. The attempt to make a love-individual out of two males goes even further back. It extends far down to those hermaphroditic fishes and worms, in which each sexual half was still both male and female at one and the same time, so that a sexual half, which itself possessed male parts, could fertilize the male parts in another body.

In the great upward struggle of mankind, the tenacious roots of pederasty are entangled and ramify far beyond these old reminiscences, however, and only a very superficial observer will want to polish them off entirely with a single echo like that.

When sailors resort to sodomy on a lonely ship at sea, far from all community with women, a second root unambiguously appears, making the pederastic act seem merely a variation of onanism, an act of self-defence where the female is lacking. From this angle it has undoubtedly kept on being engendered strictly logically from time immemorial.

When you again and again find pederastic motives in art at its highest, in the artistically inspired world of ideas of ancient Greece, in the late Roman ideal of Antinous, in oriental poetry, and running

on through the renaissance and modern times, you are led to a root of a totally different kind. Here the pederastic element developed in first line out of a pure deed of distance love. The eye rejoices in the beauty of the male body just as well as it does in that of the female body, and in this beauty it enjoys the higher, spiritualized sensuousness of distance love to the point of a more or less complete harmony in the sphere of absolute æsthetic purification and liberation.

With a new confusion of motives, however, distance love is undoubtedly attempted as mixed love in this case, and thereby the ideal height sinks down to a condition whose harshest punishment undoubtedly consists in the ridiculousness which complete and obvious contradiction between the sense and execution of an action invariably arouses.

Against this it is argued that an oppressively large majority of sexual acts between male and female among human beings are consummated in the clear conviction that a procreative purpose cannot and is not intended to be achieved. But what continues to be only by-play in the case of man and woman, remains a law and declared principle in the case of the pederast.

The infinite agitation of the human imagination, striving to give a variation to what is simply natural and to do so far beyond the bounds of the pathological and the feverish, undoubtedly intervenes from the spiritual side. Independently of everything æsthetic, the increasing complexity of our intellectualized human eroticism with its individual selection, which likewise invariably has a tendency to turn into mixed love, plays a part. And lastly must be added those abnormal variations in the sexual structure of the body, which we referred to above, and which still continue to inject real physical reminiscences of past hermaphroditism in our primitive history every now and again into our living game in individual cases.

For practical purposes, the most important idea is surely that this whole by-way of our love-life (naturally the same thing holds good for female homosexuality as for the male brand) cannot constitute a really growing, cumulative danger for the progress of mankind for the simple reason alone that all love, from which the sense of procreation is wholly and permanently excluded, kills itself in the long run. In everything homosexual there lies an inevitable principle of sterility, of impotence really to continue and carry this through as a tendency of the whole human organism by heredity and the breed-

ing of permanent variations. As against which, healthy nature in us continues to come through and breed on with triumphant glory and a force that cannot be fooled, and does so in all elements of mankind that normally love double-sexually, no matter how many sexual acts go astray and are lost to the purpose of procreation.

Meanwhile, the "zoological reactionary" lurking in the pederast as well as the onanist remains of interest more specially for the form of the matter in that fish and duckbill sense. He shares the tragic and tragicomic characteristic of all reactionaries.

But why was the cloaca abandoned again after all, after it had been so energetically constituted within the evolution of man's ancestors?

You might think that it was due to the tendency, which was becoming increasingly strong again, of separating sexual work and the expulsion of fæces entirely on this last common meeting ground. Something special, which combated this intestinal connection, must have played a part. And as a matter of fact we see several motives at this stage of evolution.

On the one hand, that last animal in your family tree which still habitually practices cloacal love is at the same time the last which still lays eggs. Right above it starts the practice of bearing offspring that are ever more mature—the great specialty of the mammal between the marsupial and you. A totally new task was suddenly imposed on the female sexual apparatus, which was bound to result in thoroughly transforming the latter again. Perhaps that alone is reason enough for raising the gateway question once more. It now became a question, not merely of thrusting out the young at a certain definite time as once was done with the fish or salamander egg on, but above all of maintaining it in the interior for a longer period of time and not exposing it to expulsive movements during that time. That alone was an argument against the connection with the extreme end of the intestine with its daily rude expulsions, and in favour of an independent exit. This evolutionary process would therefore have been initiated on the part of the mother animal, and the father would simply have trailed along by way of heredity. But in the case of the male mammal a totally different and much surer road must already have led to the same necessity of separation; namely the ever more ingenious development of the organ of copulation.

With it we touch a new thread of our narrative.

Hitherto we have been speaking only of the door. We all the

time tacitly assumed that the blue char method of gateway turned to gateway was the prototype of copulation. We saw how this gateway changed in serial order. Mouth gateway, belly gateway, urinal gateway, cloaca and then urinal gateway again. From the stadium of a simple door opening it entered the stadium of the joint. This brings us to the member question.

§ 8

Plain speaking can cause Houri no vexation:
We feel what comes straight from the heart,
And what in fresh springs has its start
In paradise is delectation.

GOETHE (*Book of Paradise*)

A pilgrimage to Italy. What was the mighty magnet that drew you there? That still makes your heart beat to-day when you hear the word? Landscape, living beings and their customs. But, after all, you can find all of that elsewhere. Nature is everywhere an eternal Jerusalem, and every step to south or north in nature is a crusade. There is something special about the pilgrimage to Italy.

You enter the society of certain men and women who never lived and who yet keep on producing a more vital effect than millions of the living. You enter the company of man in a higher story. You become the guest of man as art saw him; glorious human bodies created by painters and sculptors.

Suppose any one were to look with scorn upon the human body. All they of the great age of Greece down to Michelangelo knew of nothing better that they could hold fast in marble and colour, knew nothing better that they could transfigure and spiritualize than this selfsame body. And it shines upon you with more spirit than all your living fellow men have put together.

Naked bodies look at you. The higher the art, the franker, the more uncovered are they in their nakedness. It is as if you were in a world warmed through and through, flooded with sunlight and become paradisian again, no longer needing clothing that covers, that artificially heats and that serves a pressing need. And yet, you have a strange experience here.

You become aware of grotesque tin fig-leaves that have been put over a certain part of one of these marble male bodies. In the midst of the eternal glory of a painting by the divine grace of the artist's imagination, like the "Last Judgment" of Master Michelangelo, you see such places daubed over by a bungling hand, unspeakably

crude, with blots of colour that are supposed to represent a garment. 2

The particular formation of the human body, which we are now to discuss, is involved.

You smile. Amazing humanity. So rich and yet so poor.

It will not be easy for you to find a second moment, in which you feel how difficult the way to the light still is. How has not art preached from time immemorial that everything belonging to genuine art must be clean in its nature. That art does not reproduce things in themselves, that it does not duplicate the kingdom of this world. That there are no profane places in it, worthy of being covered up. That what has become genuine art cannot approach vulgarity. It is naked, because it is sacred. But so terrible was the fear of the actuality of things at this spot, and so boundless, that it again and again invaded even the temple of art. How infinitely difficult must it be to find a standpoint in front of the naked human body, where the calm of spiritual transfiguration reigns to the point that the eye can look upon the uncovered, actual sexual member with calm senses just as long as it wants to; for as long as a big, general consideration of the subject makes imperative. There is only one rock here on which you can support yourself. That is the idea that reality, too, has a depth, where it becomes sacred; that it is sacred in its true depths.

Do you still remember the dear old legend about Melusine? She surpassed every human female in beauty and strength. But it was inevitably written in her stars that once a month she had to feel the old fish-tail of a connection with a lower world in herself. And then she concealed herself in a barred and bolted tower, like a penitent sinner. A dull Melusinian fear still dogs us all. A tin fig-leaf, which has gone astray over a male member solely employed for artistic purposes in a creation of Michelangelo's, is the bolted tower of mankind. And to our crude interpretation, this member itself is Melusine's fish-tail. The artist might have harmlessly represented Melusine, too, in the semi-fishhood of her bad hour. But she would have felt ashamed, she would have shuddered at herself. And so in its own innermost self, the sense that created these fig-leaves still feels itself crucified at this point as the blemish of its supposed baseness, its "animality" in the common, derogatory sense of the word.

Yet it only needs a hearty coming to one's senses, an awakening out of old dreams and phantoms, in order to gain clarity about the

fact that things are not at all that way in the actuality of our human nature.

Strange twilight wanderings. Man does not want to let the organ, which indubitably was decisive in his eternal progress to the light, count here. He shies at the sight of it even in the ideal form created by the greatest master, as if it were a Gorgon's head. In reality, mankind mounted through the endless stream of the ages on this piece of cell tissue, which the marble symbolically reproduces in the form of warm living humanity. Herein lay the immortality that kept on producing one animal after the other with ever more powerful incantations until finally the poodle and the hippopotamus burst behind the stove of the cosmic Faust and man leaped out. Here the golden rope of the Parcæ, in which every knot is a soul, was continually slung and intertwined. Here soul after soul handed on the evolution that had been achieved, first super-animality, mankind . . . then the traditions of civilization, of universal knowledge, of technology, of ethics and love of mankind. This Melusinian tail was in truth the earth, to which Antæus eternally returned; the tenacious root which kept on boring down into the sacred ground where Urda's spring gushed around with each individual.

Our discussion so far has sufficiently shown us that this member has a past as well. It is a Melusinian member. With it, man turns off at the fish from which he came in purple days. But there is more to it. In it lies the entire upward road of evolution to man, the crown of all. Think of the mysteries of the chromosomes that are back of this member. Think of the whole universe of miracles wandering through here with its myriads of little cell motes, as silvery systems of stars wander in boundless space like distant little clouds of smoke. The picture of man was slowly, slowly caught up, summed up and registered in these inconceivably tiny chromosome specks. Every step forward once gleamed here like a doubtful little flame . . . will the wind suddenly blow it out or fan it to a bright flame . . . ? All humanity's geniuses once slumbered here, ready for resurrection. Behind this member the dice were shaken for your existence and mine and that of all of us. . . . Dark powers of fate in the form of mysterious laws of heredity and new formations here sat in judgment upon you before you existed and drew your luck and your destiny out of the big urn. Truly, if you lift up your eyes to this height, I know of no place where the thrill of

the sublime in the universe could quiver through you more than here. In moral law and in the starry firmament. So says Kant. This is the third primordially tremendous place.

If you find the strength in yourself to follow these associations of ideas beyond all the narrow-minded and poor show of fig-leaves in commonplace existence, you will be able calmly to look into the great open uncovered face of nature in the actually naked human body as purely as if you were gazing at the constellation of Orion on the silent nocturnal sky, which does not move your little hopes to sudden fright but lifts up your soul into the council of the cosmos itself; as purely as if you were looking upon an ethical deed that excites you in no other way than to an honest feeling: that is good. In that case, your perfectly unprejudiced view will be chiefly attracted by two focal points of the body. By the forehead with its two heavenly lamps, the eyes, behind which dwells the eternally onward procreating spirit of the universe in human form. And by the sexual member, behind which the perspective of the æons of eternal generations loses itself in the boundless blue of cosmic succession in time. Goethe's eyes, for instance. And the male member of a healthy human being, in which strength wanders on to conquer in Goethe's name, to build further on Goethe's work and to surpass even Goethe one day, so that the eyes may again shine from still higher stars. . . .

This conception of things does not menace chastity; not noble and genuine modesty. Though it must bring about a fundamental change in our whole appraisal of the fig-leaf question. There is no thought here that the mystery of procreation as a human act should be dragged out openly onto the public highway. Just as little and even much less than the mystery of a Beethoven symphony can be dealt out and enjoyed otherwise than by a few in the closed consecration of feeling and place; just as little as the spiritual act of procreation in the poet's imagination can take place otherwise than in the utter silent detachment from the world, as if the world had died out, the isolation of one who looks into himself; just as little as the innermost moment of comfort that comes with wrestling for and gaining a philosophy of life can be experienced otherwise than in the solemn silence of the chastely secluded heart . . . just as little will this deepest mystery of mankind ever lose its sacred solitude, the solitude of the double human being merging into the love-individual and in so doing feeling the presence of any third party as the profanest kind of disturbance, because in that moment it feels as if it

were all mankind and cannot bear any strange individual human beings beside itself.

Boundaries and boundary marks must also remain set between the will to eroticism and the purely social and civilized and spiritual factors in human life and human intercourse, in which that great intimate content of existence does not come into question. The old true saying of the preacher Solomon holds good here too: there is a time for everything. For our civilized epoch at least, certain peculiar evolutionary connections with the fact of our artificially clothing the naked body, which have worked to confuse the ideas of unclothed and of erotic with one another from the earliest days of mankind, must be added. There are no eternal moral norms in these things, to be sure, but, as in the case of so much in our nature and in civilization, there still are in them highly important historical traditions, which we could escape from only very slowly by further evolution. The problem of clothing and nakedness will occupy us in detail in the course of our discussion.

But all this signifies absolutely nothing against the one decisive point. In all its solitude and behind all its veils the erotic element is not something bad in itself on that account; it is not a secret Satan in man up to its spooky Melusinian mischief behind our spiritual clarity and which one conceals because it is a horrid, secret fish-tail.

We must maintain as our highest moral conviction at any price that this solitude never under any circumstances signifies the isolation of badness, of indecency, but the sacred solitude of one making a sacrifice upon the altar of humanity.

A fatal chain of errors. A veil was drawn over this special thing that was reserved exclusively for a special hour, over this sacred thing, this superhumanly great thing, to keep it from profanation. And the belief came to live in the profane crowd that the veil was drawn in order to cover up something that was in itself eternally indecent, worthy of being timidly concealed like a nocturnal crime against the law! Everything that called it to mind if only as an external symbol, everything that showed here and there through a rift in the curtain in the form of an individual ray of light, fell under the ban of unfettered indecency. The holy curtain in the temple became a jail, in which the unclean spirit lay in chains, in order that it might not poison an innocent world.

This tendency repeatedly recurs in the history of religion. Opinion turns secret cults of the utmost purity around into horrible orgies

of the devil. The chaste sacrifice of spring in the mysterious May wood curtained by night becomes a ghostly debauch of witches, shunning the light of day because of its uncleanness.

The noble doctrine of breaking bread with the poor and holding out the promise of brotherly love to those that are heavily laden was itself regarded and combated thus in early days.

We must finally put an end to this error about sexual love once for all, otherwise we shall block our own road to any serious understanding.

Only then may we hope to find a really unprejudiced and clean standpoint during the moments when a certain unveiling of these things, at least in their representation, is in order and when an excessive amount of timidity might cramp values of our highest spiritual life, whether of an artistic or philosophical nature, that must not be hampered. We shall say to ourselves that concealment too has its limits.

There is already *mene tekel* enough in that example of a misunderstanding which seeks to curtail our sight of our own naked body even in art and already wants to draw the prison walls around it there; that would like to put the fool's cap and chains and the accursed insignia of witches' revels and indecency even upon the ideal resurrection of this body in the openest æsthetic light of the spirit. If the marble male member of an eternal creation by Michelangelo may no longer be seen with clean eyes, I ask myself if the lovely little child on the mother's arm ought not likewise to be concealed as immoral and be painted over in thousands of immortal works of art. For the symbol of the act of love is in it exactly as well as in the male member. And when you have covered up the child and swathed the mother till above the breasts in formless drapery, you must in the end draw a last veil over her face and her head. For woman's hair has deep sexual associations. You must cover up the flowers that rain down on Botticelli's lovely goddess, because they are procreative organs. You must blot out the golden sun, because in the final analysis it is the all-powerful male member of our planetary system, which has procreated you and all life with the moisture of the earth from the primordial beginning of days. If symbols are to fall, the universe will fall in the end.

What holds good for art, however, holds no less good for philosophy, representation for the purpose of forming a view of life.

But these crooked attitudes will fall of themselves one day, like

the colossus standing on feet of clay; and if all signs do not deceive, we are already living in the beginning of the end.

I believe in a future epoch of ideal rehabilitation and thorough transformation of the whole conception of sexual indecency from this very standpoint that the veil does not conceal a matter which in itself is indecent in its sense for the universe and humanity, but something which according to its own nature is sacred.

And I shall by no means just play the proposition at this point: *Naturalia non sunt turpia;*—nothing that is natural is base. The harm which man does to himself and to society in any given case is natural too. He likewise acts naturally who treads something that is holy into the mire. Here the natural value, the value which its creator puts upon it, through which alone mankind exists, is involved We are in the dark. No star shines for us in the ultimate mystery of things. We do not know why anything is. Why evolution, which led to us amid infinite pains, was planted. But we do know that things are struggling to the light in us, whose success is the highest that we know, on which all the longing of our soul hangs. In the broadest sense, it is our civilization itself, our ideal humanity. And we know that there is only one road for our longing to go along amid the immeasurable collapse of individuals, the falling sheaves that incessantly rattle down under the scythe of death, the utter darkness that broods over the further cosmic fate of these mown sheaves for our certain knowledge. That is the road via new human sowing. The road that runs over procreation of human beings in the form traditionally given us. All our hopes, all our ideals lie in this sowing. An element of faith may lie in this hope of civilization. Reason does not solve everything as yet. But the best among us have always acted in this belief. If our reason cannot prove it entirely, yet one thing is sure: belief in civilization, even in its simplest form, would become utter nonsense if you took procreation out of it. It alone makes faith in civilization possible. And faith in civilization consecrates procreation.

I believe with ever stronger confidence in a future epoch in which this simple thought will triumph completely despite all fig-leaf fanaticism.

I believe in this victory as a simple logical consummation, whose germ already lives and must live in the heart of every genuinely clean and chaste human being, because certain very simple truths that are going begging, certain facts of knowledge, can no longer be

permanently covered over either with rags or with garlands of roses. This rehabilitation of something "indecent" into something holy in the heart of things will also represent a totally different weapon against all real "immorality"; you can even say that it will prove to be the first perfectly practical weapon at all. By setting out from the sacred element in the act itself, as from a strong citadel, and from there measuring and spurning coarse profanations. While our present-day fight against immorality is still chiefly a concealed fight against the very thing which one has not yet learned to regard as the highest and purest mystery of mankind in maintaining itself, but still looks upon as weakness, baseness, a sort of cursed deviltry even, worthy of concealment.

Meanwhile the evolutionary conception of the origin of things will prove a stretch of road to understanding.

When it rains on him, the New Yorker gets wet just as well as the South Sea Islander does. But the rain cloud over both of them does not need to be the same one on that account, nor does the New Yorker have to be a Samoan. Entirely in the sense of this simple proposition, the same organs have been formed at totally different times in totally different places by animals of extremely different kinds. The same bodily "invention" was made so and so often, depending on the rainfall of external necessity. The snail, the insect and the fish crawled out of the water onto land at three fundamentally different corners of animality, and under the compulsion of "air" all three developed lung-like, air-breathing organs. Wings were invented independently by the bird, and likewise by the bat, the flying lizard pterodactylus and in a somewhat changed form but with the same performance by the butterfly as well. The need for light created regular eyes in so and so many animal groups that were as far apart as heaven from earth.

In this sense, the copulatory member, too, is a collective product. Wherever the need arose in the strictly separated great animal races of making copulation as close as possible, a similar formation made its appearance. The sexes became nailed together in one another momentarily, and this member had to supply the nail. The remaining distance into the female body was shortened for the act of mixing, and at the same time a mechanical support was furnished for the big procreating cell bodies during the act.

This fundamental mechanism was too simple not to result hun-

dreds of times exactly as those two widely separated humans got wet skins when it rained. And so you already find a male member in all manner of invertebrate animals. You remember the snails, about which we spoke before, and the insects and certain worms. In the cuttle-fish, which is nearest to the snail, an arm, literally a member, had been transformed into it. And the spider even performed this function with its jaws. All these separate methods, however, do not interest us any further. From now on we are engaged in the search specifically and only along the human line from the fish upward. How the matter was "invented" along this evolutionary line applies to us and directly explains us; and once again it will explain human "absurdities of love."

As a matter of fact, this organ had to be invented all over from the very beginning in the vertebrates from the fish on up—in the human animals, as you might say in a historical sense.

The wonderful fish amphioxus, this gate keeper of vertebrate animals, does not show the slightest trace of a copulatory member. Since it spits out semen and eggs through the mouth, its mouth would have to be transformed for this purpose, if it were to have one.

But in the lamprey, too, where for the first time you find genuine sexual gateways at the rear end of the body, there is not the slightest means as yet of fastening together these sexual places as such. And this continues to be the case with a vast number of higher fishes as well. What should they have a member for, since "copulation" still consists of two totally separated acts at the love-pit, as in the case of those trout and salmon? The female lays unfertilized eggs in the pit, and only then does the male pour semen on them. But you could understand that it would have a purpose in the case of those blue char, that execute their love leap body to body, discharging their sexual substances at the same time. Even if the member merely furnished a support, a first perpendicular between the two parallel lines as the crudest kind of fulcrum.

You now see how nature frugally begins to experiment with what she already has. Before a new member, a special "sexual member," is developed, the attempt is made to see if the thing will not work with members that are already on hand.

The mouth once more becomes important in first line. From the lamprey on, the fish-mouth was a very energetic organ, better

and better constructed for seizing, holding fast and biting. The lamprey already has teeth at least. Then the shark already has these teeth set in uniform jaws, and we know how it can take hold with them. Why not utilize this ability to clamp fast in biting for the act of love? Once again something that has to do with eating is used without a scruple for love.

The lamprey, which has no actual biting jaws in its mouth as yet, is not able to bite with its mouth, but it can suck fast. It presses its little mouth on the object to which it wants to stick, as if it meant to give it a passionate kiss. As a regular thing, this kiss is the diametrical opposite of love. As a plague of the most horrible sort, one of these wormlike little creatures wriggles under the belly of a much bigger fish. Presto! It has kissed; meaning that it has sucked itself fast, at a place which the fish itself cannot reach, like that famous spot on Siegfried's back which he was unable to anoint with dragon's blood and which proved the death of him. A bitter kiss. Just as coy little girls do not know yet how to kiss with amorous softness, but sink in their sharp little teeth, so the lamprey's kissing mouth gives the poor fish a taste of something like a rasp which attacks its skin. It is the dear little lamprey's teeth, for it wants to eat, not kiss. And so the rasp very leisurely rasps through the scaly covering, the skin, and the meat of the muscles. The kissing mouth dives deeper and deeper into the unfortunate fish's body; the lamprey eats a regular tunnel into the other's body, till the whole mountain dies, martyred to death.

It is obvious that an animal which was able to kiss itself fast to its foe in such finished fashion, so that it could not be shaken off again, also knew how to kiss the love-individual together. As you know, in addition to the Spree, Berlin has a mysterious subterranean river, which winds under the streets and houses of the metropolis like one of those black waters in the grottoes of Adelsberg: that is the Panke. The lampreys' love-game was first observed in the Panke. The lampreys make a love-pit. Incapable of fanning the sand with fins in trout fashion, they lift out the pebbles by kissing themselves fast to them, and in that way they make deep hollows in the bottom. In this hollow, however, they consummate a much more regular sexual union than do those fish which otherwise stand higher in the scale. The male sucks itself fast to the virgin's neck, naturally only with a genuine kiss this time and with none of that dangerous rasping business. Then the eel-like bodies

twist around one another like a pair of stockings blown around on the clothes-line, and the milt squirts out on the eggs at the very moment when they drop out of the female's sexual gateway.

When your ancestors acquired genuine jaws at a stage beyond these uncanny kissers of the Panke, this sucking method automatically came to an end. The matter was now tried out with the jaws. The sucking became a blunt bite as a means of support in sexual intercourse.

Among those magnificent Chinese fish with huge fins, which come to adorn our aquariums in the last thirty years despite all traditionally famous gold-fish, the partners in love seize one another by the lips with their jaws in the prettiest fashion during their sexual play and they continue to see-saw and frolic around until the female's belly has squirted the eggs upward and the male has poured the pollution of its semen downward on them. Although the bite of love is meant to be blunt, yet many a lip is torn to shreds; a proof that such sharp knives as the teeth were not the proper means of support for passionate games of this sort after all.

It is interesting, however, that this practice on the part of the partners of clamping themselves together by means of biting continues to return occasionally till high up in the world of vertebrate animals.

The best known instance is in the case of birds. Here the copulatory member has remained imperfect or is entirely lacking in many cases. But in return for this, the rooster at the critical moment seizes the hen by the scruff of the neck with its bill like an insane creature, so that you think it wants to devour the hen, and does so with a force that makes a few feathers fly nearly every time.

And there is no doubt whatever that certain reminiscences of sucking in love and biting in loving still exist even among human beings. You know Heine's wonderful poem, the "Battlefield of Hastings." The naked body of the fallen King Harold can not be located among all the dead. So beautiful Edith Swansneck, who was his beloved, is summoned. And she recognizes the king:

Upon his shoulder she also spies,
And covers them with her kisses,
Three little scars, burning monuments which
She once bit there to love's blisses.

You need only recall the little violet tokens of love on a small white neck in order to find the lamprey again in man. One of the simple, evolutionary roots of the kiss undoubtedly runs back to this point, although in our case the mouth has become connected with too many other things for it still to mirror clearly any particular ancient characteristics whatever.

But it is immaterial how high up in the animal scale reminiscences of this practice of clamping fast with the mouth may extend; in addition to this first clinging organ, the mouth, the vertebrate animal's body very soon received further vigorous clamping possibilities in the fish stage through the first development of actual limbs. They first make their appearance in the shark, in the form of two pairs of fins on breast and belly, the original stage of the four later legs in reptiles and mammals and of our two human arms and legs as well.

That dancing posture is the result. The little fish take hold of one another with their fins. You can follow this line perfectly as an external auxiliary principle up to yourself. The fins became limbs for locomotion in life on land, they became highly developed legs, paws, claws, toes, and fingers, a whole arsenal of clamping organs in short, which was bound to prove of service to the act of love.

In the amphibian, the salamander, frog and toad, which in most cases already possess very well developed land legs and feet instead of fins, but which do not yet possess a special copulatory member, you see the most brilliant attempts in this direction. The little toads with the little white necks in the puddle over there are already veritable past masters of the art of holding fast with the legs for sexual purposes. Or with the arms, to put it better. For their short forelegs work exactly like arms. The frog and the toad have no tail behind, and therefore they can not only place themselves close together belly to belly, but the male can also place itself on top of the female. The eggs come out behind, and the semen which likewise spouts out rearward falls on the eggs from above. The arms of the frog Prince Charming serve for holding fast. In a jiffy he is upon the princess, seizes the maiden under the arm-pits with its two forepaws or around the round body at the groins, and for hours, days, occasionally even for more than a week

forms the most substantial sort of a love-individual for the purpose of mixed love.

The male's strong arms at the same time take care of a second matter, which a human male would not exactly be likely to think of at such a moment; they perform the service of a rough and ready midwife. Crammed full of eggs as the female is, it only requires this pressure of male hands under the arm-pits or over the groins in order to have the thick jelly-like mass of eggs or the long strings of eggs automatically delivered. As soon as the prince notes that they are coming, he lets his semen drop on them behind without letting go in front.

It cannot be denied that this method with all its pretty seizing and holding fast keeps a violent character. Many a poor frog and toad princess is pitifully squeezed to death in the long act by the embrace and simultaneous massage of her lover and male midwife. Nevertheless, the practice of clamping fast with the arms continues to recur above the frog if it was in any way necessary, and this even after the actual joining together of the two bodies by means of the real copulatory member had long been invented. You yourself still use the word "embrace" as a mild term for the act of copulation. And when in the case of man the whole concept of limbs once again took on more concrete form and became spiritualized in the most glorious manner in the "hand," this veritable prime minister of the brain was given an important part to play in the supreme act, by helping to introduce the member into the gateway; a first trace of spiritual domination of the act itself by the brain, by consciousness, toward which no field of the body is otherwise more independent and autocratic than this.

Nevertheless, all these different coupling methods, ingenious as they might be, in the end simply circled around the purpose like a cat around a dish of hot food.

If I am on board a pitching, tossing ship and want to pour something out of a bottle into a glass, the first fundamental prerequisite is certainly that I should bring bottle and glass as close together as possible with the help of my hands. But at the decisive moment, something more is necessary; I must bring them "into each other," at least so far that the neck of the bottle touches the mouth of the glass and goes into it a bit. Only in that way can I prevent

every movement of the ship from splashing the liquid outside the glass.

And so nature's highest trump had to be played after all—a special member expressly for sexual purposes. A copulative member. The following was the ingenious road leading to it.

At first, nature tried again with the old principle of saving, starting with what was already on hand. The fish had its members of locomotion, its fins. Could not a fin directly enter the service of the sexual act, beyond facilitating the body's dancing position?

Imagine this in your own case. One of your genuine limbs is to play the rôle of a male member. Your legs are nearest to the semen opening. Therefore simply imagine that the semen tubes ran internally into your thighs and on down to the knees. And now for the act of copulation you were supposed to bend your knee and press into the female gateway with it. At that very moment, the semen would squirt out of you and into the gateway.

Numerous fishes actually tried the matter about according to that method. Several kinds of carp have one locomotive fin too many, the so-called anal fin on the belly, which they very neatly transformed into a "copulatory leg." The semen conduit comes out of the body, enters the rowing ray of the fin that is farthest in front and empties out at the tip of the fin. When this fin is forced close to the female opening during the dance of love, it serves in all seriousness as a male member. Sharks have even gone so far as to utilize the genuine ventral fins, the original forms of our real human legs, in a similar way, and they therefore regularly procreate with the legs, just as you would do in that imaginary case about the knee. A part of the ventral fin is separated, and by an ingenious transformation of the original rays of the fin, it is turned into a thing that looks, when not in use, like an umbrella that is closed up. Thrust deep into the oviduct of Mrs. Shark during the act of love, this umbrella is put up as far as possible inside there by means of a special muscular apparatus, and it thereby spreads the oviduct apart, making the widest kind of a course for the stream of semen.

This again proved to be totally untenable, and you can guess why. The fish's loose fins gradually became solid members on the rump, with a thick bony apparatus inside, on which the body could support itself when it settled down on land. These limbs became

better and better as general clamping organs, as the frog shows you. But the further this development went, the less feasible was it to introduce such delicate internal systems like the whole semen apparatus permanently into these rigid pillars and hooks. With the number of genuine limbs limited to four, that posterior fin of the fish's dropped out of sight entirely and for a long while things were just as if that early fish experiment had never taken place. The frog and the salamander know absolutely nothing about it any more. And when they or their successors felt a renewed need for a special copulative member, they had to begin the whole evolutionary experimentation all over again from the beginning.

You must recall something of the utmost importance that had happened in the meanwhile.

Your ancestors crawled out onto the land, and from being fish they became four-legged land animals in that particular stage where urine, excrement, semen and eggs all consistently came into the world through one and the same opening, the posterior outlet that was called the "cloaca." To construct a copulative member at this stage of your origin, therefore, meant to construct something that started from the anal gateway of the male and wanted to get into the anal gateway of the female.

An "anal member" was the only prize problem of evolution which could be proposed and solved for the present as matters stood.

You have absolutely nothing of this in the case of the frog and toad, as was said. The eggs drop out of the anus and the semen drops out of the anus. But both meet each other only externally. On the other hand, in the closely related salamander, on the tailed side of the amphibian tribe, certain instructive experiments are already beginning with the aforesaid anus, as if something were going to come of it. You have salamander females that execute a kind of sucking movement with their anus. In a certain sense you can say that they practically eat the semen with their anus. Their male salamander supplies them with this semen in handy packages after the fashion of those semen cartridges, about which we spoke before in the case of the cuttle-fish. After a certain amount of amorous play, these packages, each one of which contains a good-sized portion of semen in a jelly-like mass, are automatically discharged, just like the milt from the male fish that are in love. At this time, however, Mrs. Salamander has produced no eggs on the spot outside, in fish fashion; her entire egg pro-

duction is still lodged deep inside her body. So she swims after the male, plumps herself down with the anal gateway on one of these little masses of semen jelly which the male has left behind, and pumps the precious substance into her own anal gateway in sucking fashion. Inside there are deep pockets in the anal chamber in which the semen finds a lodging for the present, after the manner in which the drones' semen was taken up in the queen-bee's famous semen savings bank, about which I already told you, too. From here, the female's eggs are fertilized when required in the interior, as they mature and finally emerge. In the case of our beautiful, yellow-spotted fire salamander, the famed old animal of heraldry and alchemy, this reserve semen can live merrily on for a year and even longer in the female and continuously do its duty. It is not easy to find anything more unbelievable yet true than this pumping feat which simply turns the anus into a sipping mouth for the great moment of love, in the extreme inversion of all its customary uses.

But in individual cases, this fine fellow and true king of its type just as unconcernedly transfers its nuptials onto the land. One of its varieties (the so-called black salamander of the High Alps) habitually scorn water so completely that it has even emancipated its tadpoles from the water: they pass their entire gill stadium in the womb (it has become their puddle of water; recall what was said before about the sperm-cells!) and they are already born as finished air-breathers. Incidentally, those that actually do mature feed during that period on their own egg brothers and sisters which have lagged behind in development, which is again a pretty contribution to that theme of the struggle for existence before birth. Clearly in order properly to execute that feat of anal swallowing on land, without the auxiliary facilities afforded by water, you see these little pairs of salamanders trying out the most complicated ways of bringing their bodies together. The male salamander does not place himself pick-a-back on the female from behind in frog fashion, but clings fast to the female's belly lengthwise, as Ulysses clung to the Cyclops' ram. And just as that patient animal dragged along the inventive Greek, so here the female drags the male around with it for days, until their gateways come together as closely as possible and the swallowing trick succeeds in its objective without risk of loss at the supreme moment.

Once it is narrowed down to this, the act may run into numerous further variations, as you can well imagine.

If originally only the female opened its receiving anal gateway as wide as possible, like a mouth eating, certain salamander males for their part now stretch open their giving anus still more violently, till the possibility arises for it to surround and grasp the female anus. The matter seems here to be in a fair way of achieving the diametrical opposite of what you with your human talents consider to be a matter of course. Instead of the member entering the sheath and being seized by it, the male organ might here be shoved around the protruded female opening like a coffee cup. But this remains only a leap to one side, of no importance in the fire of experimentation.

Then you have a small, third company of amphibian-like animals which are neither frog nor salamander. They live inconspicuously in tropical countries, burrow in the damp ground like earthworms, and as a result of this mode of life in the dark ground their eyes have become so stunted in development that they are actually called "blind burrowers" in the vernacular, alias cæcilia. The cæcilia stands in the same relation to the salamander as the blind-worm to the lizard; it has put up its legs entirely, wriggles along like a snake and is such a unique creature generally that its connection with the salamander as well as the frog is close to the border of the problematical. Possibly there lurks in it the poor straggler of a very ancient race of giant armoured dragons, which were on the border between the amphibian and the lizard in primeval days and which are called labyrinthodontans, because a cross-section of their teeth showed a regular labyrinth of inner folds.

Despite their snake form, the aforesaid cæcilia have no tail of any kind, but the anus is placed exactly on the posterior tip of the body. Since this anus is at the same time a genuine gateway of love, our blind burrowing friend pushes out the wall of its anus in the form of a long pointed cone, till the anus itself looks like a genuine copulative member. And this it now thrusts deep into the anus of the female burrower, as a really ingenious pederast, in whose case the matter still fulfills its genuine purpose.

Prettily thought out; but just an experiment and nothing more. And the amphibian never got any further. As the batrachian is replaced by the reptile in your chain of ancestors, it is this reptile which first opens a new chapter on the member question.

Of the animal notabilia, the lizard, the snake, the crocodile and the turtle belong among the reptiles.

The reptile took over from the cæcilia the fundamental solution that something must unconditionally be pushed forward from the direction of the anus and pressed into something. But it no longer likes the idea of protruding the entire anus. And so the lizard and the snake continue to experiment. The male lizard no longer shoves its entire anal wall out and into the female anus, but within its anal cavity it presses out just two specially prepared places separately. At the moment of love's extremest excitement, these grow out of the big male anus like a little pair of opera glasses; two plump cones, whose points are blunt like the finger of a glove that is turned in at the tip. Each cone has a small notch on the outside, down which the semen drips on both sides. The performance is something like dipping two fingers into a pot of honey and letting the honey drip down on a piece of bread.

At the moment when these two fingers bore hard into the female anus and the opera glass fits as if into a case there, the procreative joint is already a splendid one.

The two male tubes even develop spines and warts on the side that is pushed forward, making it impossible to unfasten the lock temporarily. As long as they are excited, these good friends stick in one another like burrs. You would simply tear in pieces many lizards, as for example the scheltopusics which resembles the blind-worm, if you wanted to separate them by force while the opera glass is still in the case. Common vipers lie from evening till morning knotted together, and if you disturb them and they want to creep away, the larger of the two drags the smaller one along by the anus that is doubly nailed fast.

And so the big problem would seem to be solved here. But if you look closer, you will see that it is not the solution, at least not for you as the highly laudable final product of the line. Here two blunted male members, merely dripping externally, spiked and armed like hedgehogs, come out of the depth of the anal gateway on demand. But that surely is not you, no matter how tightly the lock already closes.

Experimenting did not come to a standstill here. While the lizard did it this way, already progressively, another reptile, the crocodile, succeeded in doing it in a somewhat improved form.

At first, the crocodile merely developed a single copulative finger

on the rim of its anus, but an even more substantial one; a small, very solid continuation of flesh, a sort of wart. In its unexcited condition, it lay there quietly bent back like a little knot of piles. But when the blood rushed to the crocodile's anus, so to say, in the enthusiasm of love, this little wart swelled up into a stiff cone, as if it were in an enraged turkey-cock's throat. The crocodile is a wild fellow in the frenzy of love. It hurls its female roughly on her back and presses belly against belly. Plump as it stood, the full-blooded cone at the male anus was thrust into the female anus. As the flood of semen came welling along from both semen production places within the anus, it became manifest that the crude plug had no canal inside it for squirting out this united wave of semen, but it only had a little gutter along the outside and the splendid little stream of life shot down through this deepened gutter straight to its goal, Mrs. Crocodile's anal cloaca and the opening of the egg canals there.

The matter was not quite so hermetically tight as in the case of the lizard's opera glass. But it had the advantage of being simplified. Instead of two members there was only one. The old fish principle of the fin along which flowed the wave of semen had in a certain sense been resorted to once more. The wart which could be erected hung loosely at the edge of the anus, like a little fin that could be drawn in at pleasure or, still better, really developed now into a procreative finger that was sometimes thinner and sometimes thicker but always fleshy. All the honey ran along it alone.

You have had to stomach many a strange collection of ancestors. Now the lamprey which you eat, and now the shark which would like to eat you. So give a welcome to the uncouth crocodile as a demi-god in your course to the light. This simple guttered plug at the crocodile's anus is really the genuine original form of your own member. Incidentally, the turtle has it exactly like the crocodile, and since these two reptilian forms are already very old geologically, it was manifestly worked out at a very early time. This anal cone for the first time points like a compass to you as the pole.

Still continue to bear the difference in mind. A solid fleshy plug which is erectile by congestion of the blood in the intoxication of excitement hangs at the edge of the anus. The semen runs along it in a little gutter during the act. Only the semen, by no means the urine as well, runs off on it. Now as before, the urine continues to pass through the big anal gateway totally unconcerned about the little turkey-cock plug in front there.

There clearly are still some important stations between the crocodile and Doctor Faust.

Here we must interpolate the fact that the birds are a side branch from the reptiles in the vicinity of the crocodile and the turtle. Most birds, as it seems, subsequently renounced any sort of a copulative member at all. Perhaps this spelled a triumph of gymnastics in their case. Light as they are, suspended in the air, accustomed by their aviation to the most daring positions, temperamental and at the same time epigrammatically swift in all their movements, any sort of more substantial joint and lock in the act may have seemed superfluous to them. After all, a Ulysses shoots his arrow through bundles of twelve axes purely by virtue of the great versatility of his eagle eye, figuring everything out in advance. When one watches two little birds, swift as lightning and betraying an adroit virtuosity in their behaviour, one suspects that they do not need any member. The wave of life flies in like Ulysses' axe.

There is a goodly spot in the Mark of Brandenburg. Watery meadows round about, green when the reeds swell high, and golden when the caltha blooms. Above the village rises a sandy hill, here covered with softly humming tapestries of rye above which larks whirr, there bald and hollowed out like a crater on the moon; a spot commanding the finest view for miles around. The name of this spot is Gosen, and it was founded as a silk colony by old Fritz. It really is pleasant to be here, even if the place does not flow with milk and honey. There still is no railroad running here; merely an old rumbling stage-coach coming from Erkner. All the houses have green moss-covered roofs surmounted by Wendic crosses. An enchanted, ancient churchyard, which a Sleeping Beauty wood of dense, heavily fragrant Spanish lilac bushes has spun around and closed up. And flowers, flowers everywhere, in front of every house behind the moss-green fence. Steel-blue swallows whizz along the village road and twitter about the days of one's youth. Naturally, the stork still nests on a roof-tree in the centre of the place.

Here in Gosen I had occasion to observe the storks at their love-play and to gain respect for their art of balancing. The nest daringly cresting the venerable thatched roof, that lay there like an aurochs cooling itself in a green swamp of algæ. Mrs. Stork standing up dizzily straight in the nest. And Mr. Stork on her back, his eyes staring into the blue sky between little fleecy clouds, bending over in this Eiffel Tower attitude, beating against her in rooster

fashion and immediately upright again, chattering in lively fashion, with the humorous gravity of these birds, for whom the act includes the extreme of dignity. In this respect they are unconsciously wiser than we are. But whoever can negotiate the matter that way needs no lizard's joint.

The storks still have a sort of souvenir from the crocodile, a wart which is the last blurred remnant of the crocodile's guttered plug. And the most old-fashioned of all birds to-day, the one which still most resembles the reptiles in multifarious other respects, the African ostrich, still has the plug itself like the best of crocodiles. Among other ostriches (which probably are far removed from the African variety in the system of classification) certain slight complications going even beyond the crocodile make their appearance, and something similar is the case among ducks, geese, swans and several kinds of chickens. But those are exceptions in the great bulk of the feathered world, and the starts in that direction have not been carried through. But the road to you did not run via the bird, for that matter; it passed the bird by and ran directly to the mammal. And now the ball keeps rolling straight to its goal and nothing can stop it.

The mammal executes three different acts, and then it has reached you.

The duckbill, this steadfast Australian instructor in old prehuman conditions, shows you the first act. As you know, it still has urine, excrement, semen and eggs all in the same anal gateway, the first and last mammal to have it that way. And correspondingly, the old crocodile plug, merely somewhat changed, still grows directly out of the anus. The dripping cone with a channel has become a hollow pipe. The edges of the channel along the plug have grown together in such a way that a canal within the tap has resulted. Instead of the slippery surface down which it ran in the case of the crocodile, the semen now has a blow-pipe standing out in the anus in the event of excitement, through which it can squirt out.

The next act is staged by the marsupial, say the kangaroo. In the union anus, the partition-wall, which from now on separates the end of the genuine food intestine, from the exit for urine and semen or eggs, is now formed. Naturally, the semen tap which is piped has no further business in the end of the intestine, the genuine anus from now on. It belongs on the other side.

But as soon as semen tap and urinary gateway are alone together

again, fluids having to be squirted out in both cases, Nature again proceeds according to the principle of simplification. The semen tube comes to be directly used as urinary tube. Filled plump full of blood in a state of erection, it serves the semen now as before. But in its limp state it simply lets the urine run off.

At this moment, the kangaroo's copulative member is in all essential respects your member! A projecting fleshy tap having no connection with the anal gateway, pierced by a canal through which semen and urine run off as required.

Only a third and last act is still necessary to add the last finishing touch, which no longer has much to do with the copulatory member itself, however; this act likewise begins with the kangaroo.

The male sexual manufacturing plants in which the semen is prepared, the two testicles, slide out of the internal association of the body and downward, so deep down that in the end they come out into the open below the male member, as if in a hernial sac. It is just as if the member, becoming ever bigger, freer and more highly developed and in the end coming out into the open, in the form of a powerful tap on the abdomen, had cited this realm, that belonged to it so intimately, to appear before it, had conjured it to come down and come out. For an instant you are almost taken aback by the riskiness of this particular innovation. An organ which was so very valuable and which could absolutely not be replaced, such as the place where the semen was produced and stored, was transferred from the protected interior to the most exposed outer wall of the body's fortress. What for? A certain fatal success of this innovation makes itself felt on up to us in the relative ease with which a man can be castrated; and you also know from gymnastic and athletic experience how near at hand the danger lies of being hurt at this outpost. There must be some sense to this move of nature's that is still dark to us, for it was forced through too energetically by evolution in your genealogical tree not to have a purpose. Each successive stage in the regrouping and sliding down of this big manufacturing plant becomes visible from the marsupial on up, until in the end the whole semen organ hangs on the outside like a thick gourd underneath the squirting tap: the scrotum containing the testicles.

This continued to be obscure for a long while in a whole series of very well-known mammals of the intermediate range. I had occasion to tell you before that in the elephant the semen factory con-

tinues to remain deep within the body. Among the very old hedgehogs, the bats and several rodents this matter is still in a state of flux to-day: the testicles slide back and forth, in love-time they come down in a baglike fold of skin and slide back into the belly again during periods of intermission. A faint echo of this alternating possibility exists among human beings to-day in the fact that some men still have the ability arbitrarily to draw up and draw together the scrotum at least a little way. In the end, however, everything became clarified and definitely fixed. The half-ape already has its scrotum at the right spot; and this is wholly the case with the full-grown monkey. And so it came to you, as if it never again could be otherwise. When the wise cells of the embryonic body carry out their plans for the building called "man," they logically construct the anus separately at one place, and the male member for urine and semen at another, and below the male member they hang the precious little pouch which encloses the semen factory.

A small battle was further waged in the mammal over the free external position and inner solidity of the male member.

In the case of animals running on four legs, the member was placed as close to the belly as possible from the very beginning. The bat, which flutters in an upright position, at first lets it hang down perpendicularly in its resting state. The half-ape and the monkey, whose bodies likewise gradually become erect in climbing, imitate this. And finally it is imitated by walking man, with whom the liberation of the member reaches its climax.

The experimentation with a view to making the member as solid and substantial as possible is very interesting. The anatomical invention that started with the crocodile was very generally brought to the peak of perfection by equipping the inner tissue of the member with pockets, as it were, in which the blood could collect and become congested on a specific nervous stimulus in the event of erotic excitement, so that the whole member became plump and stiff like the finger of a glove, which was limp before, and into which one puts a real finger. We have kept this matter in its entire extent. Among various mammals, some auxiliary experiments were tentatively made. A hard bone, a so-called "penis bone," was placed in the fleshy mass of the member. This gave the member a veritable backbone in addition, when it became stiff anyway. This begins on a small scale with the cat, already shows up ruggedly in the dog and the bear and reaches its climax in the walrus, which has a regular

sword running through its member; among bats this little bone forms a fork, whose prongs are thrust directly forward under the skin in the act of copulation, and help to excite the female. This particular move on nature's part must have proved its worth for a long time, for the penis bone continues on through all monkeys, including the anthropoid apes; but it was lost again in our own case. Nature experimented in a different direction, as to the possibility of utilizing the member for a while after the semen had been ejaculated to close the female sheath tight, as a sort of bolt which would prevent the spermatozoa from pouring out again. Thus, in the case of the dog, at the moment when the semen is ejaculated in the act, the glans suddenly swells up tremendously, preventing the member from being pulled out for quite a while afterwards; it stays caught in a natural trap, so to speak, until there is some assurance that the spermatozoa have really started energetically on their journey into the female interior. You know the tragicomic case of two dogs remaining stuck in one another after the consummated act of love and not being able to get loose from each other despite the most violent efforts. But this too was no longer passed on to us, at least not in such an extreme form.

In the final analysis, safety measures were undoubtedly involved in all these cases, and measures which in the end did somewhat cramp freedom in the act. That principle of the "flexibility of members" can be splendidly studied in your male member as in all your other members; the same principle to which man without a doubt owes his superior nervous versatility. Spiritualized mobility triumphs in the entire structure of your members, and so overwhelmingly that even the quickest animal at bottom appears like a manikin crudely nailed together out of laths by comparison. Simply think of the structure of your hand, think of your tongue, think of the way your spinal column is adjusted to walking erect.

The external harmony which the naked human body offers the eye, the beauty of the naked human being, essentially depends in turn on the general spiritualization of the members for the purpose of action that is wonderfully co-ordinated and at the same time wonderfully improved and worked out to the finest detail.

The male member, too, in its characteristic position in the angle between the two capitals, as it were, of the columns, the legs, that support the temple of the body is a part of this harmonious beauty. And in this sense, it is an absurdity, for purely æsthetic reasons

alone, to destroy this necessary part of the harmony of a naked marble statue by a master of art with an object that absolutely does not belong to it, like the leaf of a plant, a "fig-leaf." Purely ornamentally, the male organ, member and double bag containing the testicles, placed as it is right at the boundary where the unity of the rump is replaced by the duality of the columns of the legs, constitutes the most beautiful possible intermezzo of form by reason of its small, delicate, interpolated three-fold division. By reason of the organ being at this particular place, the body loses that appearance of being split open from below, the split end is covered up and a harmonious stream line from the abdomen into the columns of the legs is created. At the same time, this sharply individualized, independently movable member confers upon the very heavy, massive rump and thigh part a sort of spiritualized central point; decoratively, too, it forms a finger, as it were, a third little hand on it, appearing to the eye in a rhythmical relation with the hands at the right and the left. In this region, the male body is decidedly more beautifully constructed than the female body.

If in addition you have obtained a vivid idea from the series of pictures which I have shown you as to the infinite amount of fine detailed work on nature's part that was necessary in order to bring out this particular point of the body as it now exists, and how with this organ, too, man has climbed on and up from peak to peak in a way that nothing could stop, this inward, driving human being who for æons of time has swum on and on, via nebulæ and stars, a planet and thousands of different forms of life throughout nature, on to a definite ideal . . . will you really believe that this tremendous evolutionary process, which must necessarily arouse the utmost interest of the thinker, the philosopher, can only be exhausted with the one little word "indecent"? Or will you continue to pray: *Credo quia absurdum?*

We merely have to catch up with a few words about the female copulative part now. A few words about its synchronous ancestral scroll. Here, too, the main thing is clear. The more distinctly the wedge, the neck of the bottle, appears in the male, the more matter of course appears the simple opening, the cup, in the female under present human conditions. Naturally, the female, too, participated in that leap beyond the duckbill, resulting in one and the same cloacal gateway no longer discharging waste from digestion, urine

and eggs and taking in semen. Separate gateways developed in the female, too: an anus only for intestinal waste and a second gateway for the exportation of urine and eggs and the importation of semen from now on. From this point, this latter opening would have been exclusively the cup that seems to come in question for the act.

But if you look closer to-day into this mysterious cup of nature's, you will notice that numerous different little crisscross roads of evolution must have passed here, still immortalized to-day in very fine writing in there, as in an old album.

Quickly run over the series of pictures once more, but now observe the female more than the male. You are once more on the far side of the anus' separation from the sexual gateway. As the oldest form you have exterior procreation among frogs and toads: the female discharges the eggs out of the anus and the male pours semen on them. Then you have the fire salamander, with anus pressed against anus: the female keeps the eggs inside, the semen is swallowed in to the eggs, fertilization takes place in the interior and only then does the female lay its eggs.

But the anal vestibule in both lovers is large and has different, separate doors in it. It now becomes necessary for the discharge from the male gateways exactly to reach the specific female sexual doors within the vestibules that are pressed together. And so you see the crocodile protrude the aforementioned fleshy plug out of its anus, giving the semen a more localized line of march for passing over into the female.

At this point and under the conditions existing then, there could have been nothing surprising about it if the female on its part had co-operated by means of a cone like that, projecting it for a short distance within its vestibule to take up the semen and bring it to the right spot; there could have been nothing surprising about it if the female had stretched out a sort of cover and complementary lock, as it were, toward the open semen conduit of the male's plug, and if it had done so in the form of a similarly notched fleshy female plug at its anus.

And as a matter of fact, something of the sort must actually have existed once among your ancestors in the vicinity of the reptilian stage. In the case of all the reptiles mentioned, which as males already rejoice in a copulatory organ, a companion piece to this organ at first appears in the female's anus, too, quite as a matter of course and in highly characteristic fashion. This was undoubtedly

the case too with your special ancestors. The female developed a little member, a little finger, which swelled up and stretched out in the moment of excitement, so that the male member could be placed against it, now forming a perfect canal for the stream of semen from the semen gateway in the male's anus to the egg gateways in the female anus for the duration of the act, while at the same time the intimate friction caused the male's semen to be suddenly and automatically ejaculated.

It must have looked for a long while among your animal forebears as if the male as well as the female were to receive a substantial sexual member permanently in this form, a male member and a female member, and that the true copulatory member as a whole would result only when these two were placed against one another.

But a decisive change now took place in the mammals. In the male as well as the female, the anus was separated from the urinary and sexual purposes. A separate gateway specifically for the latter purposes developed in the female as well. The meeting with the male took place here from now on, and no longer in the big anal cloaca. Simultaneously, the male's original guttered plug had already become definitely and finally transformed into a real, enclosed pipe. With this pipe, the male now entered as deeply as possible into the female's new narrow gateway in the course of the act. The female plug no longer needed to have a complementary closing device for the semen. It was thinkable that the simple friction of the male member on the narrow walls of the gateway would produce the semen explosion from now on. Why continue to have the female member at all, then? One would suppose that it would have degenerated and become absorbed in the wall of the female gateway again. But instead of that, we now see natural evolution make an extremely remarkable move in the realm of mammals in this respect.

Instead of eliminating the female member, nature in first line proceeds to attach very special importance to its preservation. Without prejudice to the possibility that the male member can rub against the wall of the passage in the act, natural evolution makes a very special, extremely vigorous female organ of friction close to the entrance out of this old female plug. It hangs down from the roof of the cave like a thick stalactite. Its old ability to swell up in the excitement of love is preserved with painstaking care. This is even increased in a whole series of mammals by means of a permanently firm insertion. The stalactite in the cat's female grotto contains a

solid piece of cartilage; in the case of the female bear, there is even a bone, quite after the fashion of those penis bones in male animals. In the act, this plug is moved and engaged in the liveliest counter-work.

In general, this female member continues to have a certain tendency not to spread out too much. This tendency was already inherent in it in the crocodile. For its purpose must not be to hinder the entrance of the male member. It must not protrude too far out, either, for the male member is supposed to go as deep into the cave as possible, instead of already being so vigorously rubbed outside that the semen explosion takes place there. There are exceptions to this, as in the case of the American sapajous, about which I told you before that a member hung so far out of the female gateway that it might well have been a male. That too is nothing else but the female friction plug, gigantically protruded.

Once matters had developed to this point, a new and surprising experiment mixed in at a certain station in the evolution of the mammal.

You will recall, that when the male's grooved plug first closed up and became a perfect pipe, among the mammals, only the semen passed through the pipe at first (in the case of the duckbill); only with the marsupial did the urinary tap first become connected up with the same pipe. In the female at our human stage, the friction plug has absolutely nothing to do with the semen conduit and can never again have anything to do with it. In the act, the male pipe passes directly under it and into the grotto. In childbirth, the child likewise slides under it as under a non-participating stalactite hanging down from the roof, and on out at the gateway. And when the female bladder is emptied in there, this little stream, too, simply runs under it and out to the light of day. It never became a pipe itself; it can conduct nothing. But what if one day it took over one more function after all?

Sexual acts are infrequent; on the other hand, the little urinary fountain of the reservoir gushes daily. The old plug still contains the old groove. How often it may have happened that purely by chance the wave of the fountain in welling up surged against the cone hanging down from the roof and ran down the groove. To good purpose; for any concentration of this wave that makes for a stream that is rapidly and completely shot out can only be a gain. What if the groove were to close up and form a canal in this case

too? And if the tap in the female were to serve as an auxiliary urinary organ at all times when it is not stiffened sexually and at work as a friction apparatus?

This took place, and it still functions to-day in a smaller number of mammals. In the moles and shrew-mice, among many rodents and all the half-apes, you find the female plug with a hole bored through it. In its way it has become a conduit like the male member. A channel only for urine, to be sure! Among the rodents, the porcupine still shows the way directly. Its urinary spring drips down through the old, open groove of the plug, as if from the gutter of a roof placed on a slant to the outside. Then the rat already possesses the finished canal for this purpose.

This attempt, however, offered a further opportunity.

As soon as the fountain of urine, that played from the first day of life to the last, had its own pipe line out into the open, the question could seriously be considered whether the rest of the gateway might not be closed, at least temporarily.

You will recall what a horror natural selection had of superfluously open doors on the body for reasons of utility. Copulation and birth were rare acts, particularly in the case of animals with fixed periods of heat. They were preceded by a longer period of inactivity while the young animal was still immature. During all these intermissions, the main gateway could very well be kept closed And so you see a new chain of experiments starting here. A piece of skin, a fold, is drawn in front of the sexual gateway. It cannot check the urinary spring, since this flows into its own separate canal. But it does for the time being afford protection against all menacing forms of intervention from the outside, such as dirt, parasites and all manner of other possibilities. When the sexual act is finally to take place, this piece of skin is not so substantial as to be really a disturbing factor. The male member which seeks admission thrusts it aside or simply tears it in pieces.

The moles still show you the extreme limit to which this road runs. In the case of the still virginal female mole, the plug, which has a hole bored through it, reaches to the outside, as a long member. But round about it, the rest of the gateway is simply grown hermetically closed. In this case, the lock is so substantial and strong that the male member alone would never be able to force it. And so nature helps out in the virgin herself, when her love-time comes. By means of an inflammation similar to menstruation, the cellular tissue of the

lock is dissolved before the first act. Nevertheless, the circumstances of the case during virginity are so curious that for a long while they were able to mislead zoologists. They mistook all the mature virgins, that showed a long urinary member and no trace of any opening otherwise, for adolescent males.

Such extremes as this are the exception, however, and their method in the individual cases is highly original. But you find traces of this temporary barring of the female gateway widely disseminated, in one form or another as regards the way the lock is placed and constructed; and invariably its function has something in common with all other forms. And it cannot have escaped you during this narrative that in all probability you have here stumbled upon the original form of an extremely interesting thing which still applies to human beings; namely what in our case is called the "virginal membrane" or hymen. This famous and equally notorious thing is nothing more nor less than a small fold of skin, a sort of a little sail, which temporarily and as a provisional measure about closes the specifically sexual side of the female entrance in the still untouched state of the female. It is not really grown together in the case of our girls; at least not normally. We happen not to be moles. The simple first thrust of the male member is entirely sufficient to tear or at least to push aside this small, weak ring. The resultant small flow of blood is totally devoid of danger. Later on we shall discuss what the history of human civilization has seriously and superstitiously woven and lied about this remnant of the primitive safety lock which was made to be broken. Let the historical, evolutionary clue suffice here. A number of monkeys have the little membrane exactly as the human being has it. Its original purpose has again and again been the subject of scientific controversy, but I can see no connection that looks more plausible than this with the old protective tendency. The way in which this tendency was tested out in the older mammal tribe was clearly a many-sided one, and the special form in which this little membrane is placed and constructed in our case simply happens to mirror one of those different ways. The horse too has a very similar ring-shaped fold, which points to the same road.

Though we still possess this remnant at this spot, we human beings just as evidently lack the counter-signature in the same critical region: namely, having the female member bored through to form a urinary canal. And just as we lack it, so does the bulk of the higher

mammals. The whole experiment in this direction was abandoned after all.

It appears as if it had been eliminated only subsequently after it had more or less existed everywhere. It is everywhere in flower among the insectivora, to which the mole belongs and to which the rodents appear to be closely related historically; but the insectivora happen to be regarded as the starting group for all the highest mammals by the system of classification which is accepted to-day. Your human genealogical tree in particular is close to this thing, since the half-apes still possess it. Nevertheless, this attempt was just as consistently abandoned again in the upper stratum of mammals. It is evident wherein its mistake may have lain. Utilizing the female friction plug as a urinary canal while at the same time temporarily shutting off the rest of the gateway was bound to lead to the lengthening of the tap. It had to empty outside, had to appear on the outside, just as it does in the mole. But that again conflicted with its purpose as an excited rubbing organ in the sexual act. As such, it did damage only if it was placed too far toward the outside. In this conflict between urinary purpose and sexual purpose, the sexual purpose, which is invariably the most important of all, remained the victor in the end. The stalactite, which projected for a while, gradually crawled back into the cave and the little fountain flowed off underneath it again. The temporary closing of the sexual door could no longer be carried out to the same extent and so it likewise receded; it acquired a certain rudimentary trait of being more or less stunted.

But it also seems as if on this general line of retreat the whole plug, which again did not have a hole bored through it now, had experienced some impairment which did not enable it to recover all its old strength when it was back on the inside. It became shortened. The bone enclosed in it disappeared for good. But its base kept getting broader and broader, and parts of the base, in the form of folds, gradually were drawn into the edges of the gateway, where they reached down on both sides in wing fashion and formed curtain-like protective protuberances, which from now on took over part of the old rubbing functions. In the act, these wings simply parted asunder and at the same time caught the entering member between them, like lips. At all other times they really shut like lips of a mouth and thereby helped the innermost shrine in the grotto to get a

sort of general lock with the most convenient possibility of being opened that can be imagined. This sort of thick sliding portieres with double wings now became trump generally in this region in place of all experiments with tearing barriers of a virginal membrane character. At the climax of this situation, plump folds of fatty padding made of the material from the outermost rim of the gateway, which in the case of the male had long ago supplied the material for making the scrotum, once again formed two large outer portieres, which now enclosed the inner ones. In the course of this increased building of barricades, only the little cone part at the very end, of the old original female plug, the point of the stalactite hanging from the roof, was left over, and at the very last, this was left hanging way up at the top where the two inner portieres crossed, merely like a knot tied there.

For the rest, in the grotto itself the two special lines of communication to the interior continued permanently to exist without any alteration taking place in them: the water tap of the urinary apparatus, through which the urinary bladder that was fed by the kidneys was regularly emptied, without all those portieres in any way interfering with its simply flowing off; and the important corridor leading to the uterus, into which the male semen had to get and out of which the matured child had to come. When the male member now came along in the act, stretched stiffly, extended to its maximum power and loaded with semen, it first went easily through all the portieres, which could be pushed aside, and finally wedged itself in the innermost space in that decisive corridor in such a way that when the explosion of its precious charge of semen finally took place (by reason of manifold friction), this exactly reached the spot where the spermatozoa on the whole could no longer possibly miss their way. If the act took place for the first time, the old little security chain of the virginal membrane (which was only preserved as a remnant) fell once for all.

We have reached man. . . .

The outer portieres are the so-called large labia of the vulva, of the female sexual and urinary gateway. The inner portieres are the so-called small labia. The little remnant of the old female procreative finger, the point of the old original plug, which is still a real procreative member to-day in the case of a man, distinctly continues to be preserved in our female lap in the so-called clitoris (the accent is on the "i") or the "tickler," as it is called in German,

which still is located exactly in the angle of the inner portieres in the form of a pointed knot.

In every human embryo, in the case of every new human being coming into existence in the mother's womb, you can still observe that this clitoris in woman's lap was originally a sexual member, corresponding to the male member. Just as the old reptilian cloaca makes its appearance again at first in the human embryo, so does the old reptilian plug, supplied only with an open groove, return once more, and moreover it is absolutely identical in the nascent girl as well as the nascent boy. From the fourth month of development in the womb, the closed male member then begins to develop out of this plug in the case of a boy, while the clitoris originates from it in the case of a girl. The embryo once more repeats the evolutionary occurrence, according to the fundamental biogenetic principle. The fact would already be brought out clearly enough, however, by the simple anatomical comparison of the situation in animals with man.

At this point you might be tempted to view the clitoris, at least in us, as merely a so-called rudimentary organ, such as our well-known vermiform appendix is. Seemingly it fulfills nothing of its old original mission. It does not form the cup, into which the neck of the bottle pours its drop of immortality. Not even the urine's discharge pipe enters into it. Gone are the days of its independent greatness. And so it really appears to be just a superflous leaf of an album in this extremely animated scene of evolution; a page of an album which at most is for the few advanced human brains that begin to read the half blurred runic inscriptions of the true history of the world with interest; but meaning absolutely nothing to the millions that measure their bodily property only according to practical performance.

Matters are not as simple as that, however. With the homely word "tickler," a wholly new melody is again sounded in our remarkable epic of love. An important point remained unattended to throughout our entire latter discussion. The female tap, still in the days of the cloaca, originally served as the part that formed the cover in the joint semen bridge during the act. At that time it was the only place with which the female's body at the height of sexual excitement in this act touched the corresponding male member. But even after the condition of affairs became totally changed, evolution kept on fighting desperately, as it were, to preserve a special rôle,

a special point for this original female place of contact in the future as well. Why was that? There must be yet another mystery here.

As a matter of fact, with it you bring up the third of those great questions of mixed love which we propounded above: the pleasure question.

§ 9

Mysteries are by no means miracles.
GOETHE (*Sayings in Prose*)

The natural history of love, the way we are discussing it here with one another, is in first line merely an outline, as I have frequently told you before. A series of little points of lights, many of which may go out again before the train of sparks becomes a genuine band of sunlight.

The natural history of sensual pleasure, however, is only a makeshift substitute for one of those little points of light. It glows in what is for the present the darkest field in all our wisdom; namely, the field of sensations. To take a chapter out of the chronicle of any "sensation" whatever and carry it beyond man into the historical element of the animal kingdom means journeying under the cover of night at the present time. I should, therefore, like to have you make a mark of mental reservation on the following discussion, although I cannot skip it and by no means want to do so either.

This is how matters stand with us humans as regards all "feeling and sensing."

This is one region where every one of us, whether learned or ignorant, can give his tongue free rein and enjoy the proud honour of being an expert. We do not get by hearsay how it is when something does us good and something else does us bad, when we feel good and when we feel bad, when a rose smells sweetly to us and when a thorn pricks us. The stupidest among us knows it for a fact just as well as the philosopher does. The child already has it, and all education by teaching and living rests on this, its basic wisdom.

But we buy this proud character of expert with the diametrically opposite difficulty that, strictly speaking, we know only our own sensation in the world as criterion. We invariably only guess the sensations of all other human beings and beings round about us by reason of a deduction from their similiarity, by reason of an analogy.

We cannot look into the heart of the sensations of any other being. A roundabout way leading over a deduction is always necessary.

Some one pricks you with a needle, and you utter a cry of pain. You prick another human being, and he too cries out in approximately the same way. Conclusion: he undoubtedly experienced a sensation of pain too. But of this sensation itself, you will never become aware; it happens to be only a deduction, in which the most important link is supplied by you.

If I invent a talking machine which yells "ouch!" on the prick of a needle, the deduction in this bare form is already doubtful. When my heart is happy and I am in love, I sing. When the cuckoo cries "cuckoo" in summer's woods, I conclude that it, too, is happy and bubbling over with love. But my cuckoo-clock at home cries "cuckoo" twelve times, when the hand of its mechanism touches the figure twelve. I must clearly invoke some other aid for my deduction about sensations.

I therefore look at myself in the glass and then look at other human beings. And the resemblance is so striking as to make me believe I have stricter proof. I look totally different from a cuckoo-clock, and so do you and so does that and that human being. Only some one who looks at least approximately like me will therefore have a sensation between the prick of the needle and the air-wave "ouch!" But the cuckoo does not look like a human being by any manner of means. Well, then I simply need some more help.

I have recognized that in the other human beings the pricking and the "ouch" have a decided connection with a certain cell mass, which is in the bodies of these human beings in the form of nerve substance, and above all in the form of a brain. I recognize the surest indications that such a mass physically and tangibly exists in my own esteemed body and that somehow or other it has something more specific to do with my sensation. If this sort of an apparatus gets out of order, if merely the nerves of my arm running from the hand to the brain are cut through, I can prick my hand as much as I please, and no sensation of pain whatsoever will take place. I again conclude, therefore, that this nerve substance permits me to make a deduction as to the probability of the existence of sensation everywhere where it exists. The cuckoo-clock absolutely does not possess such nerve substance; but the cuckoo does.

Still, the cuckoo is an animal that stands high in the scale and is close to me. I must go down deeper into the animate world with my question about sensation. Again difficulties pile up. I come to animals on a low plane, in which the nervous apparatus becomes

more and more resolved in the entire body, until it completely disappears in it. At the same time the symptoms of crying "ouch!" become ever slenderer and more doubtful. You know how difficult the matter gets in the case of the plant, even the highly developed plant. For a long time it was entirely denied that plants had anything in any way comparable to our nervous apparatus; though to-day part of the botanists will at least let you talk to them about it. It is quite certain that the hydra still has nerve-cells under the very slight cellular division of labour in its body. But an amœba and a bacterium, whose bodies consist of but a single cell, quite certainly have no nerve substance that is in any way localized.

These extreme, simplest organisms, to play a shabby trick on the word, as good as totally lack organs generally; but on that account they do not necessarily lack the properties attached to organs. The amœba has no stomach, and yet it digests; the ability to digest has manifestly remained a property of its entire animate cell substance. Let that hold good for sensation once. I want sensation likewise thought of as being quite generally connected with living substance, with life. I say to myself, that I sense because I live to the full extent of the word, and therefore everything that lives will normally sense.

However, as you will recall, life wanders down into the ultra-violet of the inorganic. At a certain moment in thinking the subject out and carrying the analogy to the very end, I ask myself whether sensation might not be a basic property of all matter. All "being" seems to me to be only another expression for "self-experiencing." But something experienced oneself presupposes a sensation every time. A thing which senses nothing can experience nothing and cannot be.

The only question now remains whether I want to credit this capability of sensation merely to every tiniest part of matter split up into atoms. Or whether I want to grant it to more complex systems, built up of such atoms, as well. I take my own case again, and it can seem probable to me that a system, a large physical multiplicity of cells (merely think of the number of cells in your brain) senses uniformly, as a united whole, or at least does so in a normal, healthy condition, and that it is not merely the individual monadic atom that senses. To crown all, this opens up a tremendous analogy. Everywhere in nature where closed systems make their appearance, there also appears the possibility of think-

ing that not merely an atomic sensing by all the little parts but also a sum total sensation of a higher order by the whole system might take place.

With these last two analogies I have come to closer quarters spiritually with the cuckoo-clock; whether I choose to let only its smallest particles, its atoms and molecules, perceive sensations; or whether I regard it as a system from which my own organism which senses as a united whole is only separated by a pure difference of degree, as being an infinitely more complicated sensory complex.

From the moment that you touch upon the inorganic, a totally different, diametrically opposite view stretches up from down below there, and seeks to throw you out of all your former positions. You are told that if a so-called inorganic body, say a stone or the weight on the cuckoo-clock, falls, that is simply a mechanical occurrence. It involves the law of the conservation of energy, and sensation plays no rôle whatsoever in the causal connection. And now we are to mount up from below into the organic according to this analogy. There is the bacterium: let us consider it purely as we do a stone or clockwork mechanically running on, and let us see if everything will not work out exactly in that way, too, even whether it will not in the end permit of the same exact calculations that were based on that law down there in the inorganic world. Let us apply the analogy to the plant. The plant, too, is a machine! Once we have succeeded, let the animal finally be explained according to the analogy of the mechanical plant. Where a nervous system makes its appearance, it will merely be described as an apparatus through which certain definite forces pass according to the rules of the law of energy. The cuckoo's brain will be described in that way. There is a simple power connection in the animal which is pricked with a needle and cries "ouch!" and the prick of the needle must purely mechanically release the "ouch!" by an intricate action.

The next thing you notice, this wave of the analogy rising up from below has reached you and seized you.

If the cuckoo-clock before was on the way to being made human before, you now conversely face the proposition: man is really merely a very much more complicated cuckoo-clock, in the sense of a pure power machine.

The instant this happens, something extremely strange has taken place. Seemingly this second line of argument climbing up from below tore to shreds your earlier conclusions by analogy one after

the other. Even the crust of the human brain is nothing else but a playground for mechanical occurrences involving energy; it is merely one uniform power cord, all tangled up in itself. But in the very instant that, proceeding from this point, you touch yourself, it is just as if all this were blown away and everything turned clear around again of its own accord. For now you yourself are the type of a genuine, regulation machine. But, by your leave, you also remain the identically same individual that you were before. When the needle pricks you, you sense that as pain, and because you suffer pain you yell "ouch!" according to your inner experience.

There is nothing left for us to do but for your sake hitch a "something" else to the definition of the machine in addition to the perfect functioning of the law of energy; that "something" happens to be this very fact of sensation. How you will do so is again a story in itself.

The materialist of the very extreme sort will tell you: your sensation is merely an occurrence within the mechanism. About like this: a wave of mechanical energy comes from the outside at every prick of the needle; this wave enters into you; in your brain it is transformed into sensation according to the equivalent relation of motion being transformed into heat; and this sensation in turn becomes the starting-point for ordinary actions of energy, whose final result is the "ouch!"

Or else, the wave of energy which traverses your body from the prick of the needle to the "ouch!" somewhere along the line in your brain gives off a certain percentage of energy for producing the curious secondary phenomenon which we call sensation. In the face of this train of thought, other natural philosophers will burst out in the cry: "The father shudders; he rides on fast. . . ." And they will ask you how in heaven's name a thing like motion is supposed to become transformed into such a heterogeneous thing as a sensation, and vice versa.

Over this objection, you can then get to be an utter pessimist about thinking, you can preach *"Ignorabimus,"* here lies something that is eternally incomprehensible, like something that is not in the calculation and yet is in it, too; you can likewise once more make your profession of faith before the sublimest riddle of the universe in your little philosophical chamber: *Credo quia absurdum.*

Or else, in the sense of so-called parallelism, you can consider the mechanical chain running through your brain from the prick of the needle to the "ouch!" to be a self-contained whole, over which the parallel line of sensation simultaneously shines like a mysterious rainbow, without being "generated" by the mechanical element.

If you want to be consistent in this direction, you will have to stretch this rainbow of the soul very much farther; you will say that every wave of energy entering the brain already has to bring along its spiritual parallel with it. The prick of the needle as well. And that therefore this prick is perceived spiritually, is sensed as "pain" exactly as its thrust plays a rôle mechanically in the mechanism as a wave of energy. And that with your "ouch!" a spiritual parallel to the mechanical flowing off of energy leaves you again in the same way. That is the road which Fechner has so brilliantly developed and which, proceeding from this idea of accompanying spiritual parallels everywhere, throughout all being and elements and suns and Milky Ways, in the end arrives at a nature which is animated by soul through and through, even though spiritual systems of different degrees are interwoven in Fechner's nature.

You may, however, be seized with a sudden desire to simplify this strange parallel.

First you will ask whether it does not signify merely looking at one and the same thing from two sides: firstly from an inward, subjective viewpoint and secondly from an external, forcibly objective one. Sensation would be the subjective and the mechanical wave of energy the objective view of one and the same thing. The thing itself would no longer be dualistic; but its twofold character, the dualism, would lie only in your way of looking at it.

And here in turn you might be seized with the further desire to pass from this dualism of viewing things to a monism which would at least be fundamental, a doctrine of unity as regards your whole world of experience.

You could call to mind the simple fact that all your experience is sensory experience and therefore of a spiritual nature, and that the whole concepts of energy and mechanism are abstractions of your thinking, first created within this fundamentally spiritual experience, which are of inestimable service to you for putting the picture of the universe in order, but which cannot stretch out even a finger in a positive way outside of your spiritual experience of the world. In the end, the mechanistic mode of viewing things

would be merely a box, so to speak, within the encompassing theatre of the soul, and therefore you would have attained unity proceeding from here as well, the same unity which materialism thought it had achieved at the opposite pole.

This doctrine on the one hand touches all the older philosophers' most important trains of thought; but at the same time it also has its supporters among a contemporary school of most exacting physiologists of to-day. On the whole, it concedes the more powerful and more united picture of the universe to the soul element. In it, the physical element always appears merely like a symbolical value, which, to be sure, once it is established and determined by law, must be respected throughout in that way and which permits no breaking through or interference with its own causal connection; it permits this just as little as a calculation permits it, if I want to express a thing by mathematical values. The strictest materialist can work exactly as well for practical purposes in his field with this standpoint, as from the parallelistic and the materialistic standpoint.

At this point you have a whole gay bouquet of opinions to take your pick from as to the relation between the machine in you and sensory experience.

But no matter whether it is this way or that way, at that decisive moment everything about the fact of the matter is just as it was before. I myself am the criterion of all analogies anew. I am a consistent machine, but sensation somehow belongs to the definition of my nature. I now see that all other human beings in all that is visible to me are likewise machines, even as I am, consequently they will possess sensation, too, and they will have an individual sensory life that is very similar to mine, since their machines are so similar to mine. The machine which I call a living cuckoo will likewise have sensations of some sort. And so once again we go downward in full swing. All living machines down below differ from me only in degree, not in kind. And in the end this holds good for all things mechanical generally. Only now does the analogy of sensation really sink down into all depths, and everything that was seemingly overturned by mechanism raises its head again, like teeming stalks of grain after the rain.

Only, it becomes more and more difficult to state anything about the sensory life in the latitudes and longitudes of nature down below there, since the visible construction of these machines becomes ever

further removed from mine. The analogy remains, but the picture which it expresses becomes ever more phantomlike.

How are we to imagine anything about the sensory content of a molecule or an atom, according to our human picture? It almost works like a calm, comforting charm to say to oneself that in the neighbourhood of atoms, electrons and ions and their kind, a merry epoch of metaphors and wavering figures instead of genuine values still blooms to-day even in the field of exactest physics, which seeks merely the machine parts.

And when you now think of inorganic systems of a higher degree! Certain it is that there, too, we behold wonderful unified formations, mechanically speaking. Think of a crystal. Raise your dreaming vision to systems of suns and Milky Ways. As your eye roams from the flaming stars of Orion to Hercules, the goal of our solar motion, sense for a moment the shuddering thrill of the idea that this whole universe, this entire nature with all its suns and nebulæ and Milky Ways, all its energies and all its brains in the end represents a unified, encompassing mechanical system of this kind. . . . And when you then say to yourself that everywhere there might still exist a last analogous possibility of a union of simple sensory elements into higher systems. . . ?

For our purposes, however, it is only necessary for us to stay within the analogies of life on our planet, as it is enacted for us between the simplest cell and human brains and furnishes the specific scene for the great adventure of love, about which we are talking. It will be quite practical for us to do as if there were, as a matter of fact, only one method in nature which has led to the true increasing formation of more complex sensory systems out of molecular or even deeper sensory elements; namely organic life on our planet, as it is attached to the cell form and its development in us. Thus viewed, the mechanical similarity on the line between you and a little Rumpelstilz of the one-celled infusorian realm still remains a striking one. After all, we are still keeping everywhere to the machine picture of the cell itself. Even the highest organization is but a combination of cells, whose various departments as organs merely mirror the individual cell's fundamental properties. The fertilized ovum-cell, out of which you originated in your entirety is a single individual cell; and, to repeat it once more, the thing in you that meditates in human terms on all riddles of the

universe, and dreams and searches, mechanically regarded is in the end but a heap of ganglion-cells sitting closely squeezed together like a band of sticky amœbæ under your brain-pan.

I believe that the sensory analogy really can have some content for us on down to the amœba. I do not believe that an amœba behaves merely like the molecular aggregation of a piece of bronze, for instance; purely mechanically, I count it as infinitely closer to a human ganglion-cell, and so I also imagine that its sensory content is still entirely in the narrower, tangible realm of the analogy to my own spiritual personality. But . . .

The matter gets desperately difficult here after all; and that whole circle of philosophical possibilities which we briefly swung around alters nothing therein. In every sensory comparison between the amœba and you, the human being, there still remains the uncertainty and the danger of analogy. Here you have a machine, the amœba. Here a number of other machines; plants, and animals. And here the machine called man. The differences between them are not too excessive, but they exist. You can study them at your leisure. You have only one case covering the content of sensation: that is the case of man. From man you must construct all other types.

There are wise people who set up pretty formulas here. As a psychologist, I ought to read everything out of the thing itself, and not anthropomorphize to the extent of a single iota. It is all very well to say I ought to, ought to. I ought to understand the sensory life of the cuckoo from the cuckoo itself, the sensory life of the plant out of itself, and that of the bacillus in the same way. But the moment I introduce this "out of itself" into the calculation, I am simply setting myself down by virtue of an analogical conclusion. I must do so, for I myself am the only microscope that exists for looking through.

It is true that I immediately feel the difficulties and limitations of my implement. I need that great faith in the fundamental similarity of all organic nature in order not to despair utterly. I shall waver in individual cases, I shall find myself in a labyrinth, I shall not know where the analogy goes too far or falls short. I shall keep on going, shall be infinitely cautious, shall watch my step every step of the way and yet I shall continually stumble.

That is your fate as soon as you really undertake to tell the history of a sensation and no longer the history of a machine part

such as the convenient one of the human copulatory organ. We must make the best of it.

Wherever in love a genuine question of sensation thrusts itself naked out of the waves of the physical element, you must remember this state of affairs with the same freedom from prejudice, which permitted you to tackle the physical naked.

Such a point is sensual pleasure.

We have not the slightest idea directly, from the documents before our eyes, what sensations one-celled protozoans at the stage of amœbæ or radiolarians have when they divide into two parts or when two individuals fuse to form one.

Why should they not feel something in so doing? These are undoubtedly the most intense of all their actions for their little life. According to our principal analogy, it is a matter of course that they should feel something. But this at the same time involves their acts of love, and thereby the evolutionary basis of all love, the original acts of love. With human beings, sensual pleasure is a typical sensation of love. Might the original phenomenon of sensual pleasure exist among the protozoans?

The trouble is that we first carry the matter out of ourselves and put it in over there, in order to pull it out again as the "original form. . . ."

But at any rate, let us try to stalk the matter somehow and get close enough to have a shot at it. First of all, you have the act of division by an amœba or a bacillus. One would like to interpret this as taking place with a definite accompanying series of small alternating feelings. First, a feeling of repletion, of superabundance, of teeming, of an overflowing urge, possibly even to the point of discomfort. Then the act of physical division: undoubtedly a tiny bit of pain such as a sharp cut makes, soon combined with a feeling of deliverance, as when the doctor cuts into a sore that torments you. Then complete relief, fresh vigour, the quieted down sense of feeling good all over.

A human analogy to this sober series could easily be found. Every everyday elimination of matter from our bodies affords it. A very brilliant analogy, which in our case touches love-life, is offered by the act of birth. The terrible pain suffered by the mother in our case undoubtedly is simply a contribution from the mammal. In the case of the hen laying its egg, you have the entirely peaceful

scale of relief with merely some stress, and the comfortable feeling of liberation and breathing freely again.

But all this does not as yet give you the tremendous plus quantity of animation which is sensual pleasure.

You do find it in yourself, however, in connection with an act of separation, namely the expulsion of the spermatozoa by the male. The possibility of a connection between separation and sensual pleasure exists according to your analogy therefore.

On the other hand, in the case of one-celled beings that divide you are looking upon something, still in a mechanical sense, that goes far beyond the simple analogy of simply overflowing and bursting. Recall the intricate Rumpelstilz story; the division of the nucleus with all its fine points and its wonderful inner life. And at the same time recall the true nature of that whole process. Self-division did not take place like a cut through any part of an overflowing vessel you please, but went through a genuine living individual. The act contains a kind of death and also a kind of coming to life again in both parts: a strange mystery. Something that undoubtedly shakes up the whole cell being through and through.

We do not know the sensation connected with this mystery. But let us set up the hypothesis that when the individual is thus shaken tremendously to all its foundations and renewed, its sensation would be something like sensual pleasure.

Now take the other side of Rumpelstilz love; the fusion of two cells.

The road runs in the same direction at first.

A first crude analogy leads to something which about corresponds to our feelings of being hungry and becoming sated. A feeling of weakness which craves replenishment in each of the two cells. Then this unsatisfied, uncomfortable feeling suddenly changing to satisfaction, satiety, increased feeling of strength in the act of fusion. But that again is too small and does not give the plus quantity in sensual pleasure that shakes the being to its very marrow and last fibre and makes the organism rear convulsively for pleasure.

In our own case we clearly see this paroxysm of pleasure attached to our sexual act. It normally makes its appearance with the most intimate union of both sexual parts which are mature for love. The coincidence of the male's extreme sensual pleasure with the separation of his sperm-cells is in its normal form mechanically released by the act of mixing as a postulate.

In the case of the fusing protozoans, the Rumpelstilzes, you are beholding an absolutely special action, infinitely more complicated and extending infinitely deeper than the simple satisfaction of hunger by eating. A tremendous vortex tears the vital centres of both cell individuals hopelessly together, they break to pieces against one another and yet they also come to life again in one another. They actually fuse entirely to form a new individuality, in which the two former ones have at the same time died and risen again from the dead. Death and new heightened life.

What if this, too, should manifest itself as sensual pleasure in the protozoan's unknown sensation?

Pain of death and happiness of life, stormy self-destruction and the joy of finding oneself again, included in the dull original sensory life of these cells at the bottom of all origin of life, united in a single dull convulsion of feeling: voluptuousness. . . ?

In connection with this diagnosis, the fact cannot remain immaterial to you that from the earliest times our human sensual pleasure in love's supreme act of mingling has been interpreted and described by all clear-seeing poets and philosophers in a way which, dull as the feeling appeared in us, dull and hard for reason to grasp, yet again and again sought to read one thing out of it: an impulsive emotional experience of death and bliss at the same time. For the man and the woman there is something in the nature of dying about the sexual act as an emotion. Even externally, the eye strives to close or turn aside its pupil from the world. In full force, it is like a momentary utter collapse. The world sinks away. Everything dissolves. But at the same time all that in the form of an ineffable sweetness. Sensation plunges down headlong through all stories of the universe and yet without any trace of dizziness, of fear, as if born on absolutely sure, delightfully soft wings. The individuality foams away in the sea and yet seems never to have felt more sublime in utmost self-possession.

The psychology of these seconds, that seem to lie almost outside the soul and yet belong to the most powerful conscious experiences that we have, is difficult. Who has ever described them exhaustively? Invariably men have merely tried to think over the unthinkable. But this one clue to the mysterious connection of death and bliss has again and again appeared!

True; here, too, we are wandering on the border of things that are completely draped in night for us. We talk about the sensation

of death. If you ask me how the momentary dying of those two protozoans in the act of fusions could be a sensation of pleasure, I should like to come back at you with the question: is actual death in the case of human beings a sensation of pleasure or the opposite of pleasure? Who has ever been able to tell about it? Fear precedes death. Longing precedes love. But it often seems as if this were already interchanging. We know the extreme moment of love. But not the extreme moment of death. A wall towers above us. Our ignorance about ourselves!

But it is my opinion that something is beginning to dawn on us after all; as if something in our psychological experiences with sensual pleasure did actually show a resemblance to what one-celled love still exhibits to us under the microscope in a mechanical way.

To be sure, the picture of our own human machinery in the act of procreation does not apply without further ado to these acts of the protozoans. How different they are in various respects. In our case, as was said, the act of mixing coincides with the male's ultimate act of separation. On the other hand, the female's last act of separation, childbirth, remains entirely outside the realm of sensual pleasure. But that is insignificant compared to the fact that we as big many-celled human beings no longer experience any love involving real self-division and fusion in the protozoan sense. That is to say, we experience it, but not with our intellect.

Words can never fully express how stupid we wise human beings really are inside our own skins. We seek to solve the mystery of the bacillus' sensations by analogy with our own sensations and we note on all sides that we ourselves are lost like babes in the pitch-black primeval woods.

Cell division and fusion is known and sensed, for it certainly takes place within our bodies, too, only it is not known and sensed by "us."

Obviously, the love-life of our own sperm-cells and ovum-cells forms the sole entirely true machine analogy to bacillus love. They still experience everything according to the old original formula. Sperm-cell and egg-cell fuse in exactly the same way, and the fertilized ovum-cell divides into two cells in exactly the same way. Our cells no doubt experience all there is to be felt in the way of pleasure or pain in connection with this. Pure cell division continues to take place in us otherwise, but always as an act limited

to cells. We big human individuals on the other hand (as a body politic made up of billions of such cells and perceiving in unified form), are much "stupider than we ourselves are," to an extent that makes your hair stand on end. Vischer once said that "every poet is stupider than he is and more sensible than he is." That meant: in the individuality of every poet there is a small field of vision and below it a tremendous abysmal depth, which contains infinitely more than becomes visible up above. So too do we human beings, all of us put together, constantly float on top of an ocean of things, which actually are all of them "we" and yet which we cannot have on demand, as it were. The soul-life of your own spermatozoa is as foreign to you as the soul-life of an inhabitant of Mars.

But let us assume once sensual pleasure as we understand it to-day in ourselves was originally the one-celled being's sensation of love's supreme fulfillment. "Invented," therefore, in some primeval ocean in forgotton hoary days of earth's history by the Rumpelstilzes of our fairy-tale of creation. Let this be a sudden fancy, an idea that just struck us; though in my opinion it has a degree of probability. We next have to consider what the stage of many-celled beings which was starting historically, the stage of unified cell states formed of many such one-celled beings, would have had to do about it and what attitude they would have had to take toward it.

You know the old tune by heart by now.

The one-celled beings become crowded together into cell associations. In the beginning, every individual cell still continues to be an independent being in such a cell association. Each cell possesses all the properties of life within itself: it eats, digests, breathes, moves, perceives light-waves, sound-waves, impressions of smell and taste, orients itself in its surroundings to the best of its ability and so forth. Gradually, however, the cells in the association arrange themselves according to the principle of division of labour. From now on, each one cultivates only one department in itself, but at the same time enjoys the benefits of all the others' labours. From now on, certain cells only eat, others merely catch light-waves, still others only sound-waves, and certain cells propel the whole colony. In short, the cell association, the cell state finally forms a new individual, which appears to be an enlarged edition of the

original single cell. This whole individual, this cell state, too, moves, eats, breathes, hears and sees; the only difference being that all of its organs are more limited associations of original one-celled beings according to the principle of division of labour. In the course of this process, love, too, gets its own department in the whole organization, where everything that has to do with reproduction is more specifically at home. It is true that simple cell division among the comrades in all the various departments of the cell state persists. But the thing that actually corresponded to the original love-act of division in the genuine one-celled beings, complete separation from the old, gradually comes to be taken care of as a regular occupation exclusively by certain cells for all the rest; here alone are real emigrating cells still produced, leaving the one state to form new state individuals. In the beginning the whole state as such occasionally divides; you will recall the old story about the starfish. But later, that ceases entirely, even as a possibility. Each state participates in division through its delegated love-cells alone; they can then build new states on the outside. From a very early stage, such departmental cells exclusively take over the matter of fusion, of genuine mixed love with alien cells, with the envoys of foreign states. This was already the case with the volvoxes which we described before. From the beginning, it does not occur that entire states mix. The more sexual procreation therefore becomes trump generally, the more the entire state reproductive work is transferred here. In the end, a new state can originate only from a sexual act of fusion between these departmental cells in the case of the higher animal up to you yourself. And so the love department's sexual cells finally become the absolutely decisive reproducers in the state. Their separation, mixing and further division is the decisive and in the end the sole possible state act of love.

An important conclusion for sensual pleasure must result here. The bulk of the state cells (composing the many-celled animal's body) lying outside of the love-department do not experience any genuine acts of love any more in the sense of separation from their own state and fusion with alien cells. The cell feelings attached to such acts of love will therefore no longer be directly released at all in these other cells. Simple cell division without genuine reproductive objectives still takes place among them: cell division within the internal life and growth of each individual state. The

very simplest sensations may still be occasionally attached to such simple cell division, but greatly weakened. For this involves merely the division of cell individuals within the big all-embracing union of the cell state, a fact which in all probability makes itself felt in the strength of the sensations connected with the act of division; actual separation from the cell association must produce a totally different kind of a jerk which no doubt only the delegated love-cells of the reproductive department still experience quite genuinely. In any event, all the cells outside of the department of love no longer experience any sensual pleasure from the actual fusion of the sexual cells.

So you might be led to believe for a moment that all sensual pleasure had degenerated in the rest of the cell state and even that the bulk of the cells had lost it entirely and that from now on the duly delegated love-cells alone enjoyed the whole premium of pleasure paid by nature for reproduction, just as they had done all the work.

However, this would not correspond to the state of affairs as otherwise guaranteed by the beautiful principle of division of labour. This principle implied that when one department engaged in a certain performance under general division of labour, the entire profit resulting from this performance redounded to the benefit of all the others as well; for it profited by the labour of all other departments. For example, when the intestinal department ate, that did not mean that the other departments starved; the nutritive strength flowed equally to all. In the beginning (as I told you before) this happened more or less by pure chance, by the production of one cell pouring over into a neighbouring cell: later, in higher stages of living beings, this became more and more ingeniously developed on the basis of very exact alternation and facilitated by special methods of communication and organs of circulation, as for example by means of the blood streaming everywhere in connection with nutrition.

The sensory life was no exception to this. When one cell in a state received a prick from a needle its excitement was at first transmitted purely by chance to the surrounding cells; it quivered on in radiating waves, as it were, so that the other cells felt some pricking pain. The pain (or the definite excitement of the cell substance, which always ran parallel to this spiritual expression) was in every case a warning signal, which in turn evoked a con-

trary protective action, such as jerking back from the pricking object, and it was useful to have the whole of the cell state undertake such a protective action as much in common as possible: the transmission of sensations was therefore an eminently practical matter, and so we see more and more ingenious apparatuses gradually making their appearance in the cell states for the transmission and centralization of such sensations. The purpose is perfectly obvious in the case of agreeable sensations, which would make it useful for the whole state to approach closer or engage in some other action of a prolonging or accommodating character. You see this transmission and centralization of sensations, whereby a sensation is to be transmitted from one or a few cells, as much as possible, to the state as a whole, reaching its climax in the animal's improved nervous system. In the end, a kind of special central station with a colossal alarm-bell is inserted in the brain and this once more rings out every individual cell-stimulus transmitted to it on a large scale for the benefit of the whole. When this needle pricks the cells of the skin on your finger tip, the cell excitement (which is undoubtedly a small individual sensation of pain for the little cell-souls of the little cells actually affected thereby) immediately quivers on to the central station in your brain and there it evokes a tremendously multiplied excitement, whose spiritual result is a powerful sensation of pain experienced on the part of the cell state as represented by your conscious personality. Then a great action of the state as a whole is launched from the brain, one that none of the cells of the skin that were affected could possibly perform themselves; the entire hand including the finger is drawn away from the pricking point or the needle itself is removed with the other cleverly directed hand. An immeasurable amount of evolutionary work went into this development leading up to the brain which receives all sensations and gives them a pointed meaning; but it was just as possible and succeeded just as well in this sphere as the organization of the blood for purposes of nutrition, for instance.

This could not possibly remain immaterial for the sensation of sensual pleasure. Even if this was not in first line a feeling resulting from an external shock, like the cell pain of the skin pricked by a needle, but owed its origin to an internal occurrence of its own in cell-life, such sensations had in other cases easily found a connection with the nervous apparatus. You need only think of hunger,

which clearly is a centralized perception of the brain. Why not sensual pleasure as well then?

There is always something out of the ordinary about love-life, to be sure. From the beginning, the matter of sharing in all advantages under division of labour never worked out exactly equally between the love-cells forming an established department and the rest of the body's cells. You will recall that as an exception to the rule, the partners in the rest of the cell state actually did lose something as compared with the proprietors of the special department of love; they lost their share in immortality through reproduction. In this respect, the volvoxes symbolically caused Goethe's death (you remember our discourse on the subject). For the volvoxes were the first to differentiate love-cells from the remaining cells in the body. The former remained in the life line of immortality. The others dropped off one day as dead paraphernalia. But there is absolutely not the slightest occasion for sensual pleasure getting lost in such depths. It continued to constitute a great cell excitement in the love department, now as before. Why should it not have obtained a connection like the other forms of excitement with the great nervous centralization of the whole state and with the brain multiplicator in the service of the state's union?

When one cell of this department (assuming that it was still connected with its state) consummated the act of fusion with an alien cell; and if in so doing it experienced a tremendous excitement which it spiritually felt as sensual pleasure; why should not this excitement quiver on to neighbouring cells which were not engaged in fusing, and why should it not produce at least an echo of sensual pleasure in these. Why should that not keep on until it reached the cells of the central nervous system? Why should it not strike the key of sensual pleasure there, too, for this key lay in every cell as a possibility of responding to a stimulus—as a primeval heritage of life? Why should not the increased sensibility of these central places (for that after all is their departmental specialty within the whole organization!) reinforce the impulse explosively, as it were, and thus produce a tremendous paroxysm of sensual pleasure in the union of the state?

The utility of this connection was obvious, because sensual pleasure was a "pleasure," something agreeable for the person concerned, and to which some heightened state of harmony in the machine of the body corresponded.

The first acquaintance with sensual pleasure is a surprise for every maturing human being, for every cell state in us. That is to say, it is a surprise for our brain. In the deeper stratum of our body, nature is already firmly rooted in tradition in this regard. Here nature knows exactly how the thing is done, and normally she already initiates you up there to a certain extent before the first actual contact with a human being of the opposite sex; for example, in one-half of the twilight field, in nocturnal dreams during early adolescence, where the dull tradition of the body steps in front of the still totally blank consciousness of the brain as its first teacher and shows a mysterious veil half lifted for the present. Then the memory of the brain connects up with these forebodings with the first real act of love. And from then on you cannot even think of the love of the senses without having this recollection of the flame of sensual pleasure play into it. Wherever the brain comes into play, it is a collector of souvenirs at the same time.

This already set in early. The recollection of sensual pleasure was early bound to become a great force, ever impelling the sexes to seek and find one another anew in the cell states, the many-celled persons, and therefore reinforcing the intensity of sexual love. That in turn redounded on the whole to the benefit of reproduction itself and the maintenance of the species.

This constant incentive was bound to become particularly important when the sexual act between the male and the female became more intimate and thereby more certain for the love-cells which were actually to fuse, but also, from the purely technical viewpoint, more complicated to the point of becoming acrobatic. Think of the acrobatic feats in the act, such as the snails and the cuttle-fish perform. Powerful whips are already necessary there. Think what the instinct of love has to overcome in the way of opposing instincts, as in the spider story, for example. Up to us: what insuperable difficulties would again and again be interposed by reason with its affectation of wisdom, by modesty which has been acquired by education and which even so is to a certain degree indispensable in civilized life, by egoistic fear and egoistic defiance . . . if nature did not have this demon, which is already close to us in our dreams from the first springtime of our life on and later on does not let us get free from the memory of it for a single moment. Art has frequently tried to picture sensual pleasure as Mazeppa's wild steed, running away with us poor humans chained to it and restlessly

storming on whither it will. But it was also a steed of evolution, of the evolution of life and love, that dashed madly through the ages with these beings. Sensual pleasure again and again helped to pioneer in opening up the evolutionary way. I characterized sensual pleasure before as a "premium" of love-life. Every premium, however, possesses not only the power to reward, but also to enlist effort. If a possibility existed of letting the cell states as a whole participate in sensual pleasure by means of their nervous apparatus, the whole cell state would necessarily be eager and strive with utmost energy actually to obtain its share of this premium. This possibility must have existed just as well as in the case of every other form of sensory excitement.

This phase of love was not to evolve without a little tail of oddity, however. You will recall that the act of mixing between the individual love-cells (the sperm-cell with the egg-cell) had at an early stage been frequently transferred to the outside. Clear out of both states, to which these delegates of love belonged. This very generally applied to the sperm-cells from the very beginning. On attaining a certain degree of maturity, they left their parent animal, their parent state, and only on the outside, more or less distant from it, did they experience their fusion with alien egg-cells. But we saw how in many cases these egg-cells, too, separated completely from the mother long before fusion took place. Think of the herring and the salmon. Eggs as well as semen fall into the open water. Only there does their marriage take place. Only there do they first experience the act of mixing and therefore (if our assumption is correct) the sensual pleasure incident to the act of mixing.

There is no possibility for this excitement of sensual pleasure in the cells that have swarmed out actually and directly to release sensual pleasure in the central nervous system of the parents.

No matter how brilliant nervous transmission might be, it was impossible for state sensual pleasure to catch fire from the love department's act of mixing, for this no longer took place at all within the borders of the state and the connections in the state!

If, therefore, a connection was to come about after all, there was obviously nothing else left to do but to tie up the release of this state sensual pleasure with the last act of the love-cells that still took place on the threshold, as it were, of the parental cell states:

not with the sexual cells' act of mixing, but with their act of separation from the parental body.

However, the generation of sensual pleasure at the terminal station of the line reduced it to at least one-half its strength, and it might well be questionable whether this would still be sufficient to release the whole effect at the central station in the brain. I believe that it really would have worked even that way, provided improvements kept on being made in the central station so that it became more and more sensitive and learned to react to weaker and weaker stimuli. Just as one could get along on the telephone with one's voice lowered by one-half, provided that the apparatus functioned better. The softer the key of sensual pleasure in the brain could be struck and yet have it give forth the whole full-bodied sound, the more probably could the real pressure of the finger be weakened and still produce an effect even as a mere breath of its old force.

I might remind you that in this region of the transmission of stimuli and cell excitation considered not merely spiritually, psychically, but also physically, considered as a whole, psycho-physically, no matter how you imagine the more specific connection between spirit and matter, we have a big field of occurrences, in which the reduction of stimuli to one-half strength and even much less, yet with the full effect produced, is the regular practice: namely the realm of memory in the broadest sense. It takes a very powerful stimulus to impress a thing on us the first time. The external impression can be weaker on repetition and yet it will produce the whole picture: at the moment, a remnant of the former excitement comes up from within, a "memory" takes the place of the missing part of that weakened external impression. The more frequent are the repetitions, the more energetic does this inner co-operation become. In the end, a mere shadow, a mere hint is required for memory to bring it up in its entirety. Richard Semon developed this exhaustively in his ingenious theory of the "mneme" (as he calls the total spiritual and physical complex of these "memory-like" occurrences, meaning occurrences governed by laws similar to those shown in our human memory).

One might well consider to what extent this could be directly utilized here for bringing about the gradually increasing ease, with the evolution of animals, of releasing the state sensual pleasure in the higher nervous apparatus by means of actual stimuli from

the more specific love department that keep growing weaker and weaker.

In any event, these connections were not perfected all at once. Long periods of time and countless experiments were necessary for the organization and proclamation of the state union in the many-celled formations. Frequently the question may have trembled in the balance whether there would be any sensual pleasure for the cell state at all. On the male side of the ledger, where the sperm-cells from an early stage on swarmed out for their nuptial act of fusing far away, a deficit of only one-half strength to the stimulus may long have existed, before the nervous apparatus became improved to such an extent that it obtained the whole effect from only half a stimulus. Perhaps one is still reminded of this to-day by the fact that the feeling of sensual pleasure is somewhat more intense in the woman than in the man; but this is a dark matter, and other factors may play into it.

Once a half-strength stimulus could release the whole effect in the state, one thing became obvious.

For the general advantage of the whole state, the most important moment in the separation of the love-cells from the parental state was not so much the actual separation of the sperm-cell or egg-cell from the organ of love, but it lay in the cruder process of conducting and thrusting these liberated love-cells out of the cell state, out of the many-celled body. For this act represented the really final fact, the decision. It was the last station on the road to the act of mixing which it was still granted the parental cell state could participate in as a spiritual and physical occurrence of its own. It might be a summary act in which a huge number of love-cells together received the last parental blessing. For the state as a whole, this act without any doubt had the greatest similarity objectively to that original act of division, which made two amœbæ or bacilli out of one. Why should not the sensual pleasure of the brain concentrate on this act?

This necessitated more than simply adjusting state sensual pleasure to respond to half a stimulus.

The stimulus as such now had to be completely switched around and projected. It had to be transferred to a substitute.

Heretofore, the procedure had always been in principle as follows. An excitement of sensual pleasure in one or several simultaneously maturing departmental cells in the love-organ continued

to quiver on to the centralized management of the cell state and there it released the state sensual pleasure in the parental being. If the sensual pleasure resulting from the fusing of the love-cells had already been surrendered in return for this, the sensual pleasure of their separation in the last act of cell-division on the ovary or in the semen manufacturing plant remained to the last—the sensual pleasure of the moment of the formation of genuine new germ-cells, which from now on possessed the possibility of emigrating.

But this time the stimulus of their actual expulsion was involved.

The sensual pleasure of actual separation must in all probability have been all over long ago for the cells, particularly if the act merely involved the summary opening of a door for many that had already gathered one after the other in loose waiting formation. If state sensual pleasure was to be connected with this opening of the door as a stimulus for its release, then this release would have to take place through some totally different cell stimulus in this region of the body. By means of a substitute; a cell excitement which would invariably make its appearance here but which would now be different in principle from the excitement of sensual pleasure.

The most obvious thing would be by the frictional stimulus of the love-cells swarming out against the cells at the edge of the gateway which they passed.

This frictional excitement would then quiver through the transmission apparatus to the central station, and there it would serve as the pressure on the button which would conjure up the whole fiery wave of state sensual pleasure.

According to general analogies in this field, this complete interpolation of a substitute seems to me thinkable.

You encounter it daily in phenomena of memory in the simple fact of so-called association. Two things have repeatedly impressed themselves in close connection with one another; they have become "associated" in memory. For example, the body of a beautiful girl and a certain perfume. Later on it is enough to awaken the one recollection and the other one will come along too as an inevitable association. You smell the same perfume at a totally different spot and instantly it conjures up before your soul the picture of that particular beautiful girl's body, so distinctly that you can almost feel it.

The peripheral stimulus of the cells at the sexual gateway when

the sperm-cells were ejaculated had already been connected for a long while in the central nervous apparatus with the feeling of sensual pleasure, but at first purely by chance, because of the close temporal succession of the two things. One day it might have happened, however, that this frictional stimulus alone released some sensual pleasure in the upper story of the state, even when this stimulus was itself not accompanied by any genuine stimulus of sensual pleasure, as in the case of chance external friction, for example. Gradually the genuine feeling of sensual pleasure would no longer have been excited at its original place at all, but the key in the brain would have sounded every time that the frictional stimulus at the gateway reported to it. And so, matters would gradually, very softly, quite unnoticeably have become switched around until the key in the brain did not know how to do anything else but react with the full force of sensual pleasure in its sphere in response to the friction of the gateway.

The following analogy can make the matter thoroughly clear to you. Semon has demonstrated in the clearest possible way that such laws of memory can play a rôle in the seemingly remotest organic occurrences and that they may be drawn upon for explanations; in fact that one must do so. Recall from what we said before how Semon applied these laws of memory in a most ingenious manner to the whole field of the reconstruction of new embryos out of germ-cells. Recall, too, what we discussed before in connection with fertilization; how by the addition of certain chemicals and even by brushing them, egg-cells were made to begin with cell division for the purpose of constructing an embryo, even when no fertilization by a sperm-cell had given the signal for it beforehand. This was certainly a serious enough matter. And yet, by means of a substitute, by a substitute signal the egg-cell could be stimulated to the point of beginning to do its whole work! Why should it not have become possible to stimulate the key of sensual pleasure in the brain by means of a substitute signal and make it sound in full; and why should that not have made a complete exchange of stimuli possible one day?

You can imagine this perfectly well. And with it you have the key to the further procedure.

A stimulus of the sexual gateway's peripheral cells became the substitute for releasing state sensual pleasure. This can be defined somewhat more specifically. What shall we imagine this substitute

stimulus to have been originally, as a sensation of the cells themselves? It is not sensual pleasure. These cells in the region of the sexual gateway are not love-cells. They are simple cells of the skin, and are excited only at the moment by the love-cells that stream out; an excitement which in turn strikes the big key of sensual pleasure in the brain. But undoubtedly there was also a direct sensation to their own excitement from the beginning. What are we to imagine this sensation as? We look around to see what sensations the skin, which otherwise is plain skin and which our brain comprehends as such, customarily has.

Let your thinking tarry for a moment with the evolution of the thing that crosses our path at this point, namely, the skin.

The skin, as you will remember, was really the original formation, the first deed of the incipient cell states. Sociable volvoxes constituted themselves into the cell skin of a hollow bladder, a first bladder wall; and with this began the cell state, the many-celled person; therewith you began with this in the primeval mist of terrestrial things in antithesis to the merely one-celled amœba. Then in the gastræa stage, this original skin divided into the genuine skin and the wall of the intestine, the one on the outside and the other on the inside.

The intestine took care of nutrition. The skin propelled and defended the organism, and was the decisive seat of sensations of the outer world. It took up light stimuli, sound stimuli, external blows and pricks and contacts of every kind.

Further, the skin was still to the full extent what later became the nervous system. The entire nervous system with all its organs of sense and internal workshops originally developed purely from the skin. But the finer workshops and studios came to be increasingly transferred toward the interior in the form of hollows, grooves, and bags of skin, for reasons of protection. And so the brain, the spinal cord and the whole finer network of nerves were formed from outer pieces of skin, which sank by slow degrees into the safer depths of the body, according to the same fundamental principle which caused the stomach to be pushed into the interior. The finer and the more complicated the animal body's interior work of art became, the finer and more complicated did this network of what was originally skin become spun throughout its whole interior. But now the strictest kind of connection between the sen-

sory workshops in the interior and the receiving stations for the outer world had to be maintained. Though the actual seat of sensation for the whole organism, the cell state's "state soul," was withdrawn far back into the hard skull and the spinal column as brain and spinal cord, yet these very old parts of skin that had wandered inward continued to keep in "touch" in the most literal sense of the word with the outer surface of the body, the old genuine seat of the skin, by means of nerves as connections, which in the final analysis were only very fine extensions of skin, long points of skin directed inwardly. In your case, this outer skin continues to take up the light-waves as well as the sound-waves, the irritating prick of the needle as well as the comfortable warmth of the May sun and so forth. The actual seat of your personal sum-total sensation is no longer at the receiving spot on the surface; but the telegraph wire of the nerve is interpolated, and this lets the stimulus of light, sound, touch or warmth quiver on to the internal skin organ, the spinal cord and brain.

But the surface of your skin has already divided up the work in a definite manner. Two places, the eyes, watch out exclusively for light stimuli. Two others, the ears, only for sound stimuli. The nose solely for stimuli of smell. These outer receiving places have sunk in somewhat and protected themselves: the retinal surfaces for receiving light lie deep behind transparent outer skin; the ear has become a closed capsule; and the nose forms a pocket with its smelling mucous membrane. Only reaction to pressure and temperature has remained the common property of almost the entire outer surface of the skin. Wherever I prick you with a needle or tickle you, on the arm or leg or shoulder or breast, you feel it there, and more specifically, you feel the prick of the needle unpleasantly as pain; and you likewise feel the pleasant warmth of the sun at each of these places.

General sensation also received a connection with the nervous system and the brain. It also developed more sensitively at some parts of the body and more crudely at others. Think how sensitively your finger tips touch. How certain places on your skin are more ticklish than others. In many animals this is even subtler than in you; many animals touch with the tip of their tail as you do with a finger; the stretched skin of the hand and side, with which the bat flies, is a veritable instrument of precision for detecting the most minute differences in air pressure; and that is

why blind bats can fly between threads stretched across their course without bumping into them. But this general skin sense has never attained the interpolation of such ingenious apparatuses as the eye or the ear.

All these developments only came about step by step between the oldest skin animal and you. You have animals to-day, in which the whole genuine outer skin still represents the entire brain and hears or perceives light. Only gradually do you see the brain become differentiated as a central organ which seizes all reactions of all the skin cells and brings them together and gives ā meaning to them for the benefit of the whole, as a spider draws together the strands of its web. Then you gradually see how this or that place on the skin perceives only light, for example, and does so for all the rest as well. You see this place remaining in contact with the brain by means of a certain skin fibre, the optic nerve, and at the same time you see how this spot sinks in, how it first forms a pit, then a pocket, finally a closed capsule which lets light pass only in front, in other words how it gradually becomes an eye. The whole higher animal kingdom is a continuous example of these ingenious steps forward.

The more splendid the brain and the mort artful the sensory apparatuses become, the more does the great surface of the skin lag behind as a sensory field, until it almost seems as if it had stood still, as if it had become petrified in its original condition, merely reacting to more or less primitive stimuli of pressure and temperature. So many other functions likewise came to be taken away from the outer skin, such as breathing and excreting, and in most cases also its special employment for protective and covering purposes and as weapons. So that one can understand that limits were necessarily drawn to its improvement in sensibility.

And yet it was this general, unspecialized remnant of skin with its simple capabilities of registering pressure and tickling sensations, which now became the decisive factor in the further evolution of sensual pleasure and which received an unexpected extension of its stock of feelings by virtue of this connection.

In the most primitive and the broadest sense the love-cells, too, were in the original skin at the beginning of the evolution of cell states. The final separation of the love-cells from the cell state took place on the skin in the beginning, and so did the fusion of the love-cells, when this act still took place on the parental cell state.

No wonder that the relations of the love-cells to the nervous apparatus dated back to their own original skin childhood, and that their private sensual pleasure quivering into nervous apparatus could still become state sensual pleasure directly for a long while. For at first it was only the excitement of sensual pleasure in skin cells which in turn quivers on as such through extensions of skin cells.

This direct connection came to an end, however, undoubtedly as a result of the increasing localization of the sexual department in the interior, which we described before. You will recall that for a long while the germ factories in the cell state were hunting quarters and looking for the best possible shelter. They set up shop in the stomach, in pockets of the stomach, and finally in the closed new abdominal cavity. Then when they matured they had to get out of here again and into the open by some gateway or other. We saw how the kidney offered an exit, which later became united with the anus, and so forth. A definite gateway finally resulted.

It was no doubt along this succession of evolutionary stations that the place for the excitation of sensual pleasure was localized and developed; that substitute, by virtue of which it was no longer the excitement of the emigrating love-cells themselves which connected up with the nervous system and which released the state sensual pleasure, but only the excitement of certain genuine skin cells in the vicinity of the gateways, stimulated by the passing of these wanderers of love, which did so. But at that time, the general property of the skin to react to stimuli of tickling, pressure and warmth alone came in question for such excitement at this particular place.

Take yourself as an illustration. Complex as you are in all matters pertaining to love, one thing immediately becomes clear. In a certain sense, your entire skin is still connected with potential sensual pleasure somehow or other. It is one powerful procuress for sensual pleasure. All the parts of the skin which developed into special higher organs of sense take part in this to some extent. As the retina of the eye, as an organ for classifying sound-waves in the ear, as the nasal mucous membrane which takes up smells, these different skin rubrics are able to make the key of sensual pleasure sound in the brain very noticeably on occasion. It is not without reason that we speak of sensual pictures, sensual looks, sensual perfumes, and even sensual music. However, all this is relegated to the background as soon as you approach actual physical

contact. The intensity of the special inclination to sensual pleasure already increases unmistakably with the simple pressure on the skin during an embrace, with a kiss, and with the definite agreeable tickling sensation produced by warm soft human skin against skin. This sensitiveness increases rapidly toward the sexual region, yet without forfeiting its general character; it grows in a simple ratio to the ever greater approximation of the contact stimulus to the sexual gateways. The climax is reached at a pretty closely circumscribed spot in both love-partners: the external male sexual member in the man, and a certain region of woman's internal organ of love.

If you examine the critical parts of the body where you "get hot," as it were, in looking for the hidden possibilities of this excitation of sensual pleasure, and if you examine these places for the purpose of ascertaining their anatomical stock on hand, you will find certain textures woven of nerves, which permit us to speak of "organs of sensual pleasure." These merely prove to be more powerful sensitive plates and condensers of the skin's general sense of touch. This organ has no special "sexual sense," that is quite out of the question, much as one has tried to detect something of the kind in human beings from time immemorial. The simple excitation of the skin and the simple tickling sensation of the skin release the colossal brain storm of completely unleashed sensual pleasure at this spot. You note that a quantitative increase in the sensitiveness of the skin has come about in the immediate vicinity of the sexual sphere, and that it is therefore undoubtedly influenced somehow or other by this sphere, and that this increased sensitiveness is identified by the knots of nerves in the so-called organs of sensual pleasure. This sensitiveness increases and decreases periodically with the degree of your sexual matureness during life. But in every characteristic respect the apparatus still remains the old original tickling apparatus. And in the case of the male sex, something further occurs when this apparatus is engaged in its principal function, in consummating the sexual act, which must, I believe, clearly demonstrate this innermost relationship to the most reluctant person.

I do not know whether you were ever struck by the remarkable similarity in one respect between the male's part in the act of procreation and another act of your body, with which you are ex-

tremely familiar and which is a matter of daily occurrence; namely the simple act of sneezing.

Sneezing is a typical tickling phenomenon, and its mechanical course serves a specific purpose. Something or other lightly tickles the mucous membrane in your nose. A tickling irritation which quickly increases results. At last a more or less violent explosion is released, which thrusts out the tickling body by an automatic act independent of your will. Nature's primitive practical custom involves a very pretty act of automatic regulation. The tickling body, whose expulsion is bound to be desirable because it is a vexatious foreign body, itself releases the explosion which removes it. Since light tickling produces a mild sensation of pleasure, man, the intrepid seeker after pleasure, has developed even this harmless matter into a little sport and a luxury, by basing the practice of taking snuff on it, employing nicotine as an additional stimulus. But that does not concern us any further.

Now compare the male sexual act to the act of sneezing. In the former case you also have a tickling phenomenon of the skin, gradually increasing to an abrupt, automatic eruption, at the climax of which the male semen which is waiting in readiness is violently ejaculated far forward without any will on our part. The object is a different one in this case, but the method is strikingly similar to sneezing. Even the well-known "bending together" of the body in the sexual act has its analogy in the behaviour of a person sneezing. In fact, if I were to compare the two acts according to their purely mechanical side and their direct sensory connections, I could, with the best of will, indicate no valid difference with a single exception . . . that the consummated act of sneezing can release only the minimum feeling of relief from the tickling sensation, whereas the tremendous neural storm of suddenly released male sensual pleasure takes place at the peak act of "sexual sneezing"—a contrast which even the comparison of a cannon shot to a pinch of snuff would quite inadequately express.

For naturally you must not believe that I am trying to persuade you that the sexual act is merely a kind of sneezing. In the final analysis the characteristic thing about it which makes it unparalleled is that it actually does release sensual pleasure by means of tickling the skin and by the semen sneezing apparatus, and that the place where this explosion of sensual pleasure takes place became projected into this apparatus at some time and somewhere

among our animal ancestors. This tremendous, absolutely unique, fabulous increase in intensity, this pleasure which is deepened and heightened into feelings of death and resurrection in you, which is evoked by tickling the skin and by that form of "sneezing" during the sexual act, and only by striking this key there, so that it resounds through your whole innermost self as with a super-individual universal bass note . . . that, I believe, is the result of the tickling sensation of the skin at the "sneezing" sexual part having acquired the whole demonic plus quantity in the way of sensations of pleasure which had become available elsewhere in the higher, many-celled individual from the moment that it renounced all share in the feelings of pleasure resulting from the actual division and fusion of individual cells.

This localization of the utmost possibility of sensual pleasure not only to the tickling of the skin at the sexual gateway generally, but in the case of the male to-day to an eruption similar to sneezing for the purpose of ejaculating the semen, is something whose evolutionary connections can lead us on further.

I am of the opinion that the human male still mirrors a general original stage for us in this respect.

It seems to me that at a certain station of evolution, sensual pleasure was still regularly released in both sexes by an intensification of the tickling sensation of the skin in the sexual region to the point of a regular act of sneezing, which hurled out eggs as well as semen, as the male's semen alone is now ejaculated. This was the stage which immediately preceded actual copulation between higher many-celled beings. The stage of cell states, of many-celled beings, such as you and I are, had already been invented. All genuine mixed love was from now on definitely limited to the egg-cells and sperm-cells of these big animal persons. But evolution had not yet reached the point where the parental cell persons facilitated the act of mixing on the part of their cells by means of an act of copulation which would be as intimate as possible. The father animal still threw his semen and the mother animal her eggs into the open water in the form of a pollution, on the lucky chance of their finding one another and uniting there. At this stage, the feeling of sensual pleasure was already consistently connected with the irritation of the skin at the edges of both sexual gateways. But the pressure stimulus which released it still consisted directly and only of the sexual substances independently pouring forth at their

peak of maturity; the milt in the case of the male and the roe in the case of the female.

It must have been very practical at this time to make use of the tickling mechanism, which had long existed at other parts of the skin, for developing and perfecting the simple excitation of the skin. As they pressed forward, the crowding jamming sexual substances tickled the edge of the gateway until it began to "sneeze." Then the ejaculatory thrust of the sneeze independently brought about the emission of the masses of semen and eggs: it gave these substances that were already crowding outward an additional impetus, so that they were sent flying out like a shot, without hesitating for the least little instant on the threshold. Gradually the matter was so arranged that all the wanderers that were ready to set out first gathered together within and by their joint tapping excited the spring of the sneezing mechanism, till the apparatus at last snapped into action and they were all transported together and set down far outside the front door at one shove.

"In the form of a pollution" is a good expression in this connection. In the case of our adolescent boys and mature men who abstain from sexual intercourse, the mere simple internal pressure and stimulus of the ample store of mature semen is frequently able to set the hurling spring of the apparatus of emission as well as of sensual pleasure in motion during sleep, just as was still the general rule at the fish stage. A number of other things which help to intensify the stimulus of the urge are interpolated in our case; for instance the congested masses of blood in the erected member, whose real purpose can be achieved only during a genuine act of copulation. A strong flow of blood to the sexual gateways generally undoubtedly helped from a very early evolutionary stage. Then in the case of the higher vertebrate animals, stimuli of temperature must have played into the matter along with this; stimuli to which the skin was always very sensitive. The internal blood-heat of the male semen undoubtedly continues to play a small rôle with us in the release of the female's sensual pleasure. In the old trials of witches it was characteristically said of the devil that he lacked this.

At this stage, as I said, the release of sensual pleasure coincided with the ejaculation of the sexual substances by this "sneezing" process in the male and in the female animal. I believe that herein lies the reason for the otherwise extremely curious fact that in the female to-day, the supreme moment of sensual pleasure has still

kept a distinctly noticeable connection with a rudimentary act of ejaculation. Woman preserves typical traits of sexual sneezing in the act, to which sensual pleasure has remained tenaciously attached to this day. There is no idea, of course, that this "sneezing" still serves to ejaculate the female egg. Rudimentary as it is, it has clearly lost all connection with this. As a matter of fact, an emission of fluid which is a matter of total indifference to the distant ovum takes place. But the movements and feelings are still characteristic ones in the old sense.

In this stadium of pure double pollution in the case of the male and the female, with the pure sensual pleasure of the urge outward from within, something new was bound to follow very shortly in the course of evolution as we narrated it before, and this innovation again marked an important advance in one point at least.

Though the pollution stage could in part maintain itself in your genealogical tree to the region of the fishes, copulation gradually and decisively made its appearance here, and elsewhere it did so much earlier even; at first in the gentle transition of the male and the female coming more or less close together without however locking their respective gateways together as yet.

The organs of the senses, which had meanwhile developed, became important here. The sexes saw each other, heard each other smelled or—in the case of aquatic animals—tasted each other. You might think for a moment that sensual pleasure could have made a more specific use of this from an early stage; for instance, that the inner urge of the sexual products could have set the spring of ejaculation in action only when an additional stimulus of sight or hearing or smell proceeded from the opposite sex. Such things undoubtedly did frequently play into the matter in various ways. We think of this in the case of certain pathological conditions in our love-life, in which the mere visual impression of a naked body or an enticing picture frequently sets the whole apparatus of ejaculation and sensual pleasure in operation in extremely unpleasant fashion. That certainly is not normal with us, however. Among animals smell played a powerful rôle here. But that takes us more into the field of general sexual attraction, which we still have to discuss.

Genuine physical contact of the two partners in love became decisive for the direct and actual release of sensual pleasure, and this had no doubt overtaken the finer development of the higher

organs of sense for producing this effect at a distance at an early stage. Alien skin touching and tickling skin. The skin of a second being of one's own sort, to which one was perhaps already drawn by some agreeable smell or something else. At first touching any optional part of the skin, whence the tickling sensation could radiate via the central station to the region of the sexual gateway, setting the apparatus more quickly in motion there. But gradually exciting the sexual gateway directly as pleasure, as a tickling stimulus. With any optional part of the other's body at first. But in the end, the sexual region of the one partner coming to rub and excite that of the other. And this becoming generally and normally necessary in order to release the whole process of "love-sneezing" in both parties and to arouse complete sensual pleasure.

All you need to do now is to let those former pictures pass before your mind's eye once more. The blue char, whose entire bellies touched during their love-leap and for which this contact is simply the signal for their simultaneous mutual pollution with milt and roe. The salmon. And so on. Here love's ripe gifts already lie in such a state of preparedness that it only requires the slightest push of the button in the literal sense to make them appear. This is the reason why it is so easy to remove milt and roe from fish artificially, by gently stroking the belly with the human hand, on which fact the success of artificial fish culture rests. Gradually, however, there came to be more to it, and necessarily so.

The toads in the puddle here still excite themselves entirely by rubbing the skin which is not drawn directly over the sexual region. The male, clinging pick-a-back to the female, rubs the skin of its belly against the skin of its beloved's back. On the other hand, in the case of the salamanders, which love gateway to gateway, the sensation is already strongly localized at the edges of the gateways. But these are still cloacal gateways. Very much in opposition to you, therefore, their centre of sensual pleasure is still in the anus. (Incidentally, this case is interesting for the evolution of pederasty.) This condition of affairs persists via the lizard and crocodile to the region of the original mammal.

The practice of the female keeping the eggs in its body for a longer or shorter time beyond the act of union between the mates has meanwhile developed generally. If the factors of sensual pleasure in the male and the female are not to be frittered away far

from one another, a corresponding crisis must arise in female sensual pleasure. From now on the female animal must definitely renounce the internal stimulus of its own eggs as they press forward; and must therefore adjust itself entirely to a tickling stimulus coming from the outside, to its sexual gateway being rubbed by a foreign object and normally by the male.

In this particular field of the evolution of love, from the salamander on up to your own series of ancestors, nature attaches the greatest importance to the sexual act taking place as intimately as possible. For this purpose, the joint release of sensual pleasure in both at the supreme moment of union cannot possibly be done without. At the same time, however, adequate provision is now made for pure tickling and rubbing from without to suffice for the female, and this is brought about by transforming the tickling and ejaculatory region of the male into a real organ of copulation, which crowds its way as a plug into the female gateway in the act and produces the most vigorous excitation there.

The female retained its eggs in its body beyond the act of copulation. The actual mixing of the sperm-cells and egg-cells (in some cases long after the act) in turn took place in its body. Something of the original condition of living beings returned with this in a certain sense. One might well ask whether the female's sensual pleasure could not have become attached anew to this most intimate act of cell fusion; that the female animal would have felt sensual pleasure quivering on in itself at the moment when every egg-cell in its interior became wedded to a sperm-cell (more or less long after the external sexual act). This did not occur. No such belated thrill of sensual pleasure ever tells any human female anything as to whether this innermost conception (perhaps days after the decisive act with the male) is taking place. But you can understand that to make such a radical and one-sided change belatedly would no longer have had any sense. The transfer of the key of sensual pleasure to the cells of the skin at the sexual gateways happened to be an accomplished fact in the female as well as the male. Sensual pleasure had here received a purpose as a magnet for uniting the mates, which redounded to the benefit of the sperm-cells and egg-cells and their act of fusion in the happiest fashion. And nature also provided that the female key in this place would be sufficiently played, the more the male copulatory member became developed as an ingenious player.

The male kept everything, now as before: the urgent desire for relief from within, the tickling practice of rubbing against the female, the sneezing explosion at the climax together with the ejaculation of the semen, and sexual pleasure concentrated in this climax. The female staked everything on the tickling friction by a foreign body, at the climax of which sensual pleasure was customarily released; such urging, pumping and ejaculating phenomena of the female organ as still played a rôle in the old heritage served expressly and exclusively receiving purposes and the release of sensual pleasure: in part they smoothed the road for the semen (with moisture) and in part they narrowed the path of the copulatory member by means of spasmodically growing tense and swelling up, thereby increasing the frictional possibilities. From now on, the actual fertilization of the ovum in the interior as well as the later delivery of the maternal eggs or offspring remained totally dissociated from female sensual pleasure; one can even say, a total stranger to it.

No essential changes have taken place up to us. The more detailed development of the male as well as the female rubbing places at the sexual gateways and thereby the ever finer adjustment of the key of sensual pleasure on the road from the crocodile to you had merely to be connected very closely with the several evolutionary stations of the "machine," which we described before.

Anal love disappeared in both sexes at a certain height of evolution. The whole act of copulation was consistently transferred to the new special gateway for urine and sexual materials. Therefore the key of sensual pleasure likewise definitely located here along with all other apparatuses. That fleshy plug with the semen groove had meanwhile developed in the crocodile as the original form of the male member. It furnished the essential rubbing surface for the male in the act from now on. And so the place where male sensual pleasure was released became concentrated in it. But we also saw such a plug develop in the female, pushing toward the male plug for good old reasons of utility, for the purpose of forming a sure semen canal with the other one in the act. Pressed against the male plug, it had to form the decisive rubbing surface of the female against the male in the act. And so the key of female sensual pleasure was bound to become concentrated in it just as logically too.

Afterwards, when the male plug became an enclosed semen pipe,

the other utilitarian purpose for this female tap receded. But now sensual pleasure kept it, simply because it happened to have been constructed here and because its situation as a projecting frictional plug, which swelled up in the act and received the most powerful sort of rubbing, made it extremely useful for this purpose. The female plug in the end became a pure pleasure plug . . . still baptized the "tickler" in German and thereby having its function duly recognized.

You now understand what nature had preserved in it, in addition to what it formerly had! If in the end it appears to become stunted again to a certain extent in the humān being and if its base seems to be used up for making those little labial portieres, that merely signifies spreading out the key of sensual pleasure in its terrain; just as it still extends into the small labia in our case. Furthermore, you must not picture this localization confined in too extreme a fashion to one spot; light excitations of sensual pleasure are possible on the entire skin of the body, and they are able to sound along faintly now and again, now here and now there; now as before. The erotically excited kiss as well as the inward feeling of physical well-being, which is so difficult to describe, of a mother nursing her child at her breast, feeds on fare that is both coarse and infinitely fine and becoming finer; but all this in the sense of the primeval evolutionary fact, that in the beginning the whole skin was the seat of sensual pleasure.

This latter historical road in the evolution of sensual pleasure again solves one of those riddles in our human love-life for you, which seem to justify that cry of anguish: *Credo quia absurdum;* namely the question why the human female's moment of sensual pleasure no longer has any direct relation to the actual detachment of the ovum from the ovary. Such a demand would again be a cry for something that was long ago antiquated . . . a cry for the fish and toad stadium, where the female experienced sensual pleasure, when the eggs left its body—a stadium which the reptile had already abandoned because it was impracticable.

If you look back upon this whole evolutionary process, it must become clear to you that it has made one consequence inevitable for higher and highest living beings. No matter how ingeniously the releasing tickling apparatus was hooked up with the parental act of union, it could not undo the decisive move: the fact that

henceforth the sensual pleasure of these big parent beings no longer necessarily coincided with actual procreation, namely with the fusion of sperm-cell and egg-cell.

A great turning-point in love-life, which from now on became fundamental, lay in this fact!

Adjusted to the tickling friction of certain parts of the sexual organs, sensual pleasure could be experienced to the fullest extent by the parental beings from now on without any genuine procreation.

It could be aroused by the sexual act without there being a possibility of a real union between a sperm-cell and an egg-cell, of actual procreation, taking place later on. And it could likewise be aroused from now on by the simple tickling friction of the sexual part in question by something different from the corresponding rubbing part of the opposite sex.

The consequence was an iron one and not to be dismissed; it now belonged for all time to the fate of love-life. We human beings were born into it.

On the other hand, this fact made onanism possible. The "Good Fairy Utility" of further evolution obviously had no fear of this, however. Otherwise something would have been done against it; but nothing happened. Onanism already exists quite distinctly among animals, as you know from the monkey. In the course of a long life and long sexual maturity of individuals, much sensual pleasure could be squandered on the side in that way without seriously harming the species. The actual waste of semen on the part of the male would still remain within the scope of the tremendous surplus with which nature works. Pathological manias in this direction had no tendency to become hereditary; the same automatic regulation of sterility held sway here, that invariably kept homosexuality within bounds. Furthermore, to this day and to ourselves it is perfectly clear that, given free choice, the normal human being, not pathologically malformed, keeps on preferring the genuine sexual act to onanism for reasons of enjoyment as well. The eye alone sees to that. The living, alien body is in the end superior to all imagination. The normal chain of crescent stimuli with all its aids and associations can be replaced by nothing in the long run; least of all for the human being wanting to experience the full force of things here as everywhere.

On the other hand, the countless real sexual acts, in which no

genuine procreation was achieved, resulted. Utilitarian natural selection did nothing to prevent this either; in fact, from a certain evolutionary point onward it put the brakes on less and less. Among animals, periodic intermissions between periods of sexual excitement dropped out entirely. But the sexual field is thrown almost entirely open to man. In part the same negligence which banks on a vast mass of surplus materials is involved. It must further be added that what takes place here is not merely the dissipation of surplus production. The number of acts increases the probability of procreation at a favourable moment, and that alone is worth paying out nature's full premium every time. If there is only one winning number to every hundred chances, the game is worth while for the species. In this sense it is absolutely and unconditionally useful for sensual pleasure to have more elbow-room in the world, as it were, than being limited to actual procreation. Even where sensual pleasure goes far beyond that, it nevertheless continually makes propaganda for procreation.

The more valuable the individual becomes to the community beyond the direct purpose of procreation, the more do other values play in here. This applies only to human beings. For example, if for some organic reason which does not make her inferior otherwise, a woman is permanently prevented from bearing children but can participate in the sexual act, with the normal release of sensual pleasure, that after all is something more than a mere waste. Such a human individual has a value for humanity, even without procreating children. Whatever makes this individual richer, more clarified and more harmonious, benefits us as well in other ways. Who will deny, however, that sexual experience even to this degree, the inward experiencing of this station at least in the great mystery of love, surrendering oneself to the great depths of nature beyond the little ego, that lies in the merging of two human individuals in one another for a few moments which yet may signify and fasten bonds of life, who will deny that all of this constitutes a great possession, which enhances and enriches such a personality. If it is bad that these individuals cannot experience the grace of actual parenthood, yet how much poorer would they be if nature did not grant them this much at least. A poverty, which we would grievously feel in the community as well in the hardening of their characters, which otherwise might have been splendid ones. For we know how much physical health is given us on this stretch of na-

ture's great road. We all know the physician's good word about the roses which this fulfilment of life conjures back to pale cheeks.

A third consequence, which applies exclusively to human beings, is much more serious. That is the possibility of keeping love's most intimate act and yet purposely preventing procreation; in other words, sexual intercourse with the employment of preventive means.

Our conversation will bring us back once more to this specifically human matter in connection with the evolution of love in civilization proper. Let us merely note this much in advance, that it too has its sacred side; in the converse case where a human being is capable of procreating, but is otherwise sick, and where the danger, even the certainty, exists that a treacherous disease would be transmitted to posterity. If the consumptive employs means of prevention, he is doing mankind a service. He is acting in the high sense of promoting natural selection. He is giving an active countersense, and one that is worthier of human beings, to the iron dictum of logic that the sins of the fathers are visited upon the children. His view reaches higher than the word "sin" extends. He consciously sacrifices his happiness of parenthood to the sacred feeling of responsibility to humanity. Far from being able to endanger it, this pure and noble side of this particular consequence will only serve to improve the species. Here the proposition likewise holds good, that it is a blessing for individuals harmoniously living out their lives to the full, that on the very basis of this possibility the full force of the rest of love-life to and including the great mystery of the sexual act itself can be preserved for the sick individual who heroically renounces procreation.

The only question is whether there is not another, really menacing side to this consequence; a worldly side, but one which is all the more potent on that account.

Despite all the good and bad inventive industry spent on them, the artificial preventive means in sexual intercourse are not yet infallible to-day. In every case, if they absolutely prevent conception they disturb the act of love somehow, or else they save the act of love at the expense of uncertainty about preventing conception. Perhaps this is merely a question of the immediate future, and one which could already be thought of as being done away with in the future. But in that case, a powerful old expedient of nature's would go by the board. The emotional thrill of sensual

pleasure in the act of love would from then on no longer play its part as an inducement, as a premium for the genuine act of procreation. Will mankind be able to stand having a natural connection, which obviously has been so long and so well tested, thus radically scrapped?

For the healthy individual genuine procreation entails serious consequences compared to the transient act of love with its sensual pleasure. Even normally childbirth means checks and inhibitions, pain, and in many cases danger to life for the mother. Important economic responsibilities toward the child come into consideration for both parents. Fear, selfishness, thoughtlessness and earnest thoughts of duty as well, might in the long run forge an alliance which would be bound to become thought-provoking. However, it seems to me that a regulation of this matter is constantly at work among us, just as I believe generally that we as civilized human beings are caught in nature's old iron regulating mechanism now as before, and much more powerfully than we customarily believe. Wise and wilful as we may often seem to ourselves, the "Good Fairy Utility" still has us entirely in her invisible net. Our clevernesses as well as our stupidities are only strands in her game, with which she selects and breeds us further, exactly as she did before in the organic world.

The most dangerous angle in that plot seems to be the economic angle. Many civilized human beings limit the number of their children or even discontinue genuine procreation entirely because they can no longer bear the economic responsibility. Here, too, the motive may be an extremely conscientious and even sacred one. An individual cannot check his condition of social distress and therefore draws the moral conclusion: better no children than children wretchedly suffering want or starving. The motive may be a sacred one, but the true consequence for mankind is not holy in this case. A general proclamation of this "morality" will quickly see the birth-rate sink below the death-rate. The competitive strength of the nation is reduced in first line; finally, when this principle comes into force universally, the strength of mankind generally will be reduced. We already have the beginnings of this bankruptcy of a nation in France to-day.

But as soon as these things become visible (and we already see too clearly and too wisely for them not to become visible), the necessary regulation will result, in my opinion.

The unfavourable economic conditions which keep individuals from procreating children are not eternal necessities. They permit a better order of things. Scientifically speaking, there can be no doubt that mankind's sources of production on earth are sufficiently rich to guarantee a far more favourable general situation. The more discerning are already seeing and preaching progress in this direction; and experiments along this line are already taking place. Only, in the ordinary jog-trot, this proceeds infinitely slowly; there are too many individual knots to be untangled. Then, too, a great number of men think there is no such great hurry. They can still stand it; let future generations do the worrying. But the recognition of a birth-rate figure that spells bankruptcy in the game must in the end arouse even the most easy-going. In France they are already sitting up and taking notice most uncannily at the present time. Something must be done somehow, as soon as this fatal figure ceases to be merely a matter of statistics and vitally affects a nation. If the general economic complications in our large-scale civilization can really not be solved immediately, then some radical action must be taken against this peril. The state must realize that the child as such is a national asset. Public funds must be set aside for the protection of children, for child aid, for protection of mothers, for the protection of parents, and the child must be recognized as a performance for the welfare of the nation and be supported by society. A premium, so to say, must be offered for the procreation of a child.

A hard task; but the greatest stake is involved, in my opinion. It involves saving the root of the nation's whole strength. Formerly one could still say in a crude way: the mass will turn the trick; a sufficiently large part of the new generation will come through anyway; let the balance go by the board without public aid. But the moment that national death-rate appears on the big cash register, this can no longer be submitted to; from now on, the big thing is first to work and build up the capital itself; the days of surpluses are over for the present. And herein lies a point on which all political parties must suddenly come to be in agreement. The conservative must feel the same way about this as the social democrat. Political or economic theories are no longer involved; the material of the nation as such is at stake. Facing this eventuality, the most enthusiastic nationalist patriot must extend

a hand to the most visionary representative of world citizenship; for with the birth-rate humanity will collapse or continue to exist just as well as the nation will.

That will be automatically regulated; at the very latest, as soon as the barrel begins to run over or, better yet, when it begins to run out; and in the case of sensible nations, which heed the warning example of others, a good bit earlier, let us hope. . . .

With the pure fear which weaklings have of child-bearing, with the thoughtlessness of the well-to-do who do not want the worry of children, with the female product of civilization who does not want her material amusements interrupted by pregnancies and confinements, with the sickeningly sweetish æsthete who finds child-bearing a dirty business, and the "don't give a damn" philosopher, who at any rate is at least discussable and who asserts that he has a perfect right not to care a rap about any natural duties since nature does not fulfil any duties toward him either, when she lets him grow old and grey and sick and lets him die, and tosses sweets to the one and merely empty husks to another: with all of these, that old other regulation in nature is fully able to cope, now as before; that old regulation which started as an instinct in the animal and which now as before continues to live on in us as an iron counter-force, may it be never so consciously intellectualized. That is, the irresistible elemental force of maternal love and joy of parenthood, which independent of all sensual pleasure does after all create high values of feelings and emotions out of the child procreated; values of longing and wishing, values of fulfilment and happiness that go far beyond all cold "duty." Let us not lie to ourselves on this point. The longing for motherhood, which lives in every normal, untouched girl, will continue to produce children to the end of mankind's days, even if preventive means grew on every bush. One must not let oneself be confused here by little curves of super-civilization; just as little as in the case of homosexuality. And again, nature's great trick is involved and holds good here: strong maternal feelings have the power of being inherited, simply because they do urge to the procreation of children, while the majority of the generation of women, whose feelings are sterile on this point and who do not want any children, will keep on being actually unfruitful and so will not be able to propagate their tendency. And this would merely increase, the easier preventive intercourse were made. After a while, in the

following generations the selection of children which had been wanted by maternal feelings would make itself more and more strongly felt; and thereby these very maternal feelings would become so steeled as a tendency generally that all the danger of preventive means could not affect it. The female creatures of fashion and the æsthetes keep on dying off of their own sterility; and the mothers and whole human beings triumph. As I said to you several times, you cannot lop off the joy of having children from the genuine civilized human being as being something of no consequence. In addition to the direct parental feelings, there is the fact that the race, nation, progress and evolution all become meaningless phrases without this rock. But undoubtedly we shall always have human beings among those present to whom these words are not simply phrases.

Lastly, we have only the absolutely pessimistic philosopher left, who is permeated with the worthlessness of existence, who makes a form of heroism out of discontinuing all genuine reproduction, and openly preaches this "duty." We shall have a few words with this type of intelligence later on. I do not believe that his abstractions represent a real power. It is characteristic, however, that the battle front of this type and his ilk has from time immemorial invariably been directed against sensual pleasure as well, as if the pessimistic philosopher had never quite trusted a radical separation of sensual pleasure and procreation, with a sort of instinctive suspicion that despite all precautionary means, the possibility of children being procreated kept right on lurking behind sensual pleasure, wherever it continued to be desired strongly and with the whole elemental force of nature.

And in the final analysis, that absolutely hits the nail on the head: if the act of love is to take place with all its strength, it will never permanently be able to do entirely without the association of the idea that it has procreation, in the sense of a possibility at least, above it, in the thinking human being who seeks a sense in everything. One will also want to have this association among the many threads that run on this particular spool, when the whole peak of what can lie in the act is to be attained. Now and then at least one will be mindful of this sense and feel a deficit, if it is entirely lacking; and no method of preventive intercourse, no matter how perfect, will be able to afford a substitute for that.

This train of thought leads to another point which becomes interesting here for the positive problem of love in our case. Namely, whether sensual pleasure will still prove itself capable of evolution with the further ascent of our civilization; whether it can still be improved and deepened in any way?

The most obvious idea would undoubtedly be that this would not be possible according to the whole condition of affairs.

If, as we supposed, the primeval sensory experience of "love-death," of dissolving and being melted down in the supreme occurrence of love, still lies in the innermost nature of the actual universal storm of sensual pleasure, in us to-day as once in the lowest one-celled beings of the original strand, this feeling at the heart of things has forever a trait of the "absolute," which one can hardly think of as being intensified, always presupposing that it has been released with full force.

The highest intelligence of the human brain could not have contributed much more in this sense, nor can it in future, in my opinion. You can observe that clearly enough to-day in yourself: in the ultimate surrender to sensual pleasure, the intellect, coolly weighing reason, and reflection are anything else but promoters. Nothing as a rule so quickly and surely leads the imagination away from it, as to take a cool, calm walk under the crystal heaven of pure thinking and logic. The stronger, the more all-powerfully it is to quiver through you and tear you into that "love-death," the more you must give yourself up to it as free from reflections as possible, as dreamily, as plantlike as possible. Your essential humanity hardly will ever have fired you on in that fashion; it was enough if it left you in the status quo.

There remains the question whether the tickling property of the skin, with which this fundamental feeling gradually became connected, has experienced any further strong intensification in the upper story of life extending toward us, and therefore appears capable of being educated, so to say. Everything speaks against this. Out of nothing else was higher evolution able to make so little on the whole than out of the general sensitiveness of the skin, which it involved here.

Imagine that the whole outer surface of your body represented a wonderful musical instrument on which the energies of the universe play. You have one key which according to its inner nature is adjusted only to the energy of light: the eye. According to our

current theory, it is really an electro-magnetic key, whose sensitiveness, however, extends to electro-magnetic stimuli that quiver over to us from distant fixed stars and nebulæ. Another key, the ear, can be played only with sound-waves, that is to say, with vibrant movements of our air, in its more limited world of sound. But these very specialized, specially small keys at the same time possess a push-button in their key for opening a glorious instrument, a whole giant orchestra, which plays the most intricate pieces. On the other hand, the overwhelming surface of the rest of your beautiful naked boy's skin forms a uniformly spread out giant key, as it were, which despite all its superficial extent has no such secret key to an inner orchestra. How paltry is the effect in response to heat or cold, a prick or a blow. A rapid intensification without any clear-cut characteristics; and its scope is exhausted. The tickling feeling is perhaps the one that has the most to it. But how little does that offer. Invariably you have only the commonplace increase in intensity with a final crude peak and ever in the whole feeling only a quantitative increase in the coarsest form; and then, beside this, think of the scope of a musical ear listening to a Beethoven symphony.

It was with this particular crude tickling key that sensual pleasure became connected. Whatever could be done with the given ingredients in the more closely localized tickling sensation in the way of further refinement and direct improvement, sensual pleasure did. The erotic tickling sensation undoubtedly represents the peak performance of this key in the way of fineness of sensation. But even so there is no orchestra. Matters rested with utilizing what was given in principle, and that was really precious little after all. And judging by the impression of frictional intensity of the rubbing, the main thing, if not the whole, about this precious little must already have been brought to completion in the higher animal. Merely recall the positively monstrous love-making practised by the vineyard snails. That happens in a parallel branch to your series of ancestors. But the vertebrate too leaves nothing to be desired in this respect.

The behaviour of certain amorous fishes, which begin to rub against one another, although they do not carry out any genuine copulation as yet, already has, as was said, such a striking resemblance to humans in the act of sexual excitement, that the simplest observers have been struck by it. Perhaps this excite-

ment in animals is divided and spread over a longer period of time, with slower summation. Perhaps. Even that cannot be stated exactly, since one never knows how much is prologue and how much the genuine act. One would like to believe that once things get this far, all this is epigrammatically brought to a point in the case of the human being, as man otherwise has this element of concentration, of saving, of the epigrammatic in all his actions. But it is not claimed that this concentration represents a refinement or improvement here. The bird, for example, concentrates even more strongly in the act.

Now take the case of an amorous male frog; and you must say to yourself that here the outwardly visible energy of stimulation as well as (according to all conjecture) the inward intensity of sensual pleasure have already reached a peak which can hardly be surpassed. The male frog flings itself upon any female frog like an insane creature, actually like a maniac of the one deep, droning key. It is still without a copulatory member; merely a general contact lover. But it seizes the female about the body with such force that the latter not infrequently dies as the result. If no genuine frog female of its own kind happens to be on hand, it grabs hold of some other animal that happens to be available and excites itself on this to attain its object. A carp is ridden till the scales fly and its eyes are not infrequently scratched out. A toad in a bowl of gold-fish finally hounded the gold-fish to death in that way. But male frogs also mount males, if there is nothing else to do. A dead female frog is embraced exactly as wildly as a living female; in fact, a single piece of a dead female's skin unleashes the full fury of the male. A couple that is already united in love is in turn mounted by bachelor males, till a whole disgusting lump of tangled life results. Even lifeless wood is seized and used for the sexual act.

A mad game. No wonder that in view of this state of affairs man came too late everywhere in this field.

Of course, you may think of all that human folly has tried with sensual pleasure.

All in order to intensify this dull basic bass! Love between man and man, between woman and woman. Love with donkeys and geese. Love with the dead, with flowers, with the tortured, with the dying. Love with artificial objects, with dolls and apparatuses. Love in groups. Love in the most contortionistic positions

that could be puzzled out. Love whipped up by special condiments and stimulating medicaments. Love combined with one's own pains, with flagellation, with humiliation. It is not necessary to open up this half humorous, half atrocious chamber of horrors any further, into which the simple, healthy human being looks in the end as into the torments of Dante's inferno.

And then along comes the epicure of love, who has undergone a thorough examination and fully qualified as an expert, and gives it as his answer after all, how wretchedly little this feeling of sensual pleasure could at bottom be varied and amplified: a little circle, which one eternally trotted around anew, and the actual net result invariably nil.

At bottom, except for the philosophizing, the frog really did all of this ahead of you, and you, great, subtle man of civilization's millenniums, stands in reality before a thought-provokingly poor circle of millions of years that separate you from your human frog. One must say that in this respect humanity has waged the true, heroic fight of a Don Quixote in order to produce variety in the matter; and veritably does not yet seem to have gotten beyond the frog after all.

Rightly regarded, even the craziest of those variations do not increase the intensity of the feeling itself; they are merely stimulants, for the purpose of getting up to the simple normal height once more. Sometimes they are intended to achieve the repetition of the storm of sensual pleasure in quicker succession than nature prescribes; but that certainly yields no increase in strength for the single act. Sometimes, failing senile forces are to be whipped up once more thereby, in order that they may just barely reach the threshold with infinite labour. Sometimes, perverse associations, without which the simple storm cannot be experienced by those with certain definite tendencies (homosexuals, for instance) are mistaken for real intensification of energy. All these things are much like my trying to make a deaf person hear and then trying to make myself believe that he now hears better than another person with normal ears.

In the end, you always get back to the simple truth that the mighty storm, easily and powerfully and normally experienced by two healthy, strong human beings as a vernal storm of elemental force in their happiest period, ever is and remains the crown of the whole.

Nevertheless, I do believe in a possibility. Not the possibility of increasing the intensity of the thing itself, but of improving it more and more in the case of the healthiest, most genuine whole human beings by means of a particular association, a spiritual tie-up, and so give it an additional special value, more worthy of human beings. At heart, nothing utopian at all, but attaching to something that will sound almost like a platitude to most people.

If you picture to yourself a young Adam and a young Eve, such as I have just selected as an example, and if you imagine them to be genuine human beings, you will also imagine an association of the soul quite tacitly joined to them even unto their supreme union in love: namely, that they both are otherwise fond of each other too and to all the depths of the soul, with a great and fervent love.

This alone can completely transfigure the extreme act: the inner certainty that Cupid and Psyche are united in them in this most daring deed. The fact must form a luminous golden background to the whole, that just as both of them experience the supreme beatitude of love-death in their joint surrender, so beyond this act they are at all times ready to close the love-individual together in soul. That they live for one another; and that they would sacrifice themselves for one another in case of real danger of death; that each one honours the highest humanity in the other; in short, that they are to one another even as young lovers who have entirely found one another, who have kept together for thousands of years and who will be keeping together after thousands of years.

For this association, however, something is necessary which no longer concerns merely the simple scale of two human beings of opposite sexes, in full possession of vigorous sexual bodies, and with the physiological apparatus functioning as we have described it in the evolutionary process of its origin. For this, two human individualities are necessary, that have voluntarily chosen one another from among many, and in first line build their love alliance on the individual element throughout, the element in which they differ from all other human beings of either sex. When these two human beings now continue their love to the most intimate goal, it is clear that the hall-mark of this individual element goes along in the form of a powerful association and that at no moment can it be done without. If you tried to coerce two human beings, bound together with this absolutely individual passion of love, with all

the powers of heaven and hell to consummate the extreme act of love with some other human being than the particular individual loved one, no power could drive them to do so. It is no fable either, but a human experience recurring again and again, that frequently after the loss of the beloved one, such love never again desires intimate union with any second human individual for the duration of a whole long lifetime. Tremendous as the power of one's own personality has become in us, so too has the power of the human individuality over the other one in love.

If you think things out from this point on, and if you imagined that an absolute line of mankind's evolution ran in this direction, too, you would in the end arrive at a form of really humanized further development of sensual pleasure after all.

Yet one further association would be necessary for its perfect release in you as a genuine human being: namely the association, that it was to be awakened by the most intimate physical union with a very particular individual being, an individual human being, which your whole love encompassed without resistance otherwise as well, even unto the loftiest shining heights of the soul. A perfect soulful embrace would be necessary in addition to the physical embrace; but the individual element would be one of the indispensable prerequisites for this union of souls. This woman, this man; and none other. Now may the storm of extreme love-death flame with its red lightning flashes in supreme surrender: but it will only flame if you sink into love-death with this woman, this man, with entire elemental force.

The highest consummation of this idea would be for sensual pleasure in the end no longer to come into action at all in the normal human being if this association were not given. Only then could one say that the old wild steed of sensual pleasure, itself not actually capable of development, had yet been pressed forever between the thighs of the all-powerful horseman of civilization and the spirit, and that it was being broken in and ridden with iron pressure by man toward his high goals.

You will not be unaware that great values for the future already lie in this latter tendency; but such is meant to be the case. We wanted to discuss improving the breed of sensual pleasure generally, and therefore of humanity as well in the more distant future. As it is now, humanity is after all but the turning-point from the animal, the turn where at the most we can gain only clues as

to directions of what is going to happen. Now we quite unambiguously see such a direction to be the tremendous intensification of the individual element among us. We see individual love-selection increasing, and we already see many love alliances in which sensual pleasure with any other than the particular individual of one's own free choice is most peremptorily dismissed. I cannot find it too fantastic therefore, to imagine this continuing until in the end sensual pleasure entirely normally could no longer be released save by the contact of two such individuals of their own complete and exclusive choice. That it could no longer be released without the association that he or she, whom you now embrace in that manner, completely corresponds in this moment as an individual to the innermost need of your soul and to your most perfect whole love, more so than any other second human being.

Sensual pleasure, which we have already followed through the strangest associations on its wanderings, would at last be permanently tied up here as human sensual pleasure to a piece of genuine and most essential higher humanity. And thereby the way would be paved even at this most critical place to the highest harmony of distance love (to which individual choice must really belong) and mixed love in man.

The matter has an after-taste however.

Love alliances, in which everything to the last fibre and to the extreme sexual act is under the spell of individual choice and exclusively individual surrender already are of everyday occurrence. The whole of noble world literature is full of them, from Romeo and Juliet to Gretchen. In a certain ideal stratum of our thinking, we already live and move and have our being exactly as if we had long been in that epoch which knows nothing else; so that the step would really be a small one to make a kind of natural necessity out of this and so adjust the entire psycho-physical apparatus, from the brain to the sexual sphere, that other acts than those between the most genuine partners of love's selection would no longer be possible at all, purely on the ground of natural history.

Profane natural history of to-day runs very differently however.

In a certain, more realistic sphere, which exists to-day, we see sensual pleasure turned exactly around and connected with the coarsest disregard of all higher love-selection and love-union. Sensual pleasure functions in the most brutal element that tramples all

those finer values of humanity rudely in the dust. Just as it hearkens to onanistic stimulation, so it also obeys the prostitute. The woman whom the chance moment throws in your way like a number and about whom you know that you practically do not see the individual in her at all and that she herself does not see the individual in you and does not want to. The woman who, after the fleeting moment in which she met you, is swallowed up again by night and smoke, the ghastly blackness of things reduced to a dead level, as if she had been only a shadow on the wall. And yet your psycho-physical connection did not fail to function; even to the mighty final storm! With a sort of shudder you had already thrown overboard the association of the child that might possibly result thereby, as being luckily unthinkable. But the other association, the one about the individual soul embrace, went by the board with curious ease, too. And everything took its course seemingly straight through to the goal after all.

You learn that under some circumstances this power seems to prove even stronger than that other one. That the prostitute occasionally takes the trick from the beloved when this wild sphere of love-life is touched is an old problem. In a certain condition of affairs, the brutal outtrumps the noble with playful ease. That, too, is old material for novels, for which we seem to furnish fresh documentary proof every day.

But all this is in reality only apparent. As soon as you put matters on a really equal basis of competition, the game to-day is infallibly won by love, and was in all ages, of which we have literary products of civilization.

You merely have to put the figures down correctly. You must deduct the cases where high love becomes so sublime that it entirely takes the way leading via the most remote distance love into the the unerotic in the narrower sense; where longing for union begins to thirst and freeze because it is supposed to be fed merely with imagination and warmed with abstract ideas of loyalty.

There are wonderful cases, to be sure, where love is so strong that it survives this in pure form. It then lives in a state of holy resignation, because it must do so and because its own self-imposed law is mightier than all life's loss in harmonies otherwise. But this loss nevertheless exists. And where there is a loss on one side, conditions of equilibrium no longer prevail in an acute case.

You must also deduct the cases, where individual love has al-

ready become wavering, and maintains itself just halfway and with effort, and merely tries to persuade itself that it exists yet. For it also is subject to the fundamental law of the flux of all things in Nature. It does not inevitably have to be, but can continually be. There is something touching about man's struggle to keep hiding this eternal stream of all that has come into being from himself. The eye fastens on the old marks of the gauge as if they still held good, as if they must hold good as long as one stares at them; while the flood already rolls on in a totally different place. You must not calculate with this pious lie, either.

Nor must you go and identify true love with another matter which is extremely earnest in itself, namely the institution of human marriage in the history of civilization, as a matter of course. We still have to speak about marriage. About its imperishable importance. About its mighty roots particularly in the individual element. But marriage has a face of infinite variety in practice, quite corresponding to its universal power. The iciest asceticism, the bitterest resignation can live in it just as well as the sun of the highest individual union in love. If upheavals and avalanches happen here, it is not a case of true love being vanquished by a brutal power; it is this brutal power which conquers and triumphs in a barren, deserted field, because love was no longer there.

But you must place the correct value on the material in the other direction, too. We shall also discuss the historical foundations of prostitution later on. To be sure, with its principle of material gain, making sensual pleasure merchandise that can be bought and sold, it absolutely leads away from all individualizing love. It debases love, which would adopt a standard of genuine human values, to the denarius of which the Roman Cæsar said: *Non olet.* At the same time prostitution is a primeval historical power. It works as such with certain collected evolutionary means in the erotic field. Primeval varieties of love's allurement, brutal to-day, but immutably strong of purpose, continue to be preserved in it in the momentarily most effective form. There is an earnest truth in the love-story which lets the loving eyes of a very beautiful soul be hopelessly beaten by an artificial erotic perfume in the struggle of competition. When true love turns itself into a cold statue, the perfume, in which there is a hoary, old, direct erotic trick, will quite naturally become a power; the weapons in the fight are then

no longer equal. But perfume is a symbol for several things here.

In addition, certain disorders in our social conditions of to-day play into the whole matter. We civilized human beings on the male side learn to know prostitution earlier than we do the nobly human individual love alliance. No wonder if a sort of reverse association gets temporarily attached to sensual pleasure for us: an association with love that walks the street and with the nocturnal haunt instead of with the element of soul and with the individual element. Where that once gets firmly fixed, intercourse with the really beloved one afterwards will always be tinged with a more or less noticeable colour of memory on this score, and relapses can hardly fail to take place occasionally when there is competition. But it is to be hoped that this elementary school of prostitution will not form an absolutely necessary phenomenon of human love-life to all eternity. The future must improve the postulates.

And so you come right back to where you started. One cannot as yet evolve this idea of the "individualization of sensual pleasure" quite purely to-day for the very reason that only values of the future are involved as yet. You would have to talk about human beings who are liberated to a far greater extent than we are, if you wanted to picture to yourself loving human beings who were solely receptive for actual sensual pleasure in intimate union with the other being, which its entire, infinitely refined spirit of civilization, all its ethics and æsthetics, all its idealism and longing to create the ideal had likewise recognized as the right one corresponding to them, and which therefore would be at the same time Madonna and Venus in the highest sense for them. This sublime harmony clearly is still an ideal of evolution for us; which we already behold with longing eyes but by no means possess as yet. Only this incessant, fervent beholding (to which, on the point of longing, probably no genuine and pure soul has ever actually become untrue in its life, in no matter how many acts that strongly contrasted with it) is to procure its possession for us some day.

Meanwhile, may the old, coarser form of sensual pleasure continue to play what is at any rate its good rôle in incessantly helping loving individuals now to create mooncalves of the ideal, even though crude ones for the present. Otherwise mankind would die out, and thereby the vital nerve for creating all ideals would be cut through from a deeper stratum which we struggling beings must

as little disdain as the giant miss did the peasant who sows the grain in the fairy-tale.

Individual selection!

We sought a finer human association, with which nature's old wild journeyman, sensual pleasure, might in the future tie up, figuratively and historically in the evolutionary sense.

And we see nothing better than love selecting individually; in such a way that in the end the love-death of sensual pleasure could only be released in its entirety by both partners in love's most intimate act, if this act were at the same time the fulfilment of the longing for the highest mutual possession of two selected individuals. That is a thing of the future. But by having followed the problem of sensual pleasure until there, in order reasonably to be able to leave it now, it just so happens at the very last to place one more big new problem in the evolution of love-life in our hand.

Namely, the problem of individual selection.

We saw how living beings started out at a certain stage (first as Rumpelstilzes) for the purpose of mixing with a second being of their kind. It proved to be important for two beings with a certain difference between them to be brought together every time. Male and female became accentuated. Among these in turn, the closer members of a family were eliminated for love's union; a strange male, a strange female individual was given the preference. But again, evolution did not make a halt here.

Among human beings, we continue to see the young folks swarm out as once did the Rumpelstilzes. As youths, as girls. Here, too, it is the law, not to select one's brother nor one's sister. But every strange youth, every strange girl is not the right one by a long sight on that account. Once again the most important thing in our entire human love-life begins here: individual selection.

All manner of motives determine it. Let us mention an ethical and an æsthetic motive as the highest, noblest and most worthy of human beings among the many. A pleasing beauty of the individual character. And a winning beauty of the individual physical form. In a higher sense, the word beauty may equally well cover both. Beauty, be it of soul or body, is the most honest motive that determines individual love-selection.

So it is among us. But man has ascended out of the animal.

When did love's individual selection for beauty enter man's history? Did it already begin in the animal?

A totally new, distant snow-capped mountain range of twilight blue rises up before us.

An extremely wonderful animal fairy-tale awaits us in its woods.

But first let us follow the white clouds up there in the blue for a moment as they move slowly over those mountains and those woods, too. To-day as once upon a time, moving on and on. . . .

§ 10

Credo quia absurdum. . . .

Let the dark saying resound once more over your lotus-blue springtime lake.

A dazzling white block of clouds is slowly pushing upward above the little silhouette of pines over there.

It appears gigantic, like a mountain-side clad in eternal snow, against the tiny trees. But against the colossal blue bowl of heaven it is only a sparkling little piece of sugar.

And no sooner did it venture above the horizon when it seemed as if this hot blue were already eating it up. The white lump becomes hunchbacked, gets a hump like Hamlet's camel and ragged profiles with huge Napoleonic noses. Then the first nose breaks off at the top, and for a short while floats giddily as a flake in the blue.

You look at the lake for a moment, and then back again. The little flake is entirely gone. Melted away. Sucked up. You can barely see a very faint fading feathery wisp still standing out against the deep azure. In a minute, that too is gone. The blue once more blends into uniform metal.

Meanwhile, the entire snowy mountain below is undergoing total disintegration. Two, three little clouds still detach themselves in the same way and melt away higher up. Then the whole main lump rolls up into many smaller centres separated from one another, and these no longer rise, but already begin to diminish below. Suddenly you see bluish glaciers shimmer everywhere in the blue peak. But the glaciers are already becoming blue streams and the streams in turn become rifts in the metallic blue of the sky. Fine little flags now hang out from the rims of snow, like shimmering icicles. Then the icicles fly away in fine white dust, as if they had become waterfalls that blow away in foam before the chasm has been traversed. A couple of minutes more, and the whole cloud is gone; just a little nebula yet in the victorious blue, a pale turbidity, nothing more. But deep down on the wood, like a staring polar bear,

another one that wants to go up already lies in wait. Up into the same fray. And to die in the same manner. . . .

The historical undoubtedly affords a deeper insight. This human being of millions of years, in whom so and so many worlds lie in strata on top of one another, who historically clambered through so and so many monsters and still wears tails and claws of all of them to this day, this man of Darwin's and of true world history is really a fellow to be understood totally differently from that paradisian Adam of Jehovah's, who was put on the market all finished, turned and varnished, in order immediately to represent the ideal now and for all time, and who yet proved so faulty then as—well, as he happens to be.

The human being who originated historically is like the hero in Tolstoy's story, whose life appeared to him like the frightful throttling work of a living being sewn in a sack of wool, and who has to roll and whirl and thrust until finally, finally his head has bored through one end of the sausage and comes to light. There is certainly nothing absurd about it if this man, breathing deeply and freely in the light, still has his hair full of flocks of wool. And all those seeming madnesses in your human love-life are simply such flocks of wool; those countless procreative cells frittered away, the connection of the sacred and the unappetizing in the act, and so forth.

Well and good; I am looking into an endless tangle, and if this evolutionary tangle still produces tangled things to-day, that in itself is really not absurd at all, but the simplest sort of logic.

But I rest my head on my hand and look into the clouds, rising so beautifully white and substantial and yet continually dissolving into blue nothing. Uncounted couples of loving birds chatter on the lake; a big wedding is on down there, a wild procreating of new life. But up above, the silent clouds come and go with a still air of tragedy, like a great chorus, which yet seems to draw a conclusion, a moral from history.

A moral. Or had I better say: no moral? I dream myself into the fate of one of those quadrillion wasted spermatoza and I ask myself whether with all of this we have not after all just pushed absurdity a bit further into the heart of cosmic things, without seriously eliminating it from the world in that way either.

Quadrillions must die in order that one may live and love on.

A sperm-cell finds its ovum-cell, and a human being comes into

existence and it becomes big and wanders into the light; it grows eyes and it sees the stars and the fairy-tale blue up there.

But instead, the entire pilgrimage of a thousand ovum-cells remains a matter of groping around for a wretched little bit of the way in the pitch-dark tube between the ovary and the womb. And millions of spermatozoa live to experience nothing but the short, stupid, senseless road from their warm cradle in the male organ to lingering death in a vast, terrible, cold, strange world outside, which welcomes them only to torture them to death. Poor building-stones for worlds, yet from which no world will ever be made!

A certain story in Multatuli runs through my mind: about the father who instructs his child how beautifully everything is ordered in the world. The bird lays its eggs, and at the right time, when there are little worms for food, the young hatch out and their song is pure gratitude for this devoted care on the part of the world régime. "Do the worms sing too?" the child asks.

No, they do not join in the singing, these squandered spermatozoa, when they perish of thirst with their millions of years of heredity and hopes on some piece of linen or other, without having become human beings.

This question too must in the end be brought up once somewhere, so that you will not believe that I wanted to go out of its way on purpose.

Let me answer you in first line with a picture.

Make yourself light in imagination, light as a bird, as a balloon, much lighter even, entirely without weight. And float upward.

High as a eucalyptus tree, five hundred feet high. As the Eiffel Tower's nine hundred odd feet. As Mount Everest's 29,000 feet. The round lake below you has sunk into the grey-green carpet of pines like a blue eye. And the carpet merges into the general motley of an indecipherable embroidery. Violet heights to the south. To the north, the horizon over the high vaulting ocean. At length, the whole German plain like a rift yet. Then the gap closes; clouds, endlessly white solitude. On up to the greatest altitude attained by a balloon: 9,000 metres by Berson in the "Phoenix"; 18,000 by the empty "Cirrus." In the sense of antiquity, you would now have to cut the famed crystal blue bell of heaven, on which the gods walk.

But no crystal rises up before you; no snowy body of Venus is mirrored in it. You have really cut through the blue colour only. The fine little bubbles of water no longer reflect any blue above you. The sky is a ghostly jet-black, with the sun glowing white-hot in it, like the sharply bordered opening of a blast-furnace. The polar cold of cosmic space already extends its icy hand to you here. At those 18,000 metres it is already sixty-seven degrees below zero, Centrigrade. Then gradually down to a hundred and still lower. Below, the banks of clouds are now melted down to flakes and wisps, too. The earth appears again, but vaulted in like a yawning crater.

Higher. The atmosphere begins to give out. At 125 miles it is as good as gone. Only the last refuse washed up by the deeper atmospheric ocean still shows mysteriously on this air-shore. Little particles of volcanic ashes float there, perhaps the very lightest bacterial germs as well, probably the only thing that the whizzing earth incessantly loses in space. But in between, already guests of the new order. Perhaps you pass through the puzzling stratum, which occasionally flames up in the northern lights' gay crown of beams. The fine meteoric nickel iron dust of the universe begins to fall more copiously on you. Below you, a shooting star of somewhat coarser meteoric dust flares up like a little yellow sodium flame and is puffed out; or a crude meteorite glows as a bomb that immediately bursts, as a result of the friction with the air roller incessantly revolving like mad from west to east. One more jerk: empty space. Empty to the moon.

But you accelerate your flight. You go with the speed of light. The ether-wave, which is perceived as light by us, whips you on at the rate of approximately 186,000 miles per second. The moon is only about 238,800 miles from the earth. At that speed, therefore, it does not take you even a second and a half to get there. One jump, as out of a chair, and you are sitting on the moon. Witchcraft of physics. At the edge of one of those huge craters. Thousands of yards below you, below the dizzy wall, an endless, waving, greyish-yellow plain. The shadows of the jagged edge you lean over fall afar on the shining surface as gigantic, coal-black silhouettes of horns. Far off, a single steep peak; the crater's central cone. Here and there, mysterious spots of colour on the plain. Are they forests of venom-green crystals . . . or a fan-

tastic vegetation of fungi, with stems as tall as eucalyptus trees and tops as big as palaces?

But you look up. There floats the earth. The Volva, as Kepler christened it in Selenese in his "Dream of the Moon." A free, giant globe. The ice cap at the North Pole produces a reflection that makes you blink. From there on down, the ocean's greenish blue. The Sahara reddish yellow. The tropical belt of Africa and Brazil an intense emerald. Slowly a dazzling white bank of cloud steams away over parts of Europe. It happens to be entirely clear again where your lake must be lying here. But you look for it in vain. It is much too tiny. A microscopic little dot. You are barely able to make out the whole space between the Mediterranean and the North Sea, and the biggest of the paws which the little continent pushes into these seas.

And not one of our giant telescopes, mounted on these jagged crags of selenic craters, would ever show you even a single one of the human beings, whose joy and sorrow at this very hour is being poured forth in shouts of rejoicing and in tears fifteen hundred millionfold on this curvature of the globe. After going only 238,800 miles there is already only water, land and ice left, and the globe itself, but no longer a single human face. . . .

But you do not tarry. On with the flight. What is a distance of not even one and a half seconds on the track of light in this black space pierced by glowing stars. Take a three-minute flight as light flies. Early in the first minute, the terrestrial globe already melts away to a little glittering crescent moon with the most delicate of shadowy designs, beside which the real crescent of the moon is a mere silvery point. At the end of the third minute, you take up your post on one of the bald, brick-red plateaus on Mars. The night is late and in the twilight sky on the side where day will break hangs a morning star, bright as Venus to us. That is all there is to the earth. A point of light in the firmament. The moon is invisible in that brightness. At this distance of some thirty million miles, it no longer exists independently for your view. The earth is a beautiful star, at any rate. It continues to bloom for a long while in the East like a white flower, while the morning-sky breaks up into red strips over the plain below you and the blood-red reflections everywhere swim into the far-flung network of canals. . . .

A ten-minute flight. Again after one minute Mars is already

a yellowish-red star. After ten minutes, a spectrally pale arch of mist curves over you across the firmament. You are on Saturn. The ring swings you along. Stars shine in a sector of sky. Where is the earth? You seek in vain. Its little point of light is so small that your eye can no longer find it without the aid of a telescope. The sun itself is already melted way down, too, like a gas-jet turned low.

A four-year flight. The force of light, which tossed you in not quite one and a half seconds from the earth to the moon, takes approximately four years to cover the twenty trillion odd miles to the nearest fixed star. You stop off on a planet belonging to the red double sun Alpha in the constellation of the Centaur. And again it is night, and with a shudder your eye sinks into the sea of stars. A tiny dot of light yonder, whirling in the silvery dust among thousands: the sun. The sun itself is only a small star now. But at the same time, all the planets now lie invisible in the light of this little star; white Venus, red Mars, giant Saturn with its rings, and endlessly distant Neptune. And your earth itself. All in all, only a tiny point yet. A speck of silvery dust, which in reality encompasses the size of Neptune's orbit, more than fifty-six thousand million miles in diameter.

But that, too, is not yet far enough for you. You put on greater speed than light possesses.

You traverse the entire universe of fixed stars. Gay double suns and triple suns cross your path. Planets of such systems, having a blue sun in their sky to-day, so that everything appears as if dipped in the blue grotto of Capri, to-morrow a green sun, so that the landscape sinks into the emerald crystal of the Lake of Lucerne, and the following day a red sun, with the fires of hell flaming over sea and mountains. And every planet inhabited by feeling beings like you. The constellations break up before your eyes into flower gardens, and the Milky Way flows apart and dissolves in gay foam. But your little sun has long set in the cosmic ocean.

You fly on and on.

And you Wandering Jew of the universe will one fine day have flown over everything that we human beings knew in the way of stars from this earth. The entire island of fixed stars to which our sun belongs; the entire system of fixed stars, suns; clusters of

stars, finally nebulæ, still feebly sending down their waning light to us here and there, all, all of this you have behind you one day.

And if you now look around in your flight, all this melts together in its universality behind you to a luminous cloud of snow, a shining, longish silver shield, a remote, gleaming axle of infinite black space. And again you turn around, after you have flown straight ahead for a long while, and this whole starry sky with all its suns and nebulæ is only a single star again, a single point of light in the distance whence you come; millions of celestial bodies all confined by black magic in a single point.

Take a good look at it, this twinkling little star. You can hold the tip of your little finger before it, and that will conceal it. It is no bigger than the burning speck that drops off of your cigar. And yet there are millions and millions of earths in this light, all with the hopes and longings of the human breast. And all that these human eyes see in their sublimest moment, this flaming firmament with all its burning questions, all, all in the one little stellar point which is lost to the world. Not only are you in it as a former human being, but everything which this "you" was in the widest sense, the entire world that was mirrored in this "you" and that went through this "you." It is a "world," this star yonder, a whole, self-contained world. . . .

But your eye roves. Why, there are more stars. Again constellations, clusters of stars, nebulæ, just as over there. Your cosmic star is simple beside them. Look, it even forms a constellation with others; a mysterious tripartite constellation is again the sword of an Orion, only one that is gigantic in a super-worldly way, composed of cosmic stars. Each star is not a sun, but an entire universe.

You land on a planet in this realm of the beyond. Other beings live there in dimensions that differ tremendously from terrestrial ones. Just as their concepts of space include universes instead of stars, so a billion years is as a moment in their concept of time. And only such moments of billions compose their chronological sequence. One of these human beings steps outside of his door. He looks at his starry sky. And just as happened once to Tycho Brahe on that wonderful evening of November 11, 1572, when he was looking at old, familiar Cassiopeia and suddenly observed in it a new, snow-white twinkling star of the magnitude of Jupiter which

had never been seen before, so does this being see a distant little star just gleaming up at one place which was dark before. He wonders at that and makes a note of the spot. The next night he looks again. And the little star has already gone out again. In one day. He sees nothing more.

And the man on the super-cosmic star rests his forehead on his hand and meditates. What a poor lot was this little star's. The entire past had builded for it to shine. And now it shines for a few hours and comes down like a rocket. How totally differently it happened in our case here! For æons of our time we have been ascending in steady evolution, we shall continue to mount upward for æons to come; there is no end in sight. And this poor star lived only twelve hours!

What did it perform? It radiated some light for a couple of hours. Merely enough to touch my retina. And then immediately into nothingness.

"Does the star sing, too, Papa?"

. . . That human being's twelve hours were one hundred thousand trillion years within that missing star. During these years, every individual star's epoch of incandescence, which that being could alone see, had to be over, in order that the splendid phase of evolution, which we call organic life, could set in. What that human being saw at the moment when the little cosmic star tickled his retina was really only the barbaric original form of the spirit's coming into being, when it still poured out purely as incandescence; it had no sense whatever for the evolutionary form of the intellectual, that only followed afterwards, from this being's standpoint.

For him, everything was simply "all over" with the cessation of this crude stimulation of the retina. How could much have evolved there anyway during a period of time lasting just a couple of hours! Stuff and nonsense. A star like that was just a useless waste on nature's part. A celestial spermatozoon, which did not fall in the onward rolling wave of life but on cold linen and there directly perished of thirst and dried up. They cast with unequal dice up there. Nothing for this one and everything for that one. Sorry world!

And the human being under his cosmic stars and with his concept of time in terms of billions of years propped up his head and looked glum. Sorry world. Stupid world. Incalculable world. *Credo quia absurdum.*

Dreams. But if you want to go so deep into the innermost inwardness of things, you have nothing more at all but dreams, but symbols, comparisons, analogies.

Wherever you look and whatever you see in your picture of the universe, you ever have only cross-sections of evolutions, that merely happen to correspond to your eyes.

Infinite universes are boxed up in one another in every grain of dust. In the case of every grain of dust, the evolutionary wave of universes rushes past you.

Change the magnitude of your eye, and every little drop of living substance comprehends distances that are as far as Sirius, spaces through which light would take a hundred years to fly. Change it, and our entire system of fixed stars melts down to a little drop in a brain, and the sun is a circling molecule in the tremendous process of combustion in a thought factory, which thinks thoughts of fixed star magnitude.

The spermatozoon dying a lingering death as well as the human being growing to maturity are cross-sections of evolution. Now you see only a point, now the section shows a longer piece, a trunk, as it were, putting on annual rings. What do you want? A whole, something really completed you will see as little here as there. Your spermatozoon which helped to form you did not dry up on a piece of linen. You resulted from it. But what is this "you"? To-morrow you, too, will lie on a piece of linen, you will gasp and struggle for warmth, light and air and die the same way, merely a certain number of years later, out of a life of full strength, that looked upon the starry sky, that read Goethe, that quivered under storms of love and storms of knowledge and storms of beauty, but yet out into the self-same "nothingness."

Out into the same night of the unknown and the invisible, into the selfsame longitudinal part of unknown evolutions, of which there as here you unalterably see only the cross-section which happens to be projected into your plane of life.

A point here; a little cross-section of a trunk with annual rings there. But you saw in my picture that a point, a solitary luminous little dot of light in the universe can encompass a whole world of many many trillions of suns, around which quadrillions of earths full of longing human eyes circle within the one point. In contrast to the spermatozoon, in the case of the grown-up human being you cut a temporally longer piece and you get, not a point merely

as the cross-section, but an extended cross-section with many concentric circles that place themselves about this point in the course of forty or sixty years. But in the end, the one section terminates for your view just as well as the other does.

You yourself make the measure of the difference. You happen to be living in a view of the universe, for which the spermatozoa that dry up are instantly and forever lost in their evolutionary lot; while the others from which a human being of your kind results, continue to grow into your world as long as they are human beings and make themselves visible, audible, and tangible to you. You see and continue to experience only those of all the billions that happen to take on the form of human nascence; all the rest pass out into nothingness for you. But how will you place an absolute value on anything; how really weigh anything? If a stellar point can be the cross-section of an entire cosmos, will you oppose a human being to a cosmos?

Disappearance out of your field of vision can of itself not deliver a verdict as to value. For a man at the peak of all his strength disappears for you in the same way, too, after all. And how very much more do you know about man at bottom than about the spermatozoon that is drying up, that happens to have the lot of going instantly? You both come out of "nothingness" and into "nothingness" you go.

To transfigure this "nothingness" with the eternal idea of evolution, to divine the whole in it, of which we only see the few chance cross-sections through which our phase of existence happens to cut, that in the end is the most essential task of all knowledge of nature, of all our philosophy of life. But such is the case there as well as here.

In the final analysis, it must also be the true philosophy of redemption for the spermatozoon dying its lingering death on the cold linen.

Deepest, most inward ways in your conception of the universe as a whole must part here.

If you see only nonsense generally in what has come to pass in the world, if you regard it all as universally great folly, well, then universally great Goethe in his death chair is only a poor, perishing spermatozoon, too, that has remained lying on the bedspread after a wild game of love and whose little tail twitches convulsively until

the last remnant of warmth and moisture has vanished and the old reaper, death, throws it into the cold sheaf.

Eternal dying continues to take place at the height of life and not merely at its end.

Your cell material becomes renewed so and so often during your life in the course of metabolism. The great struggle, selection, destruction of cells, continues incessantly throughout your living body as long as you live. Tremendous dying takes place throughout your world of thought as well. Your ideas, hopes and ideals die. Time incessantly dies under your tread; the minutes, hours and days roll on into the past. You yourself are a pitiless grim reaper, death, for yourself until at the last you have cut yourself down completely.

And is this life, even if it be the highest known to us, perhaps because it was awakened into existence, because its spermatozoon attained development, one harmonious sunny intoxication of fulfilment? Is it without pain? Does not the whole course of this life incessantly run through more than the pangs of death? Pain and life, twins sprung from one root; so says an ancient poet. I do not embrace that other thought, that it were better not to have been born. That thought is much too petty for me in the face of the world's great problem of work. But who may sing that happiness is the lot of this life?

The worm in that story may not do so, but neither may the bird which struggle and need, old age and death await. In this sense, no one may sing the superficial praise of heaven, and this too is the true solution of Multatuli's little story. Man neither; standing before this boundlessly incomprehensible amplitude of things with this boundless longing for the solution of all questions about the universe and in the end having only questions again.

Carry things into these depths and the same thing will keep on magically gazing at you. The black eye of nature's mystery rests on you. Why does evolution need pain? Why does it need this splitting up into myriads of individuals, that runs through life as through death? Is all this disintegrating into dust after all only the wave beat within an undivided being at the bottom of things? Is it in the final analysis always the same material, which now seemingly rises up, now sinks down according to our view? Is there a bottom in nature, where life as well as death are only experiences, only stages, phenomena, evolutions within an all-em-

bracing existence, which itself continues to exist eternally living? Questions!

And yet, one thing remains true. Wherever you are able further to illuminate a little stretch of the way, there, too, a piece of the seemingly absurd ever becomes detached and drops down like an empty husk. That is the experience of all search for knowledge as of all practical work in life. Therefore let us not sing loudly, but search and work. Let us not go to meet the lava stream with a hymn, which praises the perfection of the existing. The stream eats us up. But if during long generations we have meditated on ways of understanding it and finally of mastering it on the basis of that, perhaps then this unutterably harsh work will some day really appear as a soft melody with which something was sung into being, and perhaps it will also have a chord, a very delicate inward one in it which will proclaim at least a tendency toward growing perfection in this world. Do work, search, unselfish devotion and love sing along, too? They do not sing, but they are.

PART VII

IN THE NUPTIAL BOWER OF THE BIRDS OF PARADISE

Love seeks to procreate in beauty
And to the beautiful give birth.

PLATO

§ 1

May I not use any image
That I please and prize?
Since God shows Himself as image
In my darling's eyes?

GOETHE

I AM going to tell you another animal fairy-tale, which at the same time is fairy-tale food for thought. . . .

It was on a golden autumn day in Dresden.

The silhouette of the older part of town with its green-shingled roofs lay in a wreath of the wild grape's deep red leaves; and there was a high-spirited, merry something about the city and in the air that bade defiance to all the traditional melancholy of autumn.

I had been wandering for a couple of hours through the big picture-gallery, without a Baedeker, merely as one swimming at his ease in the blue sea of high human art. Once again it had passed before me in procession—the whole gay super-world which man has created for himself on this dark earth . . . from the vinously daring joy of life of the Dutch to the radiant, ideal figure of love become universal, before which Friedrich Albert Lange once propounded the question, what philosopher would ever "refute" the Sistine Madonna. . . .

Still wholly under the spell of these glorious things, I sauntered through the dear old castle garden with its burning red pelargonium beds and its Sleeping Beauty magic in the heart of the big noisy city. I strolled over to the Zoological Museum, which is housed in the corridors and pavillions of this castle, in finer style, probably, than any other museum of its kind.

It had once paid the price of its existence for its splendid home; that was during the street fighting in 1849, when the castle caught fire and its treasures were consumed. But it rose again out of the charred chambers in rejuvenated strength, and to-day it is again one of the best in Germany.

But any one coming here with the kiss of art still fresh upon his brow as I did was bound to see everything in a new light. I did not come to decipher Latin names on the labels of turbid glass jars of alcohol. All the autumn gold flooded in through the beautiful, bright windows of the castle. A breath of life quivered over the grotesque grimaces of the stuffed animal world from near and far, so did a something that in its innermost nature was even more and even higher than life.

This day I did not see the wires and threads that helped out and held this dead world together for purposes of scientific instruction. But it seemed to me as if very fine strands, observable only by their extreme silvery lustre, ran over from this motionlessly numb animal world of the scientist to that other luminous world of colour in the temple of art. In such a happy hour, you meditate and combine and compare like a poet, suddenly seeing and feeling green woods and blue sky in a totally new way—looked at with the eyes of a deeper life which is richer in mysteries.

The Dresden Museum possesses a treasure whose importance for the lover of nature can well be compared to that world-famous treasury close by in the "Green Vault," with its collection of precious stones which everybody knows. Hardly have you become somewhat absorbed in the glass cases full of zoological rarities among black-haired bodies of gorillas with the skeleton of a rorqual running along the ceiling over your head, when you read a sign with an arrow pointing "To the Birds of Paradise."

That is the treasure.

Wonderful colours and forms shimmer and shine behind huge panes of plate-glass—a luminous rainbow broken up into changing lights on the feathery dress of animal shapes. It is one of the finest collections in the world (in Germany, probably only the Stuttgart collection comes anywhere near it) of that group of crow-like birds which a credulous mentality once christened "birds of paradise" in an age of childish science that played with romanticism—one of those lucky hunches of the naïve imagination to which the progress of knowledge keeps on giving a sense after all.

No perfect paradise in the biblical sense blooms anywhere on earth to-day, not even in the most remote nooks and corners of the tropics. And yet, on seeing these strange beings, even the simplest beholder is still seized with a dark suspicion that there must be something very special about them.

They are so beautiful!

You seem to breathe freely again when you bob up here from the depths of the museum with all its grimacing faces and gaping snouts. This is no longer science; this is art! How many may already have had this thought on the tip of their tongues. . . .

Here hovers one of the smallest of the lot, the so-called king bird of paradise. It is a dainty little animal, not as big as a thrush. And what a jewel! Take a thrush, and dip its head, back, wings and tail in literally flaming vermilion with a lustre like spun glass, changing to velvety orange on the head. Let the belly be silky white, but slightly below the throat where this white silk goes to meet the red velvet of the head place a band of deep emerald green, like the ribbon of an order worn across the breast. Let the golden yellow beak emerge from the red in brilliant contrast; and the cobalt blue feet from the white. At right and left of the green band and independent of the vermilion wings, let a bunch of long plumes rise upward in the shape of a fan, each fan at first silvery grey, then green toward the edge, like a hoop of shimmering emeralds; and finally, two thin rays of feathers, extending at great length from the red tail, in the form of a lyre, whose tips are furnished with golden green fringes and are coiled up in a spiral, each one in turn forming another shimmering little emerald disk, a fairy-like garland floating behind, such as no second bird on earth possesses.

Legend and the romancing of scientists are woven equally around this magnificent creature.

About the middle of the sixteenth century, old Konrad Gesner, the father of all modern zoology, reports about the "paradise bird."

Once in a while a stuffed specimen of this bird came along from the Sunda Islands with all manner of other precious things. Nobody could know where it really was at home, for the entire wonder world of New Guinea, the real paradise of these paradisians, was still shrouded in mist as far as geographical knowledge was concerned at that time. But a mutilated Malayan name, which later came to be applied specifically to our king bird of paradise, had already come to the ears of the famous physician of Pavia, Cardano: Manucodiata (from Manucdewata), meaning "the little bird of God." God's little birds, so he believed, were born without feet. Never in their life do they touch the vulgar earth. The male's back forms a hollow, and the female's belly is hollowed in. And

as the parents press closely together, a natural, warm nest is formed in that way, and in it the eggs are hatched out while the parental pair floats in the empyrean. And in order that this faithful couple might not accidentally become parted, the male twines both of its long, thin tail feathers tightly about the body of the brooding mother, like a "cobbler's wire," during this period.

That story is such an ingenious piece of fiction that one almost wonders it is not true. For nature is inexhaustible in similar complicated methods where the incubation and care of the young is difficult. The little story current among the savages, which Gesner cites in addition, about the little bird of God converting the heathen to belief in immortality, is a delightful invention. "The Kings Marmin in the Islands of the Moluccas," as his German editor, Rudolf Heusslein relates (for Gesner had written in Latin, a Latin which the well-meaning German translator frequently murdered in truly delicious fashion), "began to believe a few years ago that souls were immortal, and did so for no other reason than that they happened to take chance note of a very beautiful little bird which never alights on the ground or on anything else, but which falls down dead on the ground out of the upper reaches of the atmosphere when its time comes. And when the Machumetes came to them to trade and barter, and bore witness that these birds were born in paradise, which was the place where the souls of the dead reside, the kings embraced the creed of the Machumetic sect, because it held out great things about this paradise."

Three hundred years later this was followed by a very brilliant, romantic moment in science.

The time is March, 1857; the scene, one of the small Aru Islands close to New Guinea. An English collector and an explorer of the very finest sensibilities, Alfred Russel Wallace, set up shop here for the purpose of shooting birds and catching butterflies and beetles. This is the same Wallace who became famous a little while afterwards as the co-founder with Darwin of the doctrine of the evolution of life by natural selection and who very much later thought that this theory held good up to the monkey, but that then the arrival of intelligent spirits on our planet was required for the origin of man. The Aru Islands were virgin territory for a zoologist at that time. Wallace sends his servants out hunting, and one of them brings back a gaily coloured bird. It is the

first king bird of paradise which a naturalist ever got hold of on the spot, freshly killed.

Wallace, who had eyes for nature and beauty as few had, describes in an extremely attractive manner how this day turned into a holiday for him. One of the objects of his entire journey was attained thereby. "The emotions excited in the mind of a naturalist who has long desired to see the actual thing which he has hitherto known only by description, drawing, or badly-preserved external covering, especially when that thing is of surpassing rarity and beauty, require the poetic faculty fully to express them. The remote island in which I found myself situated, in an almost unvisited sea, far from the tracks of merchant-fleets and navies; the wild luxuriant tropical forest, which stretched far away on every side; the rude uncultured savages who gathered round me—all had their influence in determining the emotions with which I gazed upon this thing of beauty."

This "thing of beauty," to be sure, did not float eternally through the ether in Gesner's sense. Wallace quite clearly saw the blue feet, which had been invariably cut off by the natives and were lacking in the stuffed specimens previously known. But the direct charm of the beautiful remained. "I thought of the long ages of the past, during which the successive generations of this little creature had run their course—year by year being born, and living and dying amid these dark and gloomy woods, with no intelligent eye to gaze upon their loveliness—to all appearance such a wanton waste of beauty."

This thought makes him melancholy. He says to himself that when civilized man gets to these remote nooks of the woods he will exterminate these weak little birds very rapidly—a prophecy which threatens to be turned into actuality for this whole bird of paradise race to-day; for their lovely dream of nature is going wretchedly to ruin on the reef of worthless and unbeautiful fashions in women's hats. And so he philosophizes that this priceless creation of nature's could not have originated for man's account alone, but that its existence must have a purpose of its own.

I told you this story about a discovery in such detail, because it affords a measure for the way this bird has again and again affected the minds of men. The savage native, the cool, calculating overseas trader, the homemade savant of the sixteenth century in his apothecary shop and then the high-class, highly educated philosopher and

naturalist of the nineteenth century, they all drop their day's work for a moment at sight of this bird and think and invent fairy-tales; even the strict scientist resorts to a vein of poetry and philosophizes about God and the universe. Words like god, king, paradise, and concept of beauty, are conjured up in order to give this bird a name.

And all the while, this king bird of paradise is only one among many—the prettiest but not even the most conspicuous member of its family.

In the many-coloured tableau at the Museum you have the so-called "great bird paradise," the best known type of the group. It is not really a big bird; it is about the size of a jackdaw. The sense of great size results from the lavishness of certain feathers that are pure luxuries. The actual body of the bird is almost severely plain in colour, brownish red with only a golden band around the neck and velvety green from the throat till over the eyes. But on the sides of this body, under the wings, at a spot where one does not as a rule expect to find conspicuous feathers, a giant wave of billowing gold pours out of the arm-pits, as it were; this is the actual "paradisian tail," whose charming plumes are everywhere held in high esteem and which as a matter of fact hangs only loosely on the bird like the bush of horse-hair on a helmet—purely an ornament having absolutely nothing to do with the traditional utilitarian feathers on the body, wings and genuine tail. This wave of gold dominates the entire picture of the animal; it is the striking thing, the surprisingly beautiful thing, the paradisian element about it.

Whoever has frequently seen this magnificent creature alive, as I have, can well picture to himself what the effect would be if this wave shone with another colour of the spectrum in place of gold. What might not the tenacious wonderland of New Guinea, which had become known so late in the day and whose interior was still being so ardently explored, still offer in this line! The Dresden collection contains the Rudolf bird of paradise, named after Brehm's pupil, Rudolf of Austria. The complementary colour of yellow is blue. So this paradisian's luxurious plumes shine with a veritable Capri blue, as if all the light of the Italian sea had been poured over it. Wonderful is the contrast of certain crimson borders of feathers below the blue, lying like a coral bush in this blueness. This blue wave is not a wing, not actually a tail; it is a luxury, which billows about the animal in flight like the magic garment of a water-sprite and when unfolded in a state of excitement stretches above it like a

crown of blue rays. At some distance, there are two further, special blue reflections, that shimmer and vanish again, as if two smaller paradisian butterflies of the widely known "shimmering butterfly" variety, that now are a plain brown and now gleam with a fairy-like lapis lazuli, were circling around the big paradisian. In reality they are those strange "cobbler's wires," which Gesner already knew about; they are special, naked bristles of feathers radiating from the tail, each of the two ending in a shimmering eye.

This luxury production is the characteristic thing about all of the most beautiful birds of paradise. A variety named after Wallace, which otherwise is a grey little bird with just a little violet crown on its head, has veritable standards of a metallic green shooting out of its breast and four snowy white, giant plumes rise from the shoulders and are erectile perpendicularly to the wings.

The King Albert bird has two single threads of horn growing out from behind its ears, several times as long as the whole bird and closely set with little shimmering horn plates of alternatingly blue and white porcelain colouring, like a huge, gay acacia leaf.

Still others of the series are black as anthracite coal, and suddenly a green or violet or golden red lustre of ore breaks out of this body of anthracite like a mighty flame; enormous hoods on the heads, long parrot's tails, fans and diadems of all sorts. And the amazed beholder invariably exclaims: how beautiful! Pictures are totally inadequate, particularly as the metallic colouring is reproduced dully in most cases. But a collection like the one at Dresden overpowers you and is compelling.

It forces you to stop and think what it all means: this intoxication of beauty among creatures of the remotest jungle, ranking far below man in the scale of nature.

The interior of New Guinea continues to be the least known land on earth. Wallace, that splendid man and scientist, sensed how this shy sanctuary of nature was barricaded as if to keep man from getting at it. The full force of the Pacific's waves incessantly beats against its northern coast.

"The country is all rocky and mountainous, covered everywhere with dense forests, offering in its swamps and precipices and serrated ridges an almost impassable barrier to the unknown interior; and the people are dangerous savages, in the very lowest stage of barbarism. In such a country, and among such a people, are found these wonderful productions of Nature, the Birds of Paradise, whose

exquisite beauty of form and colour and strange developments of plumage are calculated to excite the wonder and admiration of the most civilized and the most intellectual of mankind, and to furnish inexhaustible materials for study to the naturalist, and for speculation to the philosopher." Thus Wallace wrote more than forty years ago in his incomparable book, "The Malay Archipelago." This is a vivid description of the situation that essentially still holds good today.

But, coming as I did from the Sistine Madonna to the *Paradisea Rudolphi*, the mere act of walking a few steps across the castle garden at Dresden very emphatically brought the question up in my mind, what is the connection here? And is there really a bond of union between the two?

You are bound to reflect about that for a moment.

And it seems as if you had to differentiate between two totally different things. Here is Raphael's Madonna, or some other priceless painting in the Dresden Gallery. I look at it and say: it is beautiful.

I say this out of my human feeling. I feel that it is "beautiful."

In doing so I am absolutely sure of one thing. Raphael, who painted the picture, was a human being even as I. Centuries separate us, but that is a very short space of time in the realm of artistic feeling. Phidias takes hold of me in the same way, and he is more than two thousand years older. Therefore, the factor of time does not enter into the matter. Raphael was a genius as a painter, which is something that I am not. In the fact that he was a genius lay his power of projecting pictures in such a manner that I still stand before them sunk in revery. But that too does not touch the fundamental fact.

He was a human being. So am I. He had feelings for beauty which at bottom were absolutely similar to mine. His personal power consisted essentially in utilizing these feelings "creatively." He "created," and I marvel. But all that really happens is that the human feeling for beauty, which at heart is inherent in me too, returns to me by a roundabout way over Raphael's mastery.

And seeing all the depths of my feelings for beauty torn open and animated with radiant visions as I stand before his painted Madonna, I am, after all, only feeling myself in the innermost depths of my being. Raphael had a sense of the "beautiful." I have a sense of the "beautiful." He created the "beautiful" on the

basis of his feeling. I in turn feel what he has created as "beautiful." That is a simple line, is it not?

It runs from man to man. A bit of the past is interposed, but is bridged over. Raphael is dead, but his picture still lives. It lives with me and still enthralls me to-day. All this is crystal clear.

But now take that fairy-like blue Rudolf bird of paradise. I do not need to dip back into the past. It lives side by side with me; it is my contemporary, even if it is living in a remote tropical island which is mighty hard of access. But here in the museum it is right in front of me, not as a work of art but as itself.

And I find it "beautiful."

Just what does that mean?

As a human being, I find it beautiful. It is a bird, a living being, far removed from me. And the words rise to my lips, what a glorious work of art this bird is. But now the strangest questions of a sudden arise.

Is this case not totally different from the case of Raphael? Raphael, a human being, projects things of beauty outside of himself, and I in turn find them beautiful. That is a simple cycle. At bottom, the painting is merely a piece of Raphael's brain, projected into time; the brain is that of a human being, and I merely find what I myself have, even though I do not possess that power of projection.

But in the case of the bird of paradise, you seemingly have only one-half of the cycle. My brain directly feels that this bird is beautiful on sight. But I miss the other half of the circle. What brain hatched out this bird and projected it as "beauty"? At first sight, I can find no connection of any kind. This bird of paradise of Rudolf's with its gorgeous colouring of the blue grotto at Capri was flying around in the primeval forests of that enchanted New Guinea when the first human beings were originating on earth. Whence came its "beauty"?

In feeling its beauty, I dream that I am finding something again in it as I do in Raphael's Madonna.

But what? For I am getting beyond all human bounds. The bird is beautiful and the Madonna is beautiful! Are not the two concepts identical? Let us go ahead carefully and see whether a solution offers.

The Dresden Museum does not show you the most magnificent birds of paradise alone. The rest of its collection of birds is extraor-

dinarily rich in beautiful forms. Arranged with rare discrimination, they generate an incomparable intoxication of colour. There are the humming-birds, whose entire production of colour is concentrated into one little spot at the throat, but there it has the full force of a precious stone. There are the woodpeckers, which continually show certain colours all mixed up in kaleidoscopic fashion; if you look them over in long series of colours, as the almost artistic arrangement here makes possible, you note how the several positions of the kaleidoscope in reality form stages, one replacing the other and evolving the next one. There are the pigeons; most of our domestic ones with very soft colours, but the tropical pigeons from the Moluccas having all the shimmering lustre of riotous tropical magnificence.

Then all of a sudden, in front of a new line of cabinets, you encounter a totally different picture; grey and brown, beyond this blaze of lights, are the infinite varieties of all these birds' nests. It is another world.

At first sight you note how everything is contrived for utility, security and protection. But with what scope for invention amid a thousand possibilities and constraints! There is the so-called edible swallow's nest, glued fast to the perpendicular wall of rock with cementing saliva; the tailor-bird's nest, which the bird makes by sewing a few big leaves together, using its bill as a needle and threads spun especially for the purpose. You see the reed-warblers' nests, secured between the stems of reeds like a structure built on piles; the coot's floating island nest; the crazy, bottle-shaped baskets, pouches and tubes made by the weaver-birds and the orioles, hanging like giant fruits between sky and water at the ends of thin twigs, inaccessible to all heavy, climbing robbers; and on to the splendid great floating haystacks of the African colony sparrows, which really represent a community dwelling under whose secure union roof many hundreds of individual nests rest in turn.

It is not the external ornamental beauty that grips you here, even though the architecture and construction strike you as pretty and competent. Something else takes hold of you overpoweringly this time: it is respect for the brains of this merry band, respect for the little organ underneath the thin little skull which you as a gourmand scrape out and consider a particular delicacy when you eat a field-fare, without having the ghost of a suspicion what a fine mental workshop is going to pieces between your teeth.

I shall not touch now on the profoundest question of how the first community sparrow or tailor-bird came to hit upon its marvellous way of building nests. Let us assume that according to a current working theory based on good grounds, a "chance" variation which happened to make them specifically inclined to build this kind of nests was favoured in the ancestors of the present-day community sparrows and tailor-birds and continued to be bred through countless generations as a sort of pure strain by that natural selection and survival of the fittest which Mr. Wallace in his day helped to set up as a theory; and therefore only young community sparrows and little tailor-birds having this particular variation in the brain would be born to-day; and this inborn structure of the brain would express itself in every individual bird to-day in the form of a fixed imperative to build a nest of approximately that make; an imperative, which proceeds from the animal's brain, and also requires certain stimuli from without, in order to make it function, but which accomplishes things with this brain which the animal never learned itself nor invented for itself, and which one characterizes as an "instinct." As a matter of fact, all these explanations continue to be extremely difficult to-day; they are subject to endless discussion and perhaps they still need some totally new and surprising ideas. But that is immaterial. In any event, there already is something "inherited" in every bird which more or less clearly works in its brain as an instinct and which gives it a general picture of the sort of nest which its species has been building for a considerable length of time. Let the deeper mystery, with which explanations are still wrestling, be saddled for the present on the little word "inherited," as it so often is!

In any case, a brain equipped with this machinery of instinct is already a marvellous little work of art. What I then have to keep on marvelling at far beyond this fact is the positively overwhelming individual performance of each and every bird, which enables it to make this nest for its use.

The external conditions differ every time. Again and again the work of constructing the nest has to be adapted to this or that particular branch of these particular reeds under local conditions. And millions of little birds manage to accomplish this feat every year at nesting time—quite impossibly by "instinct," but entirely with a veritably infinite mobility of the still open, choosing and weighing part of the brain which is spacially so tiny; a mobility of the intel-

lect which expresses itself in the choice of location in each individual case and in the adaptation of the general plan of the nest to the individual possibilities afforded by this place.

I shall not go into the matter here, to what extent this or that resemblance to the phenomena of our human brain life could be found in addition to the inborn general instinct. But this individualization, this continually different personal employment and adaptation with individual choice must strike every one who has learned to compare logically as the clearest imaginable characteristic of a mental activity which is only comparable to our own.

I believe that it is not unimportant for our whole discussion to be reminded so emphatically from another source about the existence of a thinking brain in the bird.

The beautiful blue Rudolf bird of paradise, from which we set out, possesses such a brain.

In drawing our artistic comparison we encountered the little word "brain" as persistently in the case of Raphael's painting. A feeling for beauty lived in Raphael's brain. This feeling (a piece of Raphael's brain, as it were) was projected into the picture of the Sistine Madonna. By means of its projection as a permanent painting hanging in an art gallery this feeling is still able to have an effect on me to-day; it awakens my own sense of beauty in my brain. A complete cycle!

Something in the bird, too, affected me so that I said: I feel my sense of beauty excited, and carried away to the point of utmost admiration. But I did not know where the bird's beauty came from. I lacked one-half of the cycle.

One point of light on the subject dawns on me. The bird of paradise has a brain too!

This is merely an illuminating point, and not at all the missing part of the cycle. For in the case of Raphael's brain, everything is perfectly clear: this brain has feelings for beauty, it projects them into the picture and the picture in turn affects the feelings for beauty in my brain. But in the case of the bird of paradise, what sort of a connection could exist between its little crow's brain and the magnificence of its plumage, which I feel to be "beautiful" with my brain?

Let us linger a while longer in the splendid Dresden Museum. Beside the cabinets containing the many jolly birds' nests stands a

special case with something in it that necessitates our taking a long mental walk. It is going to be a pleasant walk, and before you start on it you must first throw overboard all ballast of grey theory, like the sandbags of a balloon which is about to ascend.

In this case you are looking at an Australian landscape. Your imagination is stimulated by a prettily painted little back drop: you see Australian trees, a little stretch of that unique bush landscape which characterizes the remarkable old continent of the duckbills, kangaroos and mud-fish. And in front there is a genuine Australian object of the strangest sort, set up perfectly true to nature.

Get the feeling that you are actually roaming through the Australian bush, and all of a sudden this something meets your eyes, something harder to characterize than most other products of ingenious mother nature.

It is the wedding-bower of the bower-bird, or chlamydodera, as it is scientifically called.

Wedding! We have all of a sudden come upon a labour of love!

This bird is so closely related in structure to the birds of paradise that it can virtually be with them; and in any case it affords a sample of what we can expect from the brain of the little blue Rudolf bird, the only difference being that this time the scene is the mainland of Australia.

All kinds of wonderful animals inhabit the "scrub," the genuine Australian bush. There the grotesque echidna, the land duckbill, which still lays eggs like a reptile although it is a mammal, waddles out of its lair at night. There the scrub turkey scratches around; the famous talegallus which somehow had an important law of chemistry drummed into its brain as an instinct, namely, that certain phenomena of fermentation in rotting vegetable matter generate heat. This is the law by virtue of which damp haystacks so easily suffer spontaneous combustion. The talegallus, however, tackles the matter from the practical side; it scratches together heaps of leaves, grass and fungi up to six feet high and thirteen feet in circumference, and it lays its eggs in these little stacks so that the heat that becomes generated will hatch them out like an incubator. It knows how to look after the matter like an expert; the old birds come along several times daily, air off the eggs which lie buried to a depth of three feet, and look to see if the heat has developed properly or, conversely, to make sure that the temperature has not gone up too high. And lastly, they help the young chick out of its warm nest,

when it hatches out; these things are useful contributions to the theme of the bird's brain which we encountered above.

Here in the gloomy, monotonous bush where at most a few yellow flowers at its edge add a touch of "beauty," between fallen trunks of trees, dead branches and those artificial mounds made by the talegallus turkeys lives the bower-bird, which is no less famed among zoologists.

Richard Semon latterly made a very detailed study of them on the spot. This bird does not possess the beauty of the New Guinea paradisians. He is a plain fellow, not quite as big as a jay, brown and grey with lighter tufts, and ornamented only at the neck with a pretty little collar of rose-red or violet feathers. And this simple, quaint customer now becomes your instructor in a mysteriously important field of the bird's brain, which is of the very utmost importance for the question we are discussing.

The bower-bird builds its genuine nest, intended for the eggs and the young, in regulation fashion just like every other bird among its kin. That is a serious matter of duty, which brooks no eccentricities. When the proper time comes, this nest is prepared in a eucalyptus tree or an acacia bush; it is bowl-shaped like a thrush's nest and is made of dry twigs, upholstered with the most delicate little grasses and feathers to make it cozy for the little ones. Naturally it is made just as concealed and inconspicuous as possible, for although Australia has no native felines, it has got climbing marsupials which prey on nests in mighty fresh fashion.

Whenever birds go at the job of building nests in that manner and strive for the welfare of the young, they are in the particular period of their life which is full of cares, the period in which they think the least of their own comfort and amusement. But in the case of the bower-bird this building time is only the second act. It had already built once before, not thoughtfully with family cares on its mind, but in the merry intoxication of first love-time. It is a special sort of a nest; not a nursery, however, but literally a love-nest.

That is the strange thing which has been faithfully built up again in Dresden.

It is love-time for the bower-birds. The couples of lovers allure and seek each other. Then, by the labour of these little birds which are in love, a kind of little temple of love arises on the ground of the bush, far from the spot where the real nest will later be located; it is the house for their wedding.

This is incomparably bigger than the subsequent nest for the children. On a base three feet long and even longer, the birds (above all, the male) first build a sort of hut or tent out of substantial brush-wood. These pieces of brush-wood are leaned obliquely against one another from two sides, just the way children make a long tent out of matches. When the rough tent is finished, with a pointed door in front and at the back and a narrow corridor within, over which the pieces of brush-wood meet like an arch or the ridge of a roof, the finer work begins.

And say what you will, it is æsthetic work, having absolutely nothing to do with commonplace utility.

The rude brush-wood walls of the little house are very smoothly tapestried with delicate green blades of grass. Then the floor is paved with round, white pebbles from a brook in a definite, artistic arrangement, forming little piles and leaving little paths free. Gay feathers, vivid red berries, a scrap of blue cloth that could be stolen, are all fittingly placed in the green grass walls. And lastly, a sort of special exhibition and collection of striking and pretty objects is piled up at the entrance as well as the exit; wonderful little shells of mussels, which had to be dragged along in the bird's bill for many miles from the nearest river, bright, shimmering stones, and by way of contrast amid the multifarious colours, snow-white little bones, which clearly have been selected with the utmost care as white standard samples, particularly the little skulls of bats. Occasionally half a bushel of such treasures are found collected at one spot.

That is the love-bower of the bower-bird.

When it is finally finished and rises in its radiant pomp, a happy time begins. The loving couples seek one another and leap and dance and chase one another and taste all the bliss of love's golden days. And only when this is all over does the work of actual nest building take place, far from this scene.

You only have to take one look at this nuptial bower with its adornment to become convinced forever that a certain, direct æsthetic joy in the "beautiful" resides in this bird's little brain in the solitary, wild Australian bush. Naturally, it is not a complex æsthetic reflection, but it already is a disposition for the brain to react to certain stimuli of forms and colours, which we human beings count among æsthetic effects. Perhaps you will object that a couple of red berries or a gay feather or even a white pebble are extremely paltry samples of beauty. But why does the savage put a shining ring through his

nose, cloak his lady-love in screaming red rags and hang a couple of vivid flowers on his hut? He finds all that beautiful; his small, naïve æstheticism revels in these things. And why do we wear a red carnation in our buttonhole and diamonds in our ears? Put a couple of ordinary green leaves on the window sill of your farm in Australia and place a red carnation between them; your child will reach first for the carnation and leave the leaves lying. And you can be sure that the bower-bird will do the very same thing, and it will drag your diamond earrings into its nuptial bower without fail, if it can lay its bill on them; cases of the kind are known.

Proof positive for our general consideration of beauty is offered by the fact that this bird puts bright, coloured birds' feathers into the walls of its bower as ornamentation. This bird itself has not got much gay colouring on its own body, as was said. But let us assume that it found one of those Capri blue feathers of the Rudolf bird of paradise (which of course does not live there at all, but is a native of New Guinea): there is no doubt that our bird would pick it up and carry it home to its house of love as a very precious find.

Why? Because the bird finds it "beautiful." The little bird naturally cannot analyze this question philosophically. It simply reacts. The savage, too, does not need to be a specialist in æsthetics in order to do likewise. What does the child, which collects bright coloured little stones, know about æsthetics!

So now we have it: on the basis of its sense of beauty, our brain feels the blue bird of paradise to be beautiful; but here is a bird, which itself is already very closely related to the birds of paradise, and at sight of the bird of paradise feathers, the direct feeling of the beautiful likewise results in this bird's little brain.

The next obvious conclusion is that when the male Rudolf bird of paradise sees its own reflection or sees one of its own kind, it will consider that beautiful, too. And thus we have carried our comparison one step further. Raphael had a sense for beauty in his brain; with its help he created the Sistine Madonna, which in turn appears as a thing of beauty to me, who likewise possess a feeling for beauty in the brain. The bird of paradise, too, has a brain and it has feelings for beauty in its brain, comparable to mine. But to me, in my brain and with my tendencies, its plumage appears as a thing of beauty.

I believe you see clearly that the cycle is still not completely closed in this second case.

We have come a good bit closer to the matter by granting this bird a brain and in this brain a sense of beauty related to our own.

But that uncanny gap still yawns.

By reason of his brain which is pregnant with beauty, Raphael creates the Madonna, and I find her beautiful.

The bird of paradise in first line does not create anything at all.

It has something.

It has its brain, and in that brain the capability of reacting to beauty. Furthermore, in the case we cited in New Guinea, it has its gorgeous carmine and sky-blue feathers. It has sufficient sense of beauty in its brain to find these feathers beautiful. And I find them beautiful too. This bird and I have unmistakably come closer to one another—except on one point.

In the causal chain, Raphael creates his picture, he projects his brain to the outside in it, as it were. But here the fundamental question arises. What has this bird's brain (with all its kinship to mine) to do with the origin of its plumage?

Did the bird make itself thus beautiful because it found it beautiful and wanted to look that way?

In other words, is the creative deed of this bird of paradise which thirsts for beauty its own plumage? Then the circle would indeed be closed in this case as well. The Rudolf bird of paradise has a brain with ideals of beauty in the simple original form of finding brilliant cobalt blue more agreeable than an "ugly grey." That is exactly the case with Raphael (naturally heightened to the human element). Raphael creates his picture, which appears beautiful to me because I have a similar brain with an at least passive feeling for beauty. The bird of paradise creates its blue feathered splendour, which appears beautiful to me, because I have a brain with feelings for beauty which at any rate is still similar to the one which this bird of paradise possesses.

But who under the sun gives us the right to make such an enormous assumption offhand, in order to close that circle?

This bird is supposed to have produced the glorious feathers on its body with its brain and its æsthetic ability!

It is supposed to have been its own artist in a certain sense, seeming to throw even the highest human creative art in the shade.

Let us take Raphael once more for purposes of comparison. Inwardly he sees a glorious ideal of art, the Sistine Madonna. And his hand reaches for the brush, and he creates a reflection of this

sublime æsthetic dream externally, out of oil colours on a surface of foreign material. But what a task would that creative bird of paradise have imposed on Raphael? He as a living human being would have to metamorphose himself into his ideal of art, and the Sistine Madonna would from then on have had to walk on earth as a living figure. This idea seems so very obviously twisted, that it does not pay to go into it. And our entire discussion running via Dresden, New Guinea and the Australian bush now appears to have landed us in a fool's paradise after all.

But all that is necessary for us to do is once again to throw grey theory overboard for a while and to take a look at a few more realities in our museum.

It is an old controversial question in æsthetics (we have repeatedly touched on it ourselves) which is the more beautiful: man or woman? Painters and sculptors, to whom we no doubt have got to grant the right of being experts in these matters, have invariably given a practical answer to this question. They have championed absolute equality. On a couple of individual points, the scales may waver, but the whole keeps on evening up.

The old joke still holds good, that a good-looking man is at any rate more beautiful than an ugly woman and that a beautiful woman is more beautiful than a homely man. But from a certain degree of beauty generally onward, a distinction can no longer be drawn. As soon as beauty is opposed to beauty, the female ideal to the male ideal, the Venus of Milo to the Hermes of Praxiteles, the Pieta of Michelangelo to Michelangelo's David or Moses, the scales are exactly even. The "beautiful human being" remains; a wonder work of evolution, which in itself is no longer subject to any limitations of sex.

Now make a big jump and compare an animal to man, which in your estimation can hardly be held to be beautiful and which at the most appears comical to you: the hedgehog.

You know the delicious story about the race between the hare and the porcupine. Every time the hare whizzes up to the goal, the porcupine rises out of a furrow in the field as having "arrived long ago." The point of the joke lies in the fact that as a matter of fact the porcupine did not run at all, but hid his wife at the goal, and it is she who calls out each time, "I'm already there" when the hare comes panting along. Mr. and Mrs. Porcupine just happen to look

so much alike that the stupid hare was outwitted. And the neat, practical moral of the fairy-tale is that whoever is an honest porcupine should see to it that he likewise has a porcupine wife. But the fairy-tale has also a useful zoological application, just as multifarious "truths" can be read out of most revelations of the genius of the people.

This postulates the actual zoological fact that the male and female hedgehog differ only very minimally from one another. One does not need the criteria of beautiful and ugly here; the difference of sex is practically non-existent for the external view. Now our justly esteemed Mr. Porcupine, as you will recall, happens to be one of the animals between the marsupial and the monkey which were very close to your own human family tree. The fact is all the more significant, therefore, that folk-lore is able to employ it as the representative of an external physical form which is so similar in the porcupine male and the porcupine female that the two can easily be mistaken for one another. You get the idea that even the positive difference that exists to-day between the male and the female in the case of human beings (but which likewise signifies no absolute difference between beautiful and ugly) was already totally obliterated in these old and lower animal forms, such as the hedgehog.

The fine individualization of the female and the male facial features, for instance, would then be merely an achievement of evolution in man, and the hedgehog with his hedgehog wife, whom the hare mistakes for the hedgehog husband because they resemble each other to a spine, would bring before our eyes the original rude block of marble, as it were, out of which the higher development of the intellect was first to chisel those magnificent double stars of female beauty and male beauty.

This sounds very nice and is all wrong, as you already know from the earlier part of our conversation. There are animals, to be sure, in which the external difference in sex still appears somewhat more veiled than in the case of man. But already deep, deep down in the animal kingdom, in thousands and thousands of cases the male and female are so fundamentally different that even the mentally and physically blindest of hares could no longer mistake them for one another. And with all due respect to its rôle in nature's most distinguished scroll of ancestors, the hedgehog is not the authoritative example for older animality, but is an honest to goodness exception that proves the rule. The difference between the sexes already be-

comes accentuated to the extreme among the very lowest creatures, compared to which our human relations are of more than hedgehog harmlessness. Just recall our worm bonellia.

Now an unappetizing worm like that is certainly much further removed from all æsthetic comparison than Mr. and Mrs. Porcupine residing in their furrow of the ploughed field. But for our discussion of beauty, the question becomes important how those animals, which we have admitted to be undoubtedly beautiful to ourselves, behave in this respect.

Let us consider the male and the female bird of paradise.

Expectation tells us that we shall encounter more or less human conditions among them in this regard; that there will be a difference between the sexes, but that in the matter of the ideal, beauty will be opposed to beauty as in the Venus de Milo and the Hermes of Praxiteles among us.

And once more we missed by a mile.

Whenever we have been talking about the "beauty" of the bird of paradise, whether in the big, golden one or the small, red, green and white one or the glorious blue bird, we have invariably been "partisan," quite without wanting to be. We were observing the male, admiring the male, and spinning ideas about the male.

These wonderful paradisians, as we have them here before our eyes in the museum's cabinets, are all grown-up, fully developed male birds of paradise.

The females are perched above them in a plain row, and you ask yourself what these wretched birds are doing here anyway. For the contrast is so harsh, that certain quite pretty, soft colours of the female's necessarily seem wretched beside the orgy of colours in the males.

Take the full-grown wife of yonder great paradisian, trailing the fairy-tale wave of gold behind it: this female is brown like coffee on top, her throat, where the husband wears a clasp of emeralds, is a trivial smoky violet, and her belly is fallowish; the whole wave of attached ornamental feathers is entirely missing. Only when you look at this female bird do you comprehend these paradisians being joined closely to the crows and starlings in the system of classification. This female is in fact no bird of the gods, but a simple starling from New Guinea.

In the case of that little jewel of a king bird of paradise, the surprise is almost ruder even. The female is an earthy brown on top,

with a hardly perceptible touch of orange red, and underneath it is yellowish brown with somewhat darker markings—a sparrow instead of a bird of paradise. You would suppose that a courtier arrayed in the excessive pomp of a flaming red coat, white silk vest, green bands of orders across the breast and long coat-tails with gold braid had suddenly thrown over a nun's brown hood and cloak. This nun is the female bird of paradise, her whole life long.

You are forced to say to yourself that in this case not only does a colossal difference between the sexes prevail generally, but the crudest kind of a difference in the æsthetic formation of the body, in external beauty. The male bird is beautiful to a degree that makes the very language of even a human being who is spoiled in matters of art, revel in paradisian figures of speech. And the female bird is just a starling or sparrow, whose limit of colour is expressed by a comparison like "coffee."

One so often hears the little word "injustice" in the struggle of our women for intellectual progress and education. As a matter of fact, there is a catalogue of sins containing many points on which women have periodically been treated unjustly in the history of human civilization; these injustices consisting essentially of the woman being set back behind the man. But what do all these violations of the female, about which such terrible stories are told us in the case of the "human animal," mean compared to the atrocious inferior valuation of the female, which seemingly has been practised by Mother Nature in the case of the birds of paradise?

The male in all his glory, as if Raphael had been his tailor; and the poor little female an eternal Carthusian nun!

And now comes the most uncanny thing of all, lifted out of our previous discussion of those birds with their bowers of love. These children of paradise in the primeval forest of New Guinea possess a feeling and a love for beauty in their bird brains, in the sense of that gay gorgeousness of plumage. Therefore we must expect that the little king bird of paradise female, this lifelong and eternally new-born Cinderella in coffee-coloured inconspicuousness, can in addition distinguish the fact that she is ugly and that Mr. Husband is a jewel in beauty of colour.

Or shall we assume something else, which at bottom is even more bitter. Shall the bird of paradise's wife possess no sense of beauty, while the male has it? That would be the old question of fate: which would be better, to be eternally blind and dumb, or to see and long,

but without fulfilment. That is a choice much like making up your mind whether you want to be eaten up by the tiger or jump over the precipice.

The facts in the case of the related bird of the love-bower indicate absolutely nothing of any such differentiation between male and female in the matter of having a sense of beauty. Both mates enjoy themselves in the nuptial bower like children at play. One cannot understand why things should be any different with the king bird of paradise. Not only does the "injustice of nature" become doubly confusing but a new difficulty is knotted in the whole question of beauty.

You will recall that we were on the point of asking ourselves whether the bird of paradise, whose brain harbours feelings for beauty, could not perhaps have "made" its beautiful plumage itself, as Raphael made his beautiful pictures. And now we suddenly see a double case within our bird of paradise illustration. Let us assume that both paradisian mates, the male as well as the female, actually have feelings for beauty in their brains. The male, let it be immaterial for the present how, succeeds in projecting these feelings for beauty externally as the glorious plumage of its own body: the paradisian male as such becomes a jewel of beauty. But conversely, Mrs. Paradisian proves to be absolutely impotent to perform the same act. With all her feelings for beauty, she has remained an old, grey crow. And the contrast is so harsh that one would suppose the whole assumption would have to stumble over it and break its neck. Despite brain and sense of beauty, it simply seems a twofold and threefold absurdity for the bird of paradise to have painted its magnificent colours on its body itself.

We are really in a tight corner now.

The cabinets of the Dresden Museum with their gay feathered tribe and their clear, clean panes of glass stare at you as if they had done their duty and did not know how to go on any farther either. We must conjure up our mightiest helper: thought, the all-powerful *spiritus familiaris*, which we Fausts of this old planet earth alone possess after all and with which no ugly porcupine nor bird of paradise that's pretty as a picture can lead us astray.

§ 2

No less a person than Darwin had an idea on this very point to which I have led you.

And the idea which he had was no less a one than this: the very fact that only the male bird of paradise is beautifully coloured gives us a direct hint as to how the gorgeous plumage of these birds could be their own work at all.

And, more specifically, a labour of love!

The following is the pith of the Darwinian deduction. Darwin elaborated it more generally for many birds and some other animals. I shall compress the ideas at the heart of it, together with directions for your use, into our example of the birds of paradise, which is admittedly the most instructive and most transparent of all known cases.

It was once upon a time.

How far back is immaterial, only not too far. Birds had already evolved out of saurian-like beings on the road running via the old original reptilian bird archæopteryx. And these birds had become split up into a vast number of groups in wood and plain, mountain and water; the larger groups in turn into smaller ones and the smallest ones into individual species. And so too there resulted the close clan that we encounter as the birds of paradise within the magic circle of Australia.

Who knows where this clan originated? Where were the sites where the present day families of animals originated ages ago? Those are hard questions. Where did horses, deer, monkeys first originate? We see thousands of shifting scenes, thousands of trails whose old sign-posts have rotted away, whose bridges have sunk beneath the ocean.

Let it be enough that the birds of paradise bobbed up one day on the boundary of Australian territory in New Guinea. But they did not turn up as what they are to-day, when we enter the museum and admire them. The male as well as the female among them had only one kind of form and colour. And this colour was inconspicuous; it was approximately the colour of grey on grey or brown on brown as in the case of the female to-day.

There is still an indication to-day that even among the most magnificent sorts, the male bird of paradise once upon a time wore the plain hood and cloak of its better half instead of the jewelled cape in which it is now able to exhibit its paradisian nature.

Among those sorts as well, the young paradisian male at first completely resembles the female; there is no wave of gold flowing out behind it, no green neck band separates a white silk vest from a grenadine-red coat; as a young dandy, it too is coffee-coloured and inconspicuous as a cowled monk. As you know, the strange law seems to run throughout the whole animate world that the youthful form, the embryonic form and the offspring form, in countless cases still repeats strongly marked traits of the pictures of its ancestors. The young frog still drags a tail behind it like a salamander. The very young bird in the egg still shows gill-slits like an aquatic animal. The young whale first develops teeth, such as its ancestors possessed, instead of whalebone fringes. The new-born lion is in part still striped in tiger fashion; the young wild boar and the little American tapir still betray the striped and spotted dress of a very remote ancestry.

If the male and the female of the birds of paradise look very much alike to-day in their youthful costumes, it is at any rate highly probable that this youthful dress is in reality the ancestral garb. Once upon a time the whole race of these birds undoubtedly actually did look as plain and poverty-stricken as that during their entire lifetime. The female must then have been the permanently conservative element. It remained so to this day. But the male one day threw off the ancestral garb, at least on coming to the age of puberty, and replaced it with a radiant, magnificent robe of a totally new kind. How did that happen? That is the question.

Darwin deduces further.

First look at this simple dress of the young animal and of the female of to-day from the viewpoint that it was the former universal garb of their ancestors. Looked at in that way it is, unless everything deceives, what is called adaptive colouring.

The struggle for existence rages in nature. Beings battle for their lives. Colouring is a means in this conflict. It conceals the aggressor as well as the one attacked. The desert animal on yellow desert ground has an advantage if it is yellow, like the gazelle, the jackal, the desert fox, the sand viper and the sand lizard. The polar animal is served by being white as snow: the polar bear, the Alpine

hare, and the most multifarious sorts of arctic birds are white. Green is useful to the tree-frog and the grasshopper. And so forth. Natural adaptation to environment, therefore, has everywhere entered into the struggle for existence. Darwin himself was of the opinion that of thousands of different colours, only the best, the "adapted one" would survive. The impracticable colours dropped out as through a sieve. Only yellow survived in the desert; everything coloured differently became exterminated. Only green survived on green foliage. And so forth. Others have imagined even more direct connections than this. Let the question of "how" be left at the mercy of wide open debate; Darwin too need only be a hint to you, although, as I constantly repeat, there is an intriguing logic about Darwin's idea which has so far not been supplanted by anything even remotely better. But the fact that there is a general adaptation of living beings to the purposes of the struggle for existence, whether for preying or for protection, can absolutely not be doubted.

That original, simple colouring of the birds of paradise too, came under the heading of adaptation, it seems.

"Beauty" played no rôle whatsoever here. What is beauty, when the brutal struggle for existence is involved! Here you have a country, in which masses of wild beasts of prey, felines, half-monkeys, squirrels (these too are very genuine robbers of nests!) and others menace a poor bird and its brood. The slogan is to look as inconspicuous as possible, particularly in the case of those birds which, according to the old rule bred to be a fixed instinct in their brains, did not nest in deep, secure holes in trees, but built nests in the open, more or less within reach. Lucky the bird that was brown as a sparrow! It squeezed close to the brown tree-trunk and was not recognized. The robber saw it sitting motionless on its nest and thought: that is a withered patch of lichen, a bit of crinkly bark, a shrivelled leaf. Mother and brood were saved.

Adaptational colouring, far removed from all idea of "beauty," becomes fixed during such a period of distress. What does the soldier in battle care about æsthetic values, even if he happens to be a proudly privileged professor of æsthetics at home!

That was the prevailing feeling when the ancestors of the beautiful paradisians developed. They all came to be as the young and the females are to-day: products of adaptation, among which coffee-

brown, for instance, was trump because it was the colour of bark. Only, for goodness' sake, no luxurious attachments in the way of plumes! They would have been a burden in the hard service of the times. Let us take the soldier in battle once more. Will he burden himself with a valuable painting on top of his knapsack at a time of deadly danger? Raphael becomes ballast at a time like that. It is the moment in which the Byzantines once bombarded the charging Goths from the battlements of San Angelo at Rome with the masterpieces of Greek art, which Hadrian had collected.

Then a change took place.

Who will lift the veil from the old forgotten migrations of animals? We have experienced the strangest things in this line during historic times. Masses of Chinese prairie fowls suddenly appeared among us in Europe. The migratory rat permanently conquered all Europe in a relatively short time. In former ages, South America was totally isolated for millions of years with an extremely wonderful animal world; then it was suddenly reached by elephants and wild horses and populated by them; after another span of time, this invasion had died out again. For land and sea, altitude and climate, everything changes geologically. In one place abundance causes creatures to increase and multiply and leads them to migrate, and elsewhere bitter need whips them forth. Unexpected roads and land bridges open up, and life flows away.

Just so may the birds of paradise, still inconspicuous at that time, like a swarm of grey-brown crows, strangers to beauty, and bred only by the struggle for existence, have come fluttering into the paradisically isolated primeval jungles of New Guinea.

In general, birds have much more favourable chances for migrating than land mammals have. The blue island, rising up on the horizon, is within reach of their wings. Chance in the form of a storm undoubtedly takes them there by force now and again. If it happens to be a land of luxuriant woods, it will be easy for the bird to make a new home there.

Let this have happened in the present case, at some time, but in any event very long ago. And then what?

At this point, a new chapter, the second and decisive one, starts in Darwin's train of ideas.

We spoke about animal sanctuaries once before. New Guinea is without a doubt a kind of paradise for birds to-day. A tre-

mendous land is this island; almost a little continent of its own. What could not these dense, roomy jungles support in the way of bad beasts of prey, felines and martens, monkeys and half-monkeys, big and little squirrels and so on, menacing the poor feathered world day and night! But almost nothing of the kind is the case. The wonder world of Australia already begins with New Guinea. All those predatory animals which we mentioned belong to higher groups of mammals. There were no such higher mammals in Australia up to the arrival of man (apart from one question about a possible dog, which is still completely doubtful). The last genuine beast of prey (in the group of prowling felines, many of which already feed on fruits, however), just grazes the western border of New Guinea, like an extreme advanced outpost; probably merely a subsequent immigration is involved in this case. In return, primeval orders of mammals dominate the land here as in Australia, hoary old relics of the ichthyosaurian age—duckbills and marsupials. But all the larger meat-eating marsupials of the Australian continent are missing in New Guinea. Strangely enough, there is a large kangaroo which climbs trees on the island. But this arboreal kangaroo is a vegetarian like its jumping relations of the grassy plain. New Guinea's big land duckbills greedily lick up ants, and they have not even one tooth in their mouth with which they could seize even the weakest bird. At the most, one or another small climbing marsupial will occasionally disturb this paradise just a bit as a plunderer of nests. But on the whole, that same enigmatical poverty in mammals makes itself particularly felt in New Guinea, which has led to a condition in not so distant New Zealand, where an island, half as big as the whole of Germany, does not possess a single native mammal, which can be proved with certainty to be such. There is an endless expanse of dense, dark forests; an impenetrable sea of foliage, which even the keen eye of a circling bird of prey can hardly endanger. It is a joy to be a bird here. And how relieved everything seems to be from the burdens of the brutal struggle for existence! Legend's bird of innocence, the pigeon, certainly one of the most defenceless birds, becomes daring and exuberant here, increases and multiplies boundlessly and splits up into more varieties than at any other spot on earth, including those magnificent pigeons which vie with parrots in brilliance of plumage.

And this is the place where the bird of paradise took its decisive

step from laborious self-preservation in the naked struggle for existence to "art."

In the beginning, the birds of paradise were still grey crows, without any attraction of beauty whatever, but they already possessed that simple "sense of beauty" in their little brains, which we found in the related bower-bird and indications of which make themselves clearly enough felt in the case of our northern magpies. A vivid red berry pleased them better than a plain green one; one of the wonderful big flowers of the jungle made more of an impression on them than a mere leaf; a pure, snow-white pebble held their attention more powerfully than a thousand crudely coloured, dirty stones on the bank of the brook.

And more specifically, both the males and the females possessed this "æsthetic reaction" equally.

Now call to mind what we touched on once before. It is an old saying that in the case of human beings, the æsthetic sense is in a certain relation of pressure to the material cares of the naked struggle for existence. Care weighs on the deeper, æsthetic feeling of the soul like a heavy mass on an effervescent liquid. Take some of the mass, some of the pressure, some of the material cares of life away, and the liquid instantly wells up impulsively; unburdened, æsthetic feeling, joy in the beautiful, breaks forth and immediately dominates the whole field, the whole human being. There is something magical about this occurrence, but it is a very ancient experience in human life. And it is one of our most comforting experiences at the same time. It teaches us that we are not waging the fight to eliminate a certain layer of life's crude cares merely in order to sit with our hands folded and do nothing afterwards. When man, the "creature of necessity," if I may so express it, is liberated, a deeper human being grows up forthwith, relieved of the pressure—man, the "creature of art," before whom lies a new world of work, of higher, more enjoyable, freer and more voluntary work.

Formerly, these things were said only about man; in fact, one chiefly had the genuine civilized human being who had climbed to a high plane in mind. The decisive difference between man and the animal was pinned to this very relation between the creature of necessity and the creature of art. "Thou alone hast Art, oh Man!" sang the poet. The animal was supposed to lack that deeper layer, and consequently it could not be relieved of life's material burden.

It was said that the animal, suddenly freed from the need of the struggle for daily bread and the mad chase of existence, eats and drinks, vegetates on, gets fat and lazy and in the end degenerates and loses the last remnant of animalistic brain work, which the struggle for existence had kept at utmost tension.

But this is no longer tenable to-day in this form. It is true that we discussed how important perhaps was the change from the creature of necessity to the artistic being once upon a time at the great crisis of man's origin. But man was just emerging from the animal at that time. Man ascended beyond the animal, to be sure, but only in the sense of becoming the very finest extract of gold distilled out of animality; in the sense of a wonderful crystal that grew out of the mother-liquor of the higher animal by virtue of given laws. Man must already have received the simple tendency and capability of directly feeling certain forms, colours and series of sounds to be more agreeable than others from the higher animal, which already possessed a powerfully developed brain and organs of sense similar throughout to man's.

The Australian bower-bird has plainly shown us that animals can confirm the possession of such "æsthetic feeling." This very bower-bird too already points to that relation between pressure and relief from the cares of existence, which proves true for the bird's brain in any given case with exactly the same consistency as it still does in the case of man to-day.

In the bird, which for one cause or another enjoys far-going relief from the burdens of the struggle for existence without having its strength or health impaired by some attendant phenomenon, this deeper "æsthetic" stratum simply wells up in that identical, metaphorical fashion of carbonic acid suddenly uncorked and released from pressure, as in our own case. You can observe this in the case of every animal, particularly a young animal, at play. Play begins directly concrete care ceases for a moment. And in many if not in all cases, this play already shows the beginnings of æsthetic tendencies; it constitutes a sort of composing and inventing on the animal's part, with continuous æsthetic enjoyment. But there is one other point which is on a much more general and grander scale, and which is the very one that we need for our birds of paradise and on account of which I told you this whole animal fairy-tale.

The Australian birds' bowers are nuptial bowers.

This bird builds them in its honeymoon time, in the full intoxication of love. In the life of all higher and highest animals, at least, love-time is the period of most marked relief from life's burdens, as far as the material cares of existence are concerned. An animal is as if bewitched during loving-time. In all its feelings it belongs to another dimension, as it were; for a more or less brief period of intoxication it is a citizen of another world sky-high above the ordinary cares of life. Something in the animal reaches out beyond the individual: that something is the life of the species, which wanders over generations, over millenniums. I already told you that this is the animal's religious period. But let us leave out all definitions. The main thing is that the spiritual impetuosity of the feelings of love brings about a relief from the ordinary cares of life. Recall the salmon, which simply went hungry at this period. Recall those vicious cannibals, the spiders, which yet sought to come together during this time. Animals, that otherwise hide in the shyest fashion, become obtrusively noisy in the storm of love. The woodpecker rejoices like mad from the most exposed treetop. The deer roars through the night. I remember two squirrels which were in love and which let themselves be touched by my cane, without their waking up out of their enchantment. And quite consistently, in the same moment, æsthetic feelings which temporarily are relieved from ordinary everyday pressure, rise up too. The time of love's feelings becomes at the same time a time of liberated æsthetic inner life, a time of beauty.

Every child knows this in the case of the songs of birds. The rhythmical sounds of the birds' song, which delights our spoiled human ear no less that the plumage of the bird of paradise enthuses our eyes, are love songs, rhythmical melodies of love-time. But that picturesque sense for beautiful colours and form, as the bower-bird gives expression to it, likewise finds its fullest expression in loving-time.

We may well assume, therefore, that our birds of paradise had their liveliest "period of art" with attendant joy in gay and pretty things during their intoxicated period of love, and this already at a time when they were still in the thick of the tough struggle for existence as inconspicuously coloured crows. In those days, the male and the female may have adorned their hiding-place of love with merry red flowers, too, like an amorous pastoral couple gar-

landing themselves with roses; some varieties still do so to-day, according to the practice of those bower-birds.

These paradisians now succeed in getting a foothold in the forests of New Guinea; in these woods, where the oppressive pressure of the struggle for existence is appreciably reduced during non-loving time as well, as it is!

With life on the whole almost entirely devoid of danger from now on, love-time becomes a thrice carefree and ideal holiday there. All living things can go the limit and drink life to the last drop of enjoyment, including the joy in beautiful colours and forms.

The following is very important: Once the road is cleared for all of these effects, it seems absolutely unthinkable that the stirrings of the love-life and the stirrings of the sense of beauty should not have become tied up into a knot one day.

The feeling for pretty colours and forms was bound to begin to exert an influence on individual selection in love.

Essentially the same condition prevailed among our loving paradisians as with the majority of other birds. In general there were invariably more males than females.

This unequal ratio again touches a dark region for us. The question of heredity, which is still wrapped in mysterious night, plays into it: namely, what sort of a law actually does determine that the fertilized ovum-cells shall develop into boys or girls. The fundamental tendency of this law clearly and invariably strives to replenish the species equally on both sides. A certain percentage of both sexes, necessary for the preservation of the species, must invariably be produced equally. There must be a certain number of females and the corresponding number of male births. But in this respect, too, nature works beyond the absolutely necessary minimum figure and with the luxury of a varied amount of elbow-room for reserve production; nowhere else with anything like the mad extravagance in the realm of egg-cells and sperm-cells, but still very noticeably so. A large additional percentage of individuals is put into play by nature. And in this respect, one finds differences between the several groups and species. In the case of some animal forms, this surplus production consists of excess male births, and excess female births in the case of others. The reason why remains lost in the general darkness about these things, but there is no doubt about the fact. And it seems that more superfluous males than females are produced in most cases.

If you choose, you can see in this fact a reminiscence of the original ratio, according to which the so-called "wastefulness" of sperm-cells is appreciably greater throughout than in the case of the egg-cells (we saw that it was really no "wastefulness" at all, just as little as it is here!). In the case of human beings, as was mentioned, a very few more boys than girls are born in this reserve stock; approximately one hundred and five boys to one hundred girls. Here the greater infant mortality among boys reverses the actual figures at a very early stage, so that afterwards there are more females than males. But among many animals, the inequality between male and female births permanently conditions a very appreciable preponderance of males, which are surplus "luxuries" in this numerical sense. Among butterflies, the number of supernumerary males is in many cases a colossal one. This is not imperative for all insects. For example, there is a surplus of females from birth among dragon-flies. But where the tendency to produce a surplus of males has once taken a firm hold, it continues tenaciously. Most birds furnish an example of that. The result customarily was and is a double one among these birds.

On the one hand, every male is happy when it has won a female at all, and guards its marriage jealously, so that as a matter of fact a very large number of eminently honourable monogamic marriages for life is already to be found in the case of these feathered lovers. On the other hand, the still unwedded maid finds herself in the happy position of being able to pick the one that individually pleases her the best: from a whole army of agreeable suitors: that is to say, the one that is able most powerfully to evoke her responsiveness on the basis of certain dispositions in her brain.

You can observe how the zealous suitors present themselves to the much courted miss in highly comical fashion, how they display all their charms before her and somehow strive to prove to her that they are the most desirable wooers, and this with the employment of all manner of tricks which are either the result of their own excitement or are released instinctively by the sight of the female. But we are led to ask, what reasons may determine her individualizing choice among many admirers in this case?

As the machinery of the universe runs generally, and with the bird's little brain undeniably under its compulsion too, one would no doubt have the coy maiden choose the strongest suitor in first line. Her first and most primitive taste would correspond, say, to

the taste of our age of chivalry. The tourney is raging. Whoever unhorses all the others, even though it is only jousting and without mortal danger, wins the hand of the king's daughter.

As a matter of fact, wooing male animals, head over heels in love, frequently engage in the most embittered tourneys before the eyes of the common queen of their hearts and maiden innocence waits prettily until one of the suitors has chased all the others away, and then she says "yes." The ordeal of combat has decided that this one is the strongest.

But who will deny that there is something brutal about this combat theme in love? To a great extent, the little birds in the trees are not fighters by nature. Might there not be still other tests, and less violent ones, to enable the coy maiden to know her own heart?

Let us think of the age of chivalry once more. Lances are broken to splinters, dust steams up, all the opponents lie on the ground, groaning and covered with bruises. The king's daughter wavers. Outside, beyond all the barriers, her singer is singing a sweet love-song in praise of lovely woman. And the impossible happens. She tosses her rose to the singer, and not to the victor in the tournament.

When we hear this, we think we perceive the faint sounds of a higher civilization's dawning. The female seeks out the best one, now as before. But song, the fine, spiritualized extract of man's deepest strength, counts for more than the rude strength of the fist, which is only good at handling a lance. This illustration seems wholly human. And yet how close is the animal to man at bottom!

One day, a very similar, sudden change took place in the case of the bird. Instead of a wild pack of suitors, tearing one another with their beaks till feathers flew and blood flowed, the love-inspiring maiden suddenly saw herself surrounded by a chorus of lovers discoursing pretty, rhythmical sounds—singing. And the best singer won the bride. The sense for æsthetic stimuli, which welled up in love-time, became the choosing female's criterion for judging the suitors and in the end proved the decisive factor. But the song of the nightingale is not involved alone as an æsthetic motive. Among other birds, the fine æsthetic sense had become concentred not so much in the ear as in the eye. And right here the paradisian females' amorous selection became tied up with

their sense of beauty. There sat the female bird of paradise. Twelve paradisian males were around her and strove for her favour.

No complicated processes of thought take place in the little brain of a bird. What happens, happens pretty automatically. And yet it seems as if on that very account there were a very profound logic of thought in these mental processes. Thanks to its inborn sense of beauty, the female bird of paradise finds a bright red berry prettier than a coffee-brown one. And now there are twelve males around her. This male band, you understand, was still habitually garbed in plain coffee-brown at that time. But a single male has a feather on its head which is somewhat more vividly coloured among the brown ones; it is no longer entirely coffee-brown but somewhat more reddish-brown. It is immaterial for the present how that came to pass. Why does one human being have a red mark on his forehead, or a single snow-white lock in pitch-black hair from youth on; or this or that other wholly specific form of an individual difference? Let it merely be the case there in first line, that one of them just happens to have a somewhat redder feather. And our maiden chooses this particular suitor because it has one thing on its body which resembles red berries more than brown ones; in other words, the berries that simply strike the paradisian female as being prettier. According to the very same law, she now likes the reddish feather better and she selects this bird for husband from among the twelve.

The same thing happens a hundred times, a thousand times.

On the average at least, the paradisian males having somewhat more red on their heads draw the prize of mixed love instead of mere long-distance passion and, in opposition to all the others, they succeed in founding a family, with corresponding duration love.

Now certain dark laws of heredity again begin to collaborate. According to the most general modus of heredity, it is probable that when the bird with the variation of the red feather comes to procreate, a tendency to have this red variation will likewise appear in its descendants. If red is continuously the watchword for choosing fathers for a while, the offspring with red feathers on their heads must gradually come to get the upper hand in advance. Now assume that this heritage runs one-sidedly; just as the males are continually selected on the basis of red, while the colouring of the

females remained a matter of indifference, so the increasing frequency of this red variation continually appeared only in the male young. Dark as the more specific laws of heredity still are to us, they seem to leave plenty of room here for many and diverse possibilities. There are undoubtedly countless cases in which the inheritance of such variations spring from the mixing of the parents' sperm-cell and egg-cell; where a variation in the father conversely returns in the daughter; or where daughter as well as son get them. But alongside of these cases, there are also the one-sided cases, in which something seems to work against this transmission of variations. Let us assume that something of the latter sort somehow ruled among the paradisians, but in any event something whose results were consistent.

After a certain length of time there will be nothing but bird of paradise males with red heads. Since the females have made selection a more and more intensive matter, this red has even become very glaring, a brilliant vermilion, beautiful as spun glass. But now this cannot be carried any further and the old situation is back again. The male suitors are again alike.

Then, under the spell of very slight, seemingly accidental variation there appears among the twelve suitors one whose belly is not a pale yellowish brown, but so pale that it is more like a dull white. Its contrast with the red of the head would be striking for our human standards, and would forcibly hold the eye. The choosing female decides the same way as before, and after a certain length of time, all male birds of paradise have whitish bellies.

But snow-white would be even more striking, even nicer; and in the end, all little male bellies are silky white as a result of continued selection by the consistently appraising, love-inspiring maidens.

And now we have a new case. Here is a "deformity" in the case of a male which has a green feather between its coral-red head and silken white belly as a result, let us again say, of some chemical contingency when its neck feathers were formed. But that does not strike the female as a "deformity" at all. Green between red and white is decidedly pretty! The female has a colour sense, which is bound to see that of fixed psychological necessity. After a while, all males habitually wear an emerald-green necktie between their red head and white belly.

Why go on picturing this process in greater detail?

The male king bird of paradise evolves before your eyes—a product of the colour sense of its selecting females, bred out of a "sparrow."

Only the male becomes beautiful, be it well understood. The choosing female does not "select" itself along with the male. It remains standing still; it continues to be the old grey sparrow. But perhaps there is an advantage to this very fact. Paradise is not absolutely perfect in New Guinea either. Once in a while a nesting bird on a nest in the open is menaced by robbers after all. The old sparrow colour was at the same time a protective colouring. It is better that the female should keep this colouring for all eventualities. From this point of view, you could even imagine heredity working somewhat differently. Perhaps in the beginning the gay paternal feathers were transmitted frequently to the daughters as well. But even in paradise, these bright feathers became dangerous for them. The "Good Fairy Utility," great, general natural selection, which suffered no endangering innovations to gain headway in the dire struggle for existence, would have kept the females somewhat in check in this respect despite paradise, and would have applied the brakes on the female side, until it became a settled matter once and for all that the shining pomp was actually transmitted only to the male offspring.

As a matter of fact, in the case of birds with more protected nests built in hollows of trees, putting the brakes on does not seem to have been so important, and so you to-day find the female too possessing utmost splendour of colouring among parrots, for example, under conditions which otherwise are manifestly similar.

Conversely, you believe you can still note how protective natural selection incidentally intervened in the case of the paradisian males, although not so strongly by far as in the case of the female. Quite generally, the male's purely ornamental plumes have developed in such a way as not to hinder flying, and in the case of the genuine paradisians, without any direct connection to the wings at all. In many cases, when not in use in the love parade, these big tufts can be shut up in umbrella fashion and tucked one side. The periodic connection of this whole feathery adornment merely with mating time, with love-time itself to-day appears as a particular trick of nature's. The young male possesses this adornment just as little as does the female. The pomp of plumage sprouts only with first love. And every year when loving-time is over, it drops

out, at least in part, in a special moulting, and only sprouts again with the new mating season. This whole luxury product appears to be connected to-day by a fixed association with the stimulus of love's ardour in the male itself; it is only this heat which periodically brings out this heritage, permitting us to speak literally of "wedding-dress" in the case of the males.

But in any case, the paradisiennes too had their share of living the life in the luxury of this paradise, even if theirs was only the lot of Raphael before his picture. They did not have to transform themselves into their ideal, any more than Raphael himself needed to slip into the glorious figure of his Madonna. The ultimate was fulfilled for their sense of beauty by the sight of these magnificently colourful males. The latter unfolded their plumage before the females and delighted them. The females continued to select the most gorgeous specimens, instinctively with ever improving taste. They all evolved in that way; the king bird of paradise, the big golden one, and Crown Prince Rudolf's blue one. And the beauty contest between the males continues to this day.

In conclusion, listen once more to Wallace, who literally played eavesdropper on the paradisians in their native woods.

"The birds had now commenced what the people here call their '*sácalcli*,' or dancing-parties, in certain trees in the forest, which are not fruit-trees, as I at first imagined, but which have an immense head of spreading branches and large but scattered leaves, giving a clear space for them to play and exhibit their plumes. On one of these trees a dozen or twenty full-plumaged male birds assemble together, raise up their wings, stretch out their necks, and elevate their exquisite plumes, keeping them in a continual vibration. Between whiles they fly across from branch to branch in great excitement, so that the whole tree is filled with waving plumes in every variety of attitude and motion."

What a magnificent picture!

I myself have repeatedly observed the big Aru bird of paradise erecting its ornamental feathers in the Berlin Zoological Garden. In pairing-time, when its adornment is in full flower, this veritable "bird of the gods" is always ready to give way to its instinct for showing off, no matter who is watching it. It is an incomparable spectacle, when the huge trains at the shoulders, with their lustre of gold and ebony, suddenly stand up like the spines of a hedgehog which is rolling itself up into a ball, and form a radiant zenith

sun above the body; until the wild erection gradually relaxes and the golden rays bend and sink down, like the dying jets of water in a fountain at sunset.

Everything "useful" is forgotten during this play. In the woods of Aru, the natives (the last invader of the old paradise, but the worst of them to-day) shoot down large numbers of these suitors that make such a grand show, out of the jungle foliage with arrows. These resplendent males seem to be thoroughly aware of the fact that "beauty" is their love-dart against the females. When placed before a mirror, a captured male bird of paradise looks at itself with unmistakable vanity, and other traits point to the same thing.

And so the old cycle would seem to be really closed.

The male bird of paradise in its beauty appears as the product of its female's sense of beauty, just exactly as Raphael's Sistine Madonna is the product of Raphael's artistically sublime sense of beauty.

In this instance, too, beauty appears to go on a complete journey through spirit and back to spirit.

The means are cruder, it requires tremendous periods of time, heredity's dark work must fix what Raphael with hand and brush made into a painting in the brief favourable moments of a short human life. But fundamentally, the cycle of things is closed there as here. Raphael with his sense of beauty which is kin to me creates the Madonna, and she produces an effect on me by virtue of my own sense of beauty which is awakened by her. The female bird of paradise with its sense of beauty which is kin to me creates the male paradisian's splendour of colour, and it produces an effect on me by virtue of my own sense of beauty, which is merely awakened by it.

The serpent bites its tail. The animal fairy-tale towers in all its splendour.

Is this animal fairy-tale directly true, or does it only contain the symbolic truth of all genuine fairy-tales (which is not to be scorned, either)?

§ 3

Wherever the venerable figure of Charles Darwin rises up in any field of human brain work, there you have consecrated ground.

As a matter of fact, this great thinker and observer held that the mode of breeding by love's selection, as I outlined it for you with the birds of paradise as an illustration, was an actual occurrence in the animal world at a certain height of evolution.

A vast number of "beautiful" things is supposed to have been bred by this method among the most diverse birds. But the same principle is also supposed more or less powerfully to have held sway among fishes and frogs, reptiles and mammals. It is even supposed to have been already in full flower among representatives of the division of the arthropods, where in particular it is supposed to have produced the magnificent colouring of butterflies, a splendour of colour and design which in this case came to be bred in both sexes and about whose effect of beauty no doubt can exist.

Darwin introduced the expression "sexual selection" into science as a technical term for this whole occurrence.

During the more than fifty years since the first clear exposition of these things by the Grand Old Man of evolution, a large number of scientists who were likewise of great importance took his side on this point as well. August Weismann, who begins to belong among the venerable figures of the evolutionary idea, in recent years again enunciated the entire chain of ideas about "sexual selection" in brilliant and convincing form, in classic form, so to say, and illustrated it with numerous new examples.

On the other hand, its existence in the animal kingdom below man has been the subject of violent controversy. Some have not wanted to believe in it in the case of butterflies. Others declared it was only a hypothetical fiction in the case of birds. And from this still others deduced that the whole matter was problematical and felt called upon to condemn it altogether.

As a conscientious chronicler, I am stating this to you here, in order to add a few thoughts that are essentially my own—subjective ideas, if you want to call them such. I am not one of those

very hasty people who cannot polish off Darwin fast enough and who expect all biological progress only from "overcoming" Darwin by a surprise attack. But I do believe that, like so many other good things, Darwin's train of ideas in particular contains possibilities for being progressively deepened, and along this line a number of things can still be indicated here. We shall not get any further than just indicating, as matters stand to-day.

In Darwin's idea of sexual selection one must differentiate between a "universally logical" side, as it were, and a special zoological side for specific cases.

The same thing holds good for his other great, explanatory principle of natural selection. When various possibilities arise in competition, the fittest survives in the long run. Therefore, conditions that are ever more adapted and more harmonious are sifted out of the cosmos as time goes on. An eternal logical universal truth lies in this version of the Darwinian principle, applicable alike to human ideas and systems of stars, in other words, covering the entire field of nature that is known to us. This principle is then applied by Darwin to the specific case of the origin of useful adaptations in the animal and vegetable kingdoms on our earth in the form that the struggle for existence here permitted only the fittest from among certain continually given individual variations to come to reproduction and then fixed them by the aid of certain laws of heredity. This specific practical application could be disputed and has been the subject of widespread controversy, without touching its fundamental logic with its universal significance, however.

So it is here. The bird of paradise story (or whatever other zoological illustration you may choose) logically shows in first line what individual selection signifies in the evolutionary history of love-life generally; what it must signify, it being quite immaterial when it actually appeared; what it must signify when it does appear.

The principle shows us how in this case a bridge is built from certain stirrings in the brain to actual, corresponding conformations in living bodies; it shows us how the brain becomes creative on the road of love.

Call these stirrings in the brain "ideals." Not in an exaggerated sense, but just as simply, for all I care, as a sausage being the ideal of some one who is hungry. How gladly would this starving person transform a stone into his sausage ideal. He cannot do so;

that would be magic. But individual love-selection in the paradise bird's mind can do so. It actually does gradually transform the stone into its "sausage" by looking at it. It realizes its ideal, very slowly, but in the end with irresistible success. Consider this in a higher sense than a sausage; and you can equally well say that the bird of paradise becomes Pygmalion, to whom his dream statue in the end comes in the form of a warm, naked, loving woman. But you can equally well (and therein does the cosmic breath, the universal scope of the principle reveal itself) conceive of this ideal being just as instinctive as possible, you can think of any degree of compulsion in the brain you please as being the motive spring of selection; and in that way too you will unambiguously have the road by which this instinct of the brain can transform itself into concrete reality, into warm pulsing life and achieve its objective, and even must do so.

Our illustration of the bird of paradise specifically shows an æsthetic instinct of this sort in the bird's brain, which you can picture to yourself at your pleasure (as I have repeatedly emphasized) as being entirely an æsthetic "compulsion of the brain," about which the bird simply does not reflect or critically philosophize at all. By means of individual selection in love, the bird materializes its bird ideal and the species in question becomes beautified, both in colours and forms. But in view of the universality of the logical principle, the compulsion does not have to be merely and always an æsthetic ideal like that; totally different selections could be set in motion in the brain in exactly the same way. In short, we here have a principle which is itself an ideal of many-sidedness and multiple possibilities.

On the other hand, there is Darwin's specified assertion that this particular logic had created the rhythmic beauties of butterflies, birds and so on in the intermediate and higher animal kingdom; that we therefore see it holding sway from the gorgeous wings of the peacock-butterfly among the insects to the toothed comb of the salamander's garb of love, from the red throat of certain lizards to the blue star on the throat of the amorous bluethroat, from the ringing sounds, clear as a bell, made by the tree-frog of the primeval forest to the song of the nightingale; and that therefore a tremendous epoch of genuine Pygmalionic art in that sense existed in the animal world very far below man.

If there must be controversy, in my opinion it can only be waged

over this second assertion. The logic in this train of Darwin's ideas is in itself unassailable, in so far as the postulates are given.

One point in our fairy-tale about the birds of paradise was handled superficially by me, and intentionally so at the time. We must come back to it here.

Assuming that the bird of paradise females choose æsthetically, there must be something there for them to select from. There must be material on hand.

That is exactly as necessary as in the case of Darwin's natural selection. In order that animals can be selected and bred pure for the best protective colouring, for green to match green leaves, for example, there must be different colours to select from, with green among them.

And so in our case of sexual selection, variations in feathers that were more beautiful must occasionally have presented themselves from the beginning and could then be selected. In telling the story I simply said that once upon a time a red feather appeared on a male and that this was then preferred by the female and so came to be fixed. Afterwards, a white feather made its appearance and the same thing happened to it, because white went so nicely with red. But when chance at length threw in a green feather, this interpolated contrast looked even prettier and absolutely determined individual choice. The appearance of these variations as such remained purely a matter of "chance" for the present.

Now chance is invariably only a relative term. The little red feather must have had a cause of its own when it appeared for the first time, and likewise the green one and the white one; just exactly as in natural selection in the struggle for existence, the green variation to match green foliage, which subsequently proved to be the best able to survive, must once have had a cause of its own.

It is an old question applying to the whole field of Darwinism, whether, in the final analysis, these first separate causes which produced the material, the variations, did not already work hand in glove with selection itself to a certain extent.

Take a simple case of natural selection and make clear to yourself just what is involved by an imaginary example.

Tree-frogs are living among green branches. They are of various colours, including green. In the struggle for existence, only the green ones continue to survive and keep reproducing ever greener frogs, since green on green alone is the protective colouring that

makes them most invisible to foes. That is extremely plausible and completely excludes the old, home-spun theory of creation with a purpose.

But the fundamental fact remains that this green variation has to make its appearance occasionally. And it cannot be denied that it had to appear early and often, for otherwise matters would not have gotten switched on to the helpful, protective track before the entire race of frogs had been annihilated. Without any antiquated theory of purpose, too, the question could become insistent here, whether something did not favour the origin of specifically green variations from the very beginning, so that all natural selection had to do was to help out afterwards with its swift logic and fix these variations.

Proof of this, be it well understood, would by no means have to relapse into the old theory of creation with a purpose; it could be as "mechanical" or, better yet, as logical in the sense of scientific causality as any other part of the Darwin theory.

Assume that the following could be proved: I am now speaking of a purely fictitious case, but let us assume it anyway.

We have given: tree-frogs perching on green branches. How, purely physically, does the green of the leaves originate?

Light falls on the surface of a body. It is simply an effect of the superficial arrangement of smaller parts which are made in a particular way, how this light is treated: whether some rays of light are swallowed up and others are reflected. A particular condition determines, for example, that the green rays are reflected and that therefore the surface of the body appears green on the whole.

A situation which produces green exists in the case of the small parts of the green leaf, on which the tree-frog is sitting. Now it might be possible that if the frog stayed there for a considerable length of time, certain little parts of its skin might be directly influenced by and to the best of their ability approximate to the situation existing in the little parts of the leaf beneath the frog.

You could imagine this taking place purely physically. Assume a relation between two wires, through one of which an electric current passes while an induction current is generated in the other one. Or take a crystal which is dipped into a solution and exerts a certain "directive force" on the new crystals forming in this

solution, forcing them to take on a particular form. Suppose that small parts of the tree-frog skin gradually adjusted themselves to the situation existing in the skin of the leaf, like little magnetic needles; and the result would be a tree-frog that would be turning green. A particular force would meet green varieties halfway and would bring them out. And with these variations it would have been child's play for the struggle for existence, in which "green" spelled protection definitively to breed a green species.

The illustration in this form is fictitious. But if anything pointing in this direction could ever be really proved, it would put a different face on the theory of natural selection.

Now, in my opinion, it can be asserted with a fair degree of certainty that such a responsiveness on the part of the material must already actually have taken place in sexual selection, wherever it may have appeared.

Throughout the whole organic world, rising from the bottom, there runs a principle which years ago I characterized as the "rhythmic principle."

Think of the rhythm in an artistically articulated and arranged piece of music, or the harmonious rhythm of motion in dancing. Rhythm, however, is the basis of all ornamentation, of arabesque generally. Rhythm determines the magic of certain combinations of colours. Rhythm dominates the columns of our temples as well as our verses, the formal side of a painting as well as the technical structure of a tragedy; it embraces the whole tremendous extent from a Beethoven symphony to the carving on the back of a chair. Though in its finer development it can produce an effect of ineffable warmth, there is invariably an absolutely mathematical trait in the innermost nature of the rhythmic element. It is the extreme opposite to all arbitrariness, to all chance confusion of parts. A particular, unified, inner law determines all integral parts of the whole, assigns their place to them and lets them become something particular through being supplemented by other parts. The recurrence of certain sounds, certain forms or colours in the rhythmical element is no longer a simple succession in time, but it is an important, retroactive repetition. The essence of its being is harmony, in which opposition, contradiction, complication, momentary disharmony are only subordinate means to an end, but do not possess the autocratic character of chance.

Rhythm has an agreeable, elevating effect on us and makes us feel happy, and it produces this effect directly by its very existence; it arouses no wish in any other direction than merely that it should exist. Rhythm as such does not produce hunger, nor desire, nor passion stirring you to your depths: its effect is the pure enjoyment of the thing itself. To that extent, it lies outside the bounds of the actual, practical struggle for existence, which otherwise prevails everywhere. Only indirectly does it become a force there too; namely, when two equally good-possibilities are open to choice for cruder utility in the realm of life's elemental passions for possession, a plus quantity of rhythmic agreeableness on the one side can decisively determine the choice.

You see at once that such rhythmic stimuli constitute the beauty of the male bird of paradise for us to-day; and that if our animal fairy-tale holds good in Darwin's sense, the bird of paradise females by their individual selection in love bred beauty in the sense of such rhythmical effects.

Now it cannot be denied that a certain tendency to produce rhythmical forms actually does already extend upward throughout the entire organic world, from its very lowest steps.

Your judgment must be cautious here in one direction. Purely practical selection too has within it a certain constant tendency to work out more or less harmonious conditions: Wherever we meet with the old, long labour of practical selection, we encounter forms which bear traces, at least, of something rhythmical. All the vital processes have something of the kind about them. We do not speak of "organic" life for nothing. Organic invariably signifies something worked out rhythmically, something unified. You clearly have occurrences with a rhythmic ring to them in the reproductive sequence of living beings, in heredity, in metabolism, in division of labour among the cells of the higher organism, in short, in most of the results of evolution which we have discussed. In this sense, all life on earth is a kind of grand rhythm. But once you have stretched it that far, you will also find the analogy in all inanimate permanent systems of the universe. Our planetary system shows rhythmical traits, as the Pythagoreans quite rightly recognized. The floating systems of double stars in the world of fixed stars come under the head of this concept somehow. You can rise with Humboldt to a vision of the entire universe as a triumph of harmonization and unification maintained for æons,

and whose æsthetic valuation is nailed fast by the word "cosmos," which really means "adornment."

But all this does not hit the nail on the head of what I mean specifically by the "rhythmical tendency of life."

At one stage in the inorganic world, which undoubtedly offers a very great approximation to certain phases of the phenomena of life (greater than any other stage), we encounter purely mathematical-rhythmical directive forces which must take us aback merely from the viewpoint of balance and adaptation. I mean the world of crystals. The rhythmical element in the various individual crystals and crystal species has delighted the æsthetically stimulable human eye from time immemorial. This element at the same time makes its appearance so obtrusively, so absolutely dominating things, in such headstrong and extreme fashion that it is extremely hard, to say the least, to imagine that it is merely a system of fixed practical harmonies. Naturally, in this connection one does not think of directive forces that proceed from the mechanical world. But one's attention is involuntarily attracted to directive forces which shape things rhythmically as a purpose in itself. I can tell you nothing about the real seat or the nature of these forces or this force, but at any rate I am of the opinion that something special must be involved here, which is not contained in nor exhausted by our physical ideas of gravity and reactions to light, heat, electricity, etc., in the crystallizing substances in question.

But what might still be contestable in the world of crystals is in my opinion already absolutely uncontestable in the lowest stage of real life.

There you have the radiolarians about which we spoke once before, microscopically small one-celled protozoans, well-nigh still of the most primitive sort, regular Rumpelstilzes in the sense of our earlier cell fairy-tale. The different varieties of radiolarians are all very similar in structure and they all lead a similar swimming mode of life. For a supporting scaffolding in swimming, their soft cell substance secretes silicious particles, which are united in a definite arrangement to form a sort of skeleton or shell. There is relatively a very limited scope for purely utilitarian and protective purposes here, and one would accordingly expect very little variety. Instead, every one of about five thousand sorts of radiolarians forms its little flinty shell for the purpose of a float according to a different, strictly rhythmical pattern and one which is extremely

pleasing to our eyes. The patterns of crystals, as we know them from snow crystals, for example, are repeated and varied with a kaleidoscopic inexhaustibility of themes, and a vast number of artistic ornaments which we human beings have invented in the course of our creative art, have been anticipated by these radiolarians. A number of fat folios can be filled just with a selection from this wealth of forms. In this case, a directive force must proceed directly from the living, organic cell, creating rhythmically and varying rhythmically. Naturally there can be no talk about any love-selection in this connection. Some force or other finds definite self-expression directly in the one-celled organism as in the crystal, only, as it seems, extraordinarily much more abundantly.

You find an overwhelming profusion of such rhythmical arrangements of bodily secretions in the intermediate animal kingdom as well.

Any conchological cabinet, with its incomparable glory of forms and colours in the shells of mussels, snails and cuttle-fish, will afford you a magnificent example. Here, too, chalky formations are excreted from the living body of the animal (which is already highly specialized and many-celled); in first line for a visible, practical purpose, as a shell, a house, a domicile for the living creature. But infinitely beyond that purpose, this chalk house is built with style in the rhythmic sense, it is ornamented in a fashion that arouses the enthusiasm of the human artist and in the face of which even the faintest possibility of its being merely a chance accompanying phenomenon and a case merely of the human mind reading all this into it ceases to exist. The long series of shells of primeval cuttle-fish of the race of the nautilodians and the ammonodians, constructed with a sense of style, extravagantly covered with a profusion of inexhaustible, rhythmical ornamentation likewise teaches us that in this region of the animal genealogical tree this ability existed millions of years ago just as energetically as it does to-day.

The love-life of many of these molluscs is already on a decidedly high plane; you will recall the vineyard snails and the cuttle-fish. And many of them already have eyes that see very well. Nevertheless, it is hard to think of genuine love-selection in the bird of paradise sense as the starting-point for this rhythmical play of shells. If you think of the oyster's mode of life, as I described it

to you, you will not hit upon the vaguest supposition of the sort. Darwin himself consistently excluded the entire mollusc kingdom from sexual selection. And yet we find this magnificence of rhythmic forms here!

However, it is perfectly obvious that if such rhythmical motive forces already existed simply organically from a very early time in life and continued to make themselves felt occasionally, they must also continually have played a rôle in individual variation.

In animals which were habitually coloured inconspicuously for protective reasons, they could occasionally have produced a gay colour pattern, a conspicuous ornament as a personal, inborn variation.

In the case of animals with real individual choice in love like our paradisians, sexual selection would have set in and permanently bred this material pure.

For this purpose, you understand that in this case we would already have genuine rhythmical raw material, æsthetic material aiding the production of variations!

For instance, in the case of the magnificent red, green and white garb of the king bird of paradise, this noble triple chord of colour could have been thrown up at one time, as one cast by the rhythmical play of forces; and love-selection would then merely have needed to preserve and perpetuate it.

There is no doubt that by this co-operation of an inner, rhythmic principle the work could already be made very much easier for rhythmical love-selection than was even assumed in the fairy-tale about the paradisians.

And as a matter of fact I believe that the next important thing we must do to the Darwinian idea of sexual selection in the way of deepening and supplementing it, is to have this hold good for the birds of paradise and their kin.

Of course, this auxiliary idea can be developed and stretched to such an extent that it will threaten to take up all the room which the main Darwinian idea occupies, and blow up this original idea and in the end make it burst like a worthless toy balloon.

You can hardly have escaped a shrewd suspicion that this grand "rhythmic principle," which works directly out of organic life without our being able to prove in any way that it has any connection with the more specific brain life and mental life of the animals

concerned, could in the end, with the proper interpretation, suffice to explain the whole magnificence of the birds of paradise, about as follows.

At some time the old rhythmic directive force of their bodies gripped the paradisians again. This force which expresses itself rhythmically invariably has something of the nature of a luxury about it, as opposed to useful and protective adaptations. You believe you always see it make a brilliant show only where a certain protected period of calm had intervened; as in the case of the radiolarian floats which are practically final achievements from the viewpoint of utility, and in the case of the ammonoidian shells, which are likewise technically perfect products. The entrance of the paradisians into their period of sanctuary might therefore have become important in this respect too. Perhaps very abundant food obtainable without effort determined a special high tide of rhythmic creative activity, about the same way that Hugo de Vries considered such crises in nutrition to be the cause which released particularly marked variations generally. In any event, rhythmical overproduction could go the playful limit, particularly at the expense of utility, only in a state of excellent protection. That the sanctuary had limits in this respect is shown by the circumstance that the young and the females, which were the most in need of protection, were almost entirely bred away again from this rhythmical extravagance and were made inconspicuous by means of simple utilitarian adaptation and natural selection.

Since the connection between the rhythmical ornamental feathers of the male and the time of love cannot be dismissed offhand (for these luxury plumes become augmented particularly pompously toward mating time, as in the case of other birds), we might suppose the following supplementary explanation.

Love-time is a sort of white-heat for these animals. There is a particular excitement and force about everything. Just as the eyes blaze brighter at that time, so the blood flows in livelier fashion through the whole surface of the body with all its attachments. This in itself may make the feathers more luxuriant, and the colours of the feathers more lustrous. But it might also be that from time immemorial this instinct of rhythmic form might have made its appearance most strongly in this forge of mating ardour. And to this day, where its work is approximately fixed and determined by heredity in the several species, love might be the subjective, phys-

ical stimulus which released this inherited, rhythmic directive force anew. One might further assume for individuals, that the strongest individual males would kindle the old rhythmic heritage most luxuriantly on the flame of their wild heat, and would therefore produce the gayest, the most ornamental effect. These males will have the most brute physical force for obtaining females and so the rhythmic heritage will continue to be bred all the more surely.

In this way, individual sexual selection by the females in Darwin's sense would not take place at all, as you see. It would not have been required at all for breeding the ornamental colours. If you still wanted to leave it a very last little possibility of a rôle to play to-day, you might say at the very most that if the female still has a choice, it invariably favours the male which on the whole is most luxuriant and most shimmering, but without any consideration for finer nuances of colour or form—a poor paltry remnant of the whole Darwinian fairy-tale magic. The brain would be well-nigh entirely out of the whole matter, and in the eventuality of the last tag-end of individual female choice being eliminated, it would be completely out.

In bygone years I have at times felt inclined to picture things wholly or almost this way. If my idea of the "rhythmic principle," which seems so unavoidable to me, had met with more approval during this time and found more people to develop it and show what might possibly still be done with it and how far its range extends among the highest organisms, I might have felt like going along more resolutely here for some distance at least. Darwin's principle would remain in force for a certain degree of brain development which was capable of choice, but it would be very questionable whether we should need its help at as early a stage as the birds of paradise.

Meanwhile, the opposing arguments from the Darwinian side still remain much too strong for me.

It is certain that the human brain appraises and chooses æsthetically. It already did so and does so in the case of children, savages and prehistoric man. We are also quite certain that the human brain is only a stage of the animal brain.

I absolutely cannot understand how such a deep thing as this, coming out of the innermost heart of intuition, and absolutely not attached to any particular maxims of reason (to human ideational life, for example) could have blown into our human brain as some-

thing totally new. It would not be what one would expect, but rather the extreme exception, if this whole faculty should be entirely lacking in the higher animal, and therefore in the bird as well.

Despite all the controversy on the subject, there is no doubt about the fact that a large number of animals can see very well. What a lot of trouble was gone to, for example, to dispute that our bees possessed a good sense of sight, and how brilliantly it was proved in the end! All our coloured flowers, which are contrived for attracting insects, teach us very clearly that insects already see colours and relatively fine colour contrasts. In my opinion, whoever can read the signs of inns painted in colours, so to speak, will also, to continue speaking in human terms, be able to appraise costumes. Any one who wants to make his attack at this point, therefore, must first overturn Spengel's and Darwin's whole theory about the relation between flowers and insects; but that should prove mighty hard to do. No one in possession of his five senses will doubt that the red alluring colour of the cherry or the strawberry (these berries too derive benefit from being seen) was not first invented for the benefit of our human ability to draw distinctions.

Pure utility, direct natural selection with the survival of the fittest in the struggle for existence, must in first line and of absolute necessity have led seeing animals to distinguish colours and make very exact distinctions even, and thoroughly drilled them in the matter of sign colours in the search for food, attracting colours, warning colours and so forth.

It surely is obvious, that the eye and brain which were excited in that way also hit upon the direct attractions of colours, when you stop to think that here too perfectly simple, compulsory laws held sway. Complementary colours next to one another, such as red beside green, produce a more agreeable effect than other colour combinations. The eye runs more easily and quickly over a pleasing ornament than over a tangle that is hard to decipher. A longish rectangle, such as our tables, cupboards and windows represent in contrast to a square, is more agreeable to the eye than a perfect square. Fechner has for all time elucidated these psychological laws applying to human beings. They do not first pass through critical æsthetic consciousness in our case either. They order your brain around, just as gravity does a falling stone. If

you are a Fechner or some other great modern thinker, you can also possess them secondarily, so to speak, as cognition in your surveying consciousness, just as you might consciously have grasped the formula of gravitation with Newton; but you do not have to do so, and the inner compulsion in the brain will still remain.

On the other hand, the action of the bower-bird in gathering red berries, not to eat them, but to stick them on its nuptial bower, continues to exist. This same bower-bird brings along blue feathers and shiny pebbles which it could not possibly eat. Something must be connected with the red, the blue and the shining white colour, which does not run along the line of food instincts. The bower-bird (and our magpie is exactly the same way) steals objects of human adornment when it can. You cannot dispose of all this with some cheap joke about birds not being professors of æsthetics. True, they cannot think with Fechner and Newton. But in this sense, their brain "falls" according to the æsthetic law, just as well as a stone falls under the compulsion of gravity.

You can observe plenty of cases outside of their actual love-life, too, in which higher animals, birds as well as mammals, choose individually, favour particular individuals and reject others. Every animal keeper knows of the strangest cases of friendships between animals as well as between individual animals and individual human beings. I admit that much of the material applying specifically to sexual selection is poor. But I consider that the observations which are supposed to argue against any existence of individual choice by the sexes in love are even poorer.

One person makes his observations in a zoological garden under totally abnormal conditions, where you could likewise draw the conclusion that some animals were forever sterile, because they never reproduce in captivity. Another one argues from his observation of polygamous relations that have evolved by chance, where the male is at the same time the pasha of the herd and brute force naturally plays a special rôle. If individual sexual acts among animals look like brutal cases of rape, this or that observer concludes that with such crude, coercive customs it is impossible for any finer selection to exist anywhere else. I could only wish that the champions of this opinion possessed the magic cap of the fairy-tale, which makes the wearer invisible, so that they could once go from house to house unseen, and take a look at the human act. The statistics of brute force would soon be so voluminous, that the theory would seem close

to being a certainty that in the case of the human being too there could be no love-choice of a gentler kind, in which the subsequently brutal man had once been the object of free, individual desire.

After all of the foregoing, it seems most probable to me that the double process started at a certain stage of the animal, and that the two played into each other's hands: powerful co-operation from below, in the form of variations that are already rhythmical; and from above, giving the preference to such variations, on the basis of a faculty of the brain for reacting positively to such rhythmic things.

In this formulation, the idea has the fascinating thing about it that it makes the same principle operative both "below" and "above."

While simple life, by virtue of a primordial gift, manifests an immediate directive force for producing rhythmical forms purely and fundamentally organically, the same thing makes its appearance in the brain as a faculty for placing values on things, as a measure of feelings. Wherever the rhythmical element is encountered by the brain, it is felt as something agreeable by the latter and is in turn protected and fostered by this higher organic authority with its new means. This already takes place in the animal by sexual selection. In man, it later takes place through active art as well, in which connection the idea of the implement, which the animal does possess, became important.

What we are to imagine the road to have been, by which something which at first belonged to the entire body, so to speak, gradually came to break out independently in the brain, constitutes a problem in itself. But that merely leads other questions, about which the material is perfectly clear. The brain too consists only of cells. It is merely the condenser, the multiplicator, the unifier of properties of the body which are already inherent in the whole; it is merely the representative of the identically same life at a more highly developed stage. In the course of our whole conversation, we have sufficiently established the fact that your "spirit" up there is not a special homunculus which motored in separately afterwards. Take off your clothes and ask your naked body questions, and you will receive spiritual answers and vice versa. Here, Darwin's general view of the animal and man must hold good; and we have no reason to surrender even an iota of it.

Even so, I should like to leave it an open question, to what extent the functioning from "below" may still have preponderated over

the work of the brain in this whole interplay on the bird of paradise level.

With existing, rhythmic brain selection, one may well consider whether occasionally a very much greater wealth of material was not thrown up spasmodically from below than Darwin himself considered possible.

I consider it thinkable in de Vries' sense, that very special "periods of mutation" occasionally set in for this rhythmic fundamental principle during the geological epochs, creating an enormous wealth of variations in this direction. In the case of animals which were already more intelligent, mental selection may correspondingly have flourished with brilliant success at that time. Afterwards, this production of rhythmic variations would have let up more or less greatly for long periods of time, and during this intermission mental selection too would naturally have stagnated because of the great shortage of material. That would enable us to explain many strange things in the behaviour of animals to-day; just as we must always bear in mind the fact that the bulk of the entire animal world of to-day makes an impression of boundless paralysis, of veritably petrified stagnation in contrast to the extraordinary evolutionary mobility which must have existed in it once upon a time.

In any event, the facts of the matter, viewed in this way, join up very well with the high philosophical road which our whole conversation has so far been travelling along. The æsthetic element, which was already a fundamental principle of life down below, and perhaps even of the whole universe, if you stop to think of crystals, breaks out in the spirit of the brain, seeing and selecting. Rightly understood, matter again becomes spirit, because all matter was in reality something spiritual from the first beginning. Spirit does not sink down to matter, but matter appears as the fundamentally spiritual.

Wherever mysteries still persist about these things, they apply just as well to the human as to the sub-human.

If you choose to consider it mysterious that nature is supposed to produce rhythmical things by a lower, organic directive force, then you must declare that human artistic creative work is far and away more mysterious. For you do not do that with your conscious higher reason either, but an enigmatical "it" which is uncontrollable and cannot be directed by reason throws things up in the poet, painter and musician, periodically stronger and individually stronger, in the

strangest modifications and connections of a deep, dark stratum of life, which we are and again, as surveying intelligence, are not, although this stratum is undoubtedly in us; a mysterious, dark business throughout, whose course, beginning and end neither a zoologist nor an æsthetician has been able to see through so far. Do not let any one talk you into believing that any one knows how a poet produces in his innermost being, and that therefore he knew for a certainty that one could not postulate the existence of materials from this factory in the realm below man, in the animal world, in the general organic world. For the present, he knows absolutely nothing about the nature of the human poet in this sense, and so he cannot fix any limits either.

§4

But it is not our task here to track the fundamental elements of the æsthetic principle and narrate the primitive history of art.

The æsthetic element got into our discussion of love only because it seemed to offer the first good example of the success of individual love-selection.

No matter what value you may choose to place upon the bird of paradise story, it furnishes a turning-point in the great terrestrial love-story, where the fundamental principle of this creative love-selection, proceeding from the brain and transforming the breed, was bound to become of the surest importance, beyond the vestige of a doubt: and that was in man himself.

Whether or not there was ever genuine "sexual selection" among animals, it did exist from early times in the case of man, it still exists to-day and will continue to exist in all foreseeable time to come.

And since it is the love-life of man that we now want to get to with increasing enthusiasm, it is only here that the genuine, significant pith of gold, which the detailed discussion of the whole principle contains, comes to light.

I related to you how in the oldest history of man, somewhere back in the Tertiary, certain traits seemed strikingly to point to a sort of sanctuary period, when man existed under somewhat similar conditions as the birds of paradise in our animal fairy-tale. I expressed the opinion that the æsthetic sense was awakened particularly strongly in man at that time; if it already existed in the animal, then merely in the sense of a tremendous intensification; if you consider it as a new phenomenon specifically and only of the human brain, then as an actually new achievement. But that at the same time, this happy period had also proved favourable to certain ethical and other mental traits of a noble sort in original man.

It is immaterial how early all this may have crystallized to a certain degree: from a certain stage on the grandly and ever more grandly developed human brain was filled with a whole world of æsthetic, ethical and intellectual ideals in fermenting superabun-

dance, and this torrent, craving an outlet, still rushes through us with ever increasing force to this day.

In the intervening thousands of years, a tremendous arm of this stream has poured out into creative art, poetry, painting, sculpture, music. We have filled our old planet with a world of pictures, statues, musical compositions, imaginative configurations of all sorts, which show the ideal life, the creative longing of our human brain projected outwardly with supreme power, and immortalize them to a certain degree in the symbolic signs of dead material, in colours, marble, printed characters of speech and other things.

Another, no less mighty arm of the stream recorded itself in our moral and social establishments of society, which likewise survive the individual, which form the possession of generations and which can continually be independently developed and improved by future generations with ever new ideal adaptations.

The third thing is the continued road of Pygmalion in the sense of the bird of paradise story: man, by constant individual love-selection on the basis of his brain ideals incessantly increasing, developing, improving the breed of the human material, the race, the species itself as a whole!

It is clear that in the end this road must be the greatest and the most decisive one of all.

In the end, it embraces both of the others.

In the end, all greatness, all progress of creative art depends on the concrete existence of as many and as highly developed, æsthetically feeling and producing brains as possible, on an élite of æsthetic variations bred as well as possible in the human material. All hope of ethics for the permanent conquest of humanity likewise depends in the end on ever increased human material which is ethically susceptible.

Even assuming (in the sense of a possibility of the inheritance of acquired characteristics and characteristics imparted individually by education, which I cannot dismiss) that æsthetic and ethical teaching, example and environment would in the course of generations cause a certain inherited plus quantity to become fixed in the human material, the constant improvement of the breed of this material could not be dispensed with if complete progress were to be achieved.

Love in the service of ideals can alone achieve this actual breeding of material in flesh and blood.

If I have filled my mind with the ideal picture of a human being

who is physically as beautiful as possible, who stands mentally as high as possible and who assays as much gold as possible in ethical content of character (one having a beautiful soul in a beautiful body!); and if, with the eyes of this longing for beauty, I now go a-wooing, instead of painting or writing poetry; if I let a long row of human individuals of the opposite sex pass before me, and finally select the individual who corresponds most closely to my idea; if I consummate the sacred act of nature with this human being of my choice, which according to a primeval dispensation of life has a greater power even than the supreme deed of the creative artist, since it is granted to lift up a new, warm, pulsing human body out of the mystery of procreation, a new human soul consecrated to the ideals of human longings; if I make a new human being bloom forth from the noblest fertile ground that my longing for the ideal could find . . . then I am guiding the dark undercurrent of things, then I am making love a power in the ideal and at the same time I am giving the ideal the Pygmalion force of love.

It is not necessary to say that the occurrence in this purest form must ever be the rarest exception. Infinite sources of mistakes, chance and compulsion have from time immemorial crossed and obliterated this pure ideal choice. There are moments, when every one of us, thinking of the choices in love which he has met with in his own life, feels as if he were on a most barren, hopeless journey through a wilderness, where all true ideal choice lies buried under mountains of sand.

And yet, at this stage, too, natural evolution is more consistent and more powerful than our pessimism.

On a certain average at least, definite approaches fostering ideal choices in love have again and again triumphed over all obstacles from time out of mind. No sand storms of confusion in the world, no matter how tremendous, have been able to stop choice in love from gravitating for thousands of years towards that fundamental stock of simple demands: character which is ethically better, a more agreeable disposition, more wide awake intelligence, a body more beautiful, more harmonious, healthier and stronger (for health and strength is a form of general beauty!).

As soon as you eliminate certain disturbing factors of social and economic life, which could and can interfere here, you can absolutely trust the human "ideal instinct" being well aware of the right road in its dark urge, to-day as thousands of years ago.

And the more room you leave mankind to free itself from the sources of error through future education, the more clearly must this reveal itself; the clearer must its practical effect become.

In this respect, the "moral," the logic of the bird of paradise story, is absolutely decisive for the future of human evolution, even if the story were only a symbolical fairy-tale.

The mortal enemy of æsthetic luxury production by love-selection was the excessively hard struggle for existence. It reduced all the beauty of life to the sober grey colours of necessity and protection. This principle is a perpetually recurring one. For this reason it seemed so very probable to us that man, starting with such a lively luxury production in this sense, was himself an original product of a greatly inhibited struggle for existence, and possessed an originally "paradisian" tendency. Afterwards, he too was thrown into the cold water of the brutal struggle for existence. On the one hand, the cold water steeled his strength mightily. But on the other hand, it constantly had the effect of repressing his most important, specifically human fundamental faculties to a certain degree. Devotion to art, ethics and science does not flourish amid brutal combat. Neither does fine love-selection for the purpose of materializing nobler ideals bloom then. It cannot possibly flower when need and rape are rampant. Man with those noble qualities is not a genuine warlike animal and never will be.

But we see a certain automatic regulation gradually coming about.

At a certain stage, on the strength of his own labour, man can leave off work as far as a certain part of the brute struggle goes. We still have class and mass and racial struggles on earth to-day, bloody wars and bitter need. But our eyes are already beginning to see occasionally through the red clouds of smoke and the clouds of the simoom, if only for a few moments at a time. The struggle between human beings is no longer quite the main thing. Our fight with the elements, with the deeper, natural stratum of our planet, already is really far more important everywhere. In this fight, for reasons of pure utility as well, it would be far better if we human beings would stick together solidarically and conclude peace among ourselves. We already see for a certainty that the elemental conquest of our earth, if carried far enough, could open up so many economic sources of food that we would no longer need to tear one another to pieces for economic reasons. In order to reach that point, however, we need a still more improved technology. Technology,

however, rests on science, and it is already the case that science can flourish only in relative peace.

It seems to me that herein lies a necessary regulation of things, which must lead us again at a certain height of civilization to a long epoch of continued approximation to peaceful conditions; in fact, I even believe that despite all the clash of arms in the world we have already crossed the actual, ideal threshold of this epoch.

Our own tremendous work on earth happens to have a tendency to make us "paradisian" again in times to come.

For love's eugenic selection, this would mean a constant decrease in the sources that impede it and which are still so abundantly on hand; its pure power would first be brought fully to light thereby. With infinitely finer sensibilities and clearer vision, infinitely more individualized and valuing the individual element more, as we already are to-day, any relief from pressure along this line would necessarily work veritable miracles among civilized human beings.

It certainly is an elevating dream to imagine a humanity, which has concluded peace within itself, whose brute struggle for existence is now fought out solely between human beings and the elemental forces of nature with the weapons of science and technology, whose supreme happiness is experienced with values of art, values of science, values of thought, values of character . . . and in this humanity, an almost complete freedom of choice in love, which now incessantly continues to improve the breed of man's naked body and naked spirit as well, along the line of this ideal of happiness.

The red, scorching simoom of the desert still whips on fiercely enough over our poor human race of to-day for us to permit ourselves for just a few moments to see clear through into this land of dreams. For it is just this still faith that grows up in us out of the simple logic of the bird of paradise legend: that longing in the end creates what it beholds . . . that out of the unknown bottom of nature it first makes a more beautiful picture rise up in the depths of the brain that are veiled in night, an ideal, hovering at first like an intangible phantom over the grey waters of the original mystery . . . that it then makes a statue spring into existence out of white marble . . . and that at last, this statue, animated by love's choice and the mystery of procreation, acquires the rose-tint of flesh, steps down from its pedestal as a beautiful, naked human being, walks among us and then, in a sacred hour, lies in its naked beauty on the couch of love, which now is the procreative bed of the ideal as well,

and procreates man, again higher and more beautiful, in real flesh and blood.

The clearer and richer humanity became, the clearer and richer the possibilities and the scope of its individual choice in love were bound to become by degrees.

Despite all attempted opposition in the history of civilization, a tendency has ever fought its way through ascending humanity, to place man and woman side by side, as having equal rights in the highest values of life. This was already due to the simple victory of growing individuality, which could not stop at sex. For our love-selection, this signifies that to this day, both sexes practise selection and both sexes are selected, and that therefore it is not merely a one-sided affair as in our fairy-tale about the birds of paradise. Endowment and inclination toward the same direction or mutually complementing directions on both sides could come together in this way and improve the breed far more vigorously along definite lines.

The incomparable means which man gradually gained, not only for manifesting his beauty of body or external bodily health purely nakedly and physically to the eye, but for making his inner character outwardly recognizable as well (just stop to think of the help of language), was bound incessantly to increase the wealth of motives for choosing. The birds in the fairy-tale chose only with the eye; think of the thousands of gateways man has for being pleasing to another and for offering his valuable wares, for looking into another and appraising values.

Yet this wealth really led nowhere to any great dispersal in humanity. It is clear that from time immemorial our lovers must always have chosen very differently in the sense that in one case greater preference was given to physical beauty and in another case to ethical or other spiritual qualities. But on the whole, this seems always to have become equalized to a great extent; you have the impression that essentially an ethical-æsthetic whole human being has always hitherto been bred by love-selection as the ideal. The universal idea of healthy vigour gives us a clue here. The saying about a healthy mind in a healthy body does not characterize the exception, and stupid beauty or Socrates with a powerful mind behind an ugly face the rule. In the sum-total of its strength, which in the end is achieving its purpose, mankind has ever had in itself the eternal Goethe, who looked through both eyes of humanity, the

physically beautiful and the spiritually great. The two things have happily kept on being crossed.

"Lovers' whims" too have played none too great a rôle in actual fact.

The splitting up of mankind into races in ancient times was bound to drive the ideals of physical beauty somewhat apart in different directions. A higher authority governed here, against which nothing has been able decisively to prevail to this day. You must also distinguish between races which have gradually come to a standstill in their æsthetic development, which have become petrified at a certain stage, ugly caricatures, and degenerated even, from races which have been ascending from earliest times, constantly becoming clarified æsthetically. But then you will be really astonished, when you look over the individual traits, by the large number of similar lines of development in all human appraisal of æsthetic values.

A certain logic of the rhythmical element, proceeding from any object you please, keeps forcing its way through, after all. This applies in exactly the same way to the active art of all peoples and all ages as well. It sounds nice to say that there are no absolute norms in universal art. But that will not hold water. As a matter of fact, a certain mathematics of harmonious relations, which is psychological mechanics at the same time, invariably breaks through all the coverings of time and caprice, be they never so changing. There are laws of style which persist in the depths, no matter what the infinite possibility of fashionable and individual metamorphoses may otherwise proteanly make out of things.

But if this applies to creative art, why should it not apply to taste in love as well, since everything comes out of the same brains? The various models of human races were endowed unequally by nature from the beginning, as far as harmony and style in the proportions of the naked body is concerned. The existing models strike you as experiments which have met with varying degrees of success. In one case, it was easier to help out afterwards through æsthetic sexual selection and in another case it was rendered incomparably more difficult. Nevertheless, you feel you can detect the gentle work of the same smoothing hand everywhere. Harmonization of a negro type naturally is something far different from that of a European, and so it happens that people who are not able to see into things rightly, fancy they always see only the more extreme differences. In reality, there is a tendency toward a thoroughbred type in the

most diverse races, certainly due to long sexual selection, and in all these thoroughbred types in turn there is a tendency visible, leading closer to the European, who in the rhythm of his naked forms represents the highest and purest thoroughbred model of mankind, turn and twist against that as you may. In this sense, there are negroes who, within certain limits of their originally given racial type, are truly magnificent fellows. Only, you must still be cautious in individual cases like that because of the possibility of races having been crossed. For it seems as if nature once more became more active in such mixtures of races and again produced stronger mutations with the aim of harmonizing the parts: the products of racial crossing, too, seem to become more beautiful throughout, in the sense of absolute progress toward the thoroughbred model of the human being. But this is a field of scientific investigation where nothing is clearly conclusive as yet.

Naturally, love-selection has now and again inclined toward grotesque exaggerations just as art has; but exactly like art, it never worked its way into mad chaos, but it exaggerated ornamentally, it exaggerated what was already ornamental, it carried style too far. You have a good example of this in the well-known, monstrous exaggeration of the female buttocks, most characteristically exhibited to you by the grotesque pictures of the so-called "Hottentot Venus." Among various tribes of African negroes, the wonderful noble line of the female posterior, one of the most marked, ornamental parts of the human body, becomes a crazy caricature, a kind of rearward paunch, as the result of the excessive development of its padding of fat. In certain regions, this is already inborn and extends to the boys as well, in other nearby regions it is entirely lacking. In earlier times it appears to have been very much more wide-spread; we even possess European carvings on ivory that point to it. Wherever it flourishes, it is still held to be an æsthetic fashionable ideal to-day. You have a strong impression that a fashion has been bred on the naked bodies of the girls by long, one-sided love-selection, the starting-point in the breeding brain in this case being just as much of a caricature as the exaggerated snouts and sexual parts of certain extravagant idols were in art. All the same, you still see immediately how this exaggeration proceeded from the impression of something ornamental, and did not invent at random.

Even more self-understood than the æsthetic is the ethical homogeneity of all human breeding through love. Certain preferences as

to character already leave so little room for doubt in the highest part of the animal kingdom, that it would be very hard to understand man still being able arbitrarily to shake the established order. Ethics too has its too iron law.

You can read in clear terms what individual love already sought and found in the way of character and disposition thousands of years ago in Homer; not a fundamental line there has changed to this day. But Homer already rests on many preceding millenniums; he is already the extract of a very ancient civilization. What is set down there in poetry was lived countless times and is still being lived to-day. Nothing can very well be more unambiguous about their ideals in this direction than all the love literature of civilized peoples. What love wanted was the beautiful being on the one hand and the good one on the other. It was always the idea of the good which an age and a people held aloft. The mighty ethical logic, however, made all these individual concepts at bottom similar. And thus did love in the end here too breed human beings toward a universal ideal, under all restrictions of time and place, of race and fashion. The good hero, the good heroine of all love stories, from the oldest one that has been handed down to us by tradition to the popular fiction of to-day, were always the true heroes of mankind's love, and ever brought infinite blessings of goodness into human evolution, despite all aberrations and resignations.

The individual element is still constantly on the increase in humanity as it strives upward to-day, and so it is with our individual selection in love as well. It is true that certain qualities continually spread out; what once existed only as individual variations becomes common property. Amorous selection itself works to this end. By its slow but consistent favouritism, it raises the general æsthetic and ethical level of humanity, so that what was once merely within the scope of the individual element already can actually belong to the average of the mass, when it finally has become fixed. But this process is in itself endless. There are always new problems growing up individually and these must be bred anew. And our age in particular urgently demands this with special emphasis.

Our increasingly thorough ethical education, as you know, is to-day gradually generating a certain dilemma between ethics and the healthiness of our civilized races.

Our fellow-feeling, which is more and more awaking, makes us

go to great efforts to salvage and rear sick children, so that as a result they reach sexual maturity and there is the possibility of their procreating anew and transmitting their defects by heredity. We preserve an army of inferior human elements, which are defective in health, and do so by all the means of our medical and social art. As the result of our wars, frequently there occurs the very reverse of natural selection, with survival of the weakest and the unfittest, as the vigorous élite of a nation is shot away in the field, while the cripples and weaklings are left over at home; for the present we simply breed this fatal situation still further with our sympathy, by seeking to keep all these debit values in the game to the best of our ability.

This problem certainly is already worth considering to-day. Naturally, we cannot on this account concede Mephistopheles the right to say that we ought to abolish our ethics and reverse evolution and develop backward to brutal natural selection with its forcible trampling down of all the weak and the sick. Only a fool could preach to us that at the peak of our civilization we ought to kill off all our weakly children according to the legendary custom of the old Spartans. The loss in moral respect for humanity and in the strength of sympathy would be a stake which would represent almost the entire winnings of our civilization. Nor may you under any circumstances overlook the fact that in our civilization there is always the possibility that by preserving a physically weak child or a sick person, values can be saved which would be spiritually irreplaceable for us. Would we want to miss consumptive Spinoza or Schiller in our intellectual life? All this quite apart from mistakes, one of which would absolutely have cost us the little Goethe, had Spartanism been consistently practised, for Goethe came into the world seemingly dead.

Instead of such nonsense, one will answer more sensibly, that the seeming trouble-maker, ethics, itself, gives us the means of regulating things. Ethics works against war, and therefore against that false selection resulting from war. By means of social progress, it seeks to make a clearer field for a more genuine competition of the forces in humanity. If it keeps the sick alive, it may also educate the mature human being to the ethical height where he will say to himself that he must voluntarily renounce procreating children which might inherit his malady, for the sake of humanity. But vigorous ethics will at the same time become a vital nerve of

progressing medical science, which actually does bring countless ailments to a standstill, which really does sometimes make a vigorous human being out of a sick child, which actually does continually gain ground all along the line against the inferior element, the element that lowers the quality of human material.

During such times of transition and dawning development, times when things are not yet clarified, individual amorous selection is bound to acquire a very special rôle, to a greater degree than usual.

Its task must then increasingly be constantly to force through and produce values of sound health, as pure as possible, in the game as it wavers backward and forward.

It must focus its eyes quite particularly on seeing to it that certain sources of harm to more specifically sanitary life remain unselected to the greatest possible extent in love's general selection in the direction of the beautiful and good. The poison of certain dispositions to diseases, with which our whole civilization still is increasingly infected through and through must be avoided by love-selection, at least as much as possible, and it must make this poison die out ideally, as it were, in the future.

I say, to the best of its ability. Naturally, in view of the unutterable complexity of human nature, there still are inherent here the hardest of conflicts, terrible acts of resignation, and possibilities of ever fresh mistakes and disturbances of the whole bright world of individual love-selection itself. In the sense of what we said before, all this may be softened in many cases by the fact that it is only the child which must be renounced in cases of sickness, the ideal child which only might have been, but which is not yet there and which must not be brought into the world, because it too would become a sick human being. In these cases, resignation must cast its widening shadow.

In any event, our love-selection must struggle to attain ever greater clarity on the subject of these threads in our fine human texture. In a new, modernized form, such ways of looking at things must again gradually become important for it as are indicated by the old ideas of pure descent, pure strains of blood running through many generations, an aristocracy which can be surveyed in extensive family trees, but which in many cases no longer cover the ground practically, in a medical sense, although a genuine and new medical sense could theoretically very well be imparted to these concepts to-day. Namely, a real tradition of good health; a

hygienic conservatism, guaranteed over many generations, the insurance of the family by means of a family tree which is poor in diseases, an hereditary aristocracy of carefully guarded, healthy blood. Despite the democratic current of our times, individual love-selection would again receive a historical nuance which would approximate a sort of aristocracy of health, a hygienic patent of nobility represented by the family tradition, which would have to be added to the dowry of the good and the beautiful.

A thinking medical man, Alfred Ploetz, many years ago pointed to such new paths of the future as these with far-sighted vision. Practical work in this direction is already being done by the deserving activities of the "Society for Race Hygiene." These are tremendous things which are opening up here; neither one generation nor several will bring them to pass. But we must already try to divine and encompass these things somehow. And it assuredly is one of the most wonderful dreams of our human love-life, whose twilight is still sufficient for dreaming, that in the end man's conscious thought will walk ever more surely on these dark waters of the original mystery of love. The knowing spirit of a coming age, for which all our work with its ideals as well as its acts of resignation would not have been in vain. . . .

It is a long road from the little bird in the Australian bush which put a red berry on its nuptial bower for adornment—to the establishment of a hygienic aristocracy in eugenic mankind.

How often has it been said that there is something which is more than all art, and that is to make a work of art out of life itself.

Love is the way.

Between the marble statues steps the miracle of the actual naked human body. You are only dreams, such as I could be. But one day I shall be like you. The spirit that created you is incessantly working on me as well. Your stone is worked with the sculptor's chisel. Love shapes me.

There is an old bit of folk-lore about the prenatal influence of "seeing things." If a pregnant woman sees a lion, her child is supposed to get the head of a lion. There are no scientific proofs for this fairy-tale. But our dreaming spirit has thought out the matter in this way: whether the mother, by sinking her personality deeply in the sight of glorious statues and pictures, might not be able to impart a breath of these ideal worlds to the budding fruit of her

womb, even to the extent of affecting the actual organic formation of its body.

A more beautiful, finer child, by "looking at" the sacred harmonies of art!

Once again, science, which negates the way of the fairy-tale, knows more than the fairy-tale itself. This form of "looking" has taken place and takes place every day. Every day, when love sets out to choose its ideal and surrender to it in flesh and blood. All warm, living human nakedness is at the same time an eternal "looking" at human art.

But still another strange thought suddenly interposes here. Out of the green dawn of paradise, where the king bird of paradise rocks on its bough and a pair of naked human beings walks on the mossy ground below, and kisses and embraces, filled with its ideals and its love, a mighty question resounds. You get a sound of it in the biblical legend of paradise as well. But the scientist must read it out of his Bible.

Why is man naked at all?

PART VIII

AND THEY KNEW THAT THEY WERE NAKED

Then fell Bestiality's dull barrier,
Humanity now trod the forehead's plane,
And Thought, the lofty stranger, Reason's carrier,
Leaped from the old, astonished brain

SCHILLER.

§ 1

Thou who comest from the skies,
All our pain and sorrow stilling. . . .
The Wanderer's Night-Song.

A QUIET library in a monastery. The light of the red hanging-lamp hovers in front of the deep, heavy vaulted arch as if in a cloud. At back, a winding staircase ascends, and its pot-bellied steps, awakened by the dim light, resemble the scaly rings of a fat dragon which has thrust its head through the ceiling. Through the high window's zigzag panes, a speck of snow and the flash of a star.

It still smells a bit of ghosts here, after ghosts that are dead and gone—smoked out. But the gold titles of the books in the cases have very bright eyes.

Books have eyes.

It frequently strikes me in such a solitary hour that a book is a higher organism than we are. A stage in evolution, which has already struggled upward and freed itself from man, surpassing him.

Take away these books, and what is man? A mass of small children, becoming savages again. An idiot without memory. Everything which man is, is sucked up in these books, and everything which man creates he does that it may live in this higher order, and live beyond his transitoriness.

And how powerfully the longing for a still monastery cell often grips us again to-day.

A red swinging-lamp and golden wine and these wise eyes of the millennium's books. There lies humanity, itself drawn off so very cleanly, like the cool vintages in a wine cellar. You are alone with it. Quiet all around, as if all fermenting and desire were resting for a spectral hour. Only when you proceed to drain the clarified wine of the past do you now and then knock against the barrel and produce a soft deep sound. Outdoors is the snow, in which every rude tone dies. And the stars, which also talk only when everything is very still. And a good, old-fashioned winding staircase up to the

bed-chamber . . . when you grow tired . . . when it gets late . . . when the times comes.

Do you know what lofty sense was always inherent in the concept of the cloister?

The idea of a huge digestive institution.

We hear so much about the food question to-day. But an uncannily deep significance lies in the question of digestion as well. Think of humanity, over which an entire epoch of civilization had trampled and passed on at its mad pace. Say the old Babylonian-Egyptian civilization. Or Greek civilization. Or Rome and Christ and the great migrations of peoples. What did the brain need to eat for? What it needed was an intermission of a number of centuries for digestion. Our last civilization was the one to which we tie the customary concept of the cloister. The human being in the cell, under the hanging-lamp, who does not act, but digests. Digests mentally. And for that very reason may he look well after himself physically. That is why a breath of trout and Rhine wine emanates from the monastery. You suspect that human beings had nervously eaten for a thousand years, like a person who is in a turmoil even at meal-time. Now they physically eat with calmness, because their minds are resting. And one day, when the stomach above and below is finally completely in working order again, action automatically wakes up, like a fundamentally healthy appetite. One day such a monk will sit down and paint the head of the Saviour over the door of his cell, in a manner which the highest bloom of art in antiquity could not have achieved. A canon in Frauenburg turns over the last leaf of his copy of Ptolemy, after he has finally completely digested its contents, and on the blank last page he draws a point, the sun, and a circle around it, the earth's orbit. A new view of life breaks forth from this point and circle.

Time has whirled on so fast since then. Our gigantic mental meals stick out of our mouths, as did the last chicken leg which Max and Moritz stole out of widow Bolte's pot. Where will our cloister be built?

Let us be in a cell, at least in spirit, during the last part of our conversation about love.

We still have to sample a series of vintages of human love.

Behind each barrel stands its vintage year.

This year is spring with its wild buds; it is the fragrance of grapes, intoxicating the senses. But it is also hail and blue light-

ning. Yet in the cloister's cell it is calm, it is clear wine. Raise the old goblet to the light . . . it no longer effervesces; it is clarified human gold.

There are ghostly barrels among them, uncanny black barrels from the vintage years of comets, when terrifying stars dragged their monstrous tails over the sky of humanity's soul. But all that is past, and the wine is clear. There are so many barrels. We cannot tap all of them. We can only sample the most remarkable of them, the really great vintages.

Mankind, you prodigious animal! What are all stars, ichthyosauri spiders and tapeworms compared to you?

You are the crown of everything. In light as in craziness.

It was not the fault of your vast imagination that the craft of love did not in the end become a regular fools' ship on this blue cosmic sea. But throughout all your thousands of years, a quiet masked steersman stood at the helm of this ship of folly, the mightiest and deepest magician of your imagination: your longing. And with it you kept on landing thousands and thousands of times in paradise.

Humanity, you golden wine, you extract of stars, you aroma of the stars, you somnambulist on the grey threads spun by the hoary old invisible spider, fate, let me tell the story about you to the end from your own show in paradise. . . .

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§ 2

Primal world-storm, thee I thank
That in hurling blocks and boulders
Thou didst make the granite bank
Where I lean my weary shoulders.

LENAU

As the red light of the swinging-lamp shines over the old ceiling, it seems heavy as a hand of stone that holds your world fast. And yet, that is exactly the right figure of speech.

This cell is a narrow cave; the window is the exit of the cave, in which you can barely see one last star twinkle. Even to-day, whenever you look at a human house from the viewpoint of its being purely a natural product, as you observe the structure of corals or the shell of a mussel, it invariably has this cave character. A very ancient heritage lies in it.

We encounter man as an actual cave animal in the very place where we for the first time note a breath of a higher culture coming into existence in the case of man. In the lovely wonderland of the Dordogne, in Atlantic France, where the little river Vezère flows—this sacred river Jordan of the oldest league of civilization. Where Merlin's magic hand once seems to have plunged everything into Sleeping Beauty's deep sleep, who knows how many thousands and thousands of years ago; so that they remained lying to this day like a great open chronicle that was never touched again. Where implements, weapons, objects of adornment and the colours of paints remained lying the whole of that long time since then, as if they had just been put down. Laid down by human beings, for whom we now invent names according to the scenes of their labour: Aurignacians, Solutrians, Magdalenians. Their permanent home was the cave. And a trait of this has remained in us to this day. Typical cave animals still live with us as invited and uninvited animal guests: the owl, the pigeon, the bat. The unmistakable model of the cave still lies in all our houses.

Deposits of chalk form on the bottom of the sea during im-

measurable periods of time. Coral animals and chalk algæ rear their chalk citadels in the form of reefs. Mussels pile up their chalk shells. The microscopically small shells of unicellular protozoans in ocean's pillar of water keep raining down incessantly to the bottom like a fine shower of chalk, and form a chalky ooze. Now the rock under the flood moves. The old earth becomes condensed, its crust sinks in, the water flows off into new chasms and here and there the former bottom of the sea appears as open, hilly land. Its chalk deposits are now solid chalk rock, about which the wind roars and rain splashes. The rain water gathers on the open surface. The movements of the earth's crust have ripped a crack in the old coral bottom. And now the drops of rain shoot on in there. And carbonic acid goes along with the little pearls of water. It chemically dissolves the chalk in the walls of the crack, enlarges the opening and makes a clearer path for the water. Centuries pass, and the fine fissure becomes a deep gap. The source which ate it out flows through it after it has broken a gateway through the chalky slope of the hill, which lets it see sunlight again and emerge in the green woods. Waters occasionally pour up from below through this gateway, when melting snow and cloudbursts in the distant mountains bury the low ground under swirling floods. At times this assumes enormous proportions. Then the whirling waters plunge with titanic force into the clefts of the chalk wall and make a grotto which yawns when the flood has passed away. Mysterious darkness reigns inside. Drops of water drip from the ceiling, and as each of them contains some chalk in solution and deposits this on dropping, spectral points grow from the top toward the bottom and from the bottom toward the top; stalagmites and stalactites, a phantastic forest of chalk in the darkness. The bear and the hyena one day discover the entrance and make themselves comfortable in the hollow of the cave. Countless blackish balls of bats loving darkness hang like fruit on the vegetation of stalactites.

But the hour of fulfilment strikes . . . and man, the creature of fulfilment, comes. The red flare of his hearth lights up the cave, so that the bats tumble down horrified, and the quaking hyenas flee from the burning branch. A flint arrow through the eye has settled the bear; its pelt now lies on the chalk floor as the first sofa cover. Animal pictures, true to nature, are scratched and painted on the walls with astonishing art: mammoths with crooked tusks, bisons, ibexes and wild horses. And naked figures move around the smoul-

dering fire, shapes of a being of the mammal type, with the hands of a monkey, but at the same time with walking feet, and walking upright in perfect equilibrium. As in the case of the gibbon and the orang-outang, there is no visible tail behind. But their skulls already have the magnificent arch of our nordic skulls of to-day, without the powerfully developed bunches over the eyes, and with beautifully developed chins. Perhaps when they first came into this region, the ancestors of the Magdalenians still found human beings in the valley of the Vezère with cruder skulls and without such chins; the Neanderthal men, a race which likewise had already attained a certain degree of culture. But these stone age human beings at the end of the Glacial Drift, such as they still are, have no knowledge of metals, none of agrictulture, none of domesticated animals. They no longer have the skulls of the Neanderthal man, and in this respect are decisively farther along toward the subsequent higher and civilized races.

And these beings are almost totally naked!

Male and female strictly differentiated according to the law of all higher animal evolution, with the sexual apparatus of the highest stage of mammals. But both of them naked.

The shadow of their outline falls like a phantom on the chalk wall: the silhouette is clear-cut from the neck down, without the wavering outline of covering fur or feathers as in the case of the wild bear or the cave pigeon. Measured by the pigeon, this human being stands here like a plucked creature. . . .

Naked man!

This little word "naked" is a magic open sesame of the fairy-tale. It throws open various doors, according to the mental sound I give it. I utter this word; and the association of ideas in "cold" appears. Unclothed, stripped in our northern climate, freezing. I give the word another sense, and it means art. Michelangelo's David, Praxiteles' naked Hermes arise. But a third significance swallows up all others. A hot breath blows from the word. For our higher civilized world it is an erotic word, the most powerful of them all because of its generality and yet with a plastic clearness of meaning.

All these meanings seem to run apart along widely separated lines. Yet the simple apparatus of association in our brain is a wonderfully reliable machine. Once upon a time, during a strange period in mankind's thinking, when the scholasticism of the Middle Ages

thought it could solve all the riddles of the universe with a certain formula, there lived a Spaniard, Raimundus Lullus, a Faust of sober, logical deduction, who thought he could master heaven and earth, children and heathen, and even get the better of the devil himself with such conclusions. He had constructed a philosophical "thinking machine." The idea itself was delicious enough. You slipped a question into the machine and made the wheels spin round. The words covering concepts in this machine then arranged themselves for any particular word, as in a kaleidoscope, and the answer appeared in black and white, like the figure on a cash register. The only laughable thing about the matter was the tiny scope of these few scholastic boxes of concepts, into which one was supposed to be immediately able to hitch every riddle of the universe. Had this good fellow Lullus' machine been big and rich as the universe, it would in truth have answered all the questions of the universe. For in its nature, the true universe, the cosmos, is a machine like that, where everything always comes out right.

But Lullus' crude stroke of genius shown in this attempt really did divine and touch something else: namely, the associative apparatus of our own brain. You cannot drop the least little word into the human brain without the mechanism beginning to turn and produce a series of other words under it, quite according to Lullus's method. And whoever is able to read the inwardness of things notices frequently enough that a secret game of question and answer is involved.

I throw in the word "naked," and the machine immediately plays the three characteristic words which make their appearance: cold, beautiful, love. Without being aided or abetted on my part, my brain smuggled a question mark behind the little word that was dropped in. And now it throws out three answers to me. If I know how to connect them, I have the great road to the solution, to the deep sense of my word.

Let man rise up before you once more at the peak of his animal evolution. Recall that we have only seen him ascend as a shadow rushing before and cast by man's own process of coming into existence, through all the æons of time from that Algonkian-Cambrian original strand of our knowledge on, and out of still earlier mists. In volvox-like cell associations of an animal kind, in gastræas and worms, first fishes and mud-fishes, salamanders and first reptiles, duckbills and marsupials, in the neighbourhood of Master Porcupine

and the gnome Tarsius. Until at last a monkeylike being and yet again one that evolved far past all living monkey forms abandoned the tree and touched the ground again; a being without animalistic canine fangs, with a colossal brain, with implements which it had itself created, in its hand. Once again look at him standing there, this human being at civilization's turning-point, exactly on the great divide, infinite animality sinking behind him in the blue to stellar nebulæ . . . and suddenly before him, just one little step of an inch over the divide, the fresh dewy new land of civilization wrapped in morning calm.

In this incomparable hour of early morning, on this day of the discovery of the universe, compared to which Columbus' morning at Guanahani melts away to a tiny idyl, this human being must physically have experienced something more, as at the same time the animal garb fell from him symbolically like a real coat. He must have become naked at that time. What played a part in that connection? Was it the last old breath of the primeval forest? Was it already the breeze of early morning out of that new land?

When, after infinite construction, things finally come to a climax of utmost dramatic intensity in Homer's poem, the helpful hand of his protective goddess likewise transfigures the person and the body of the hero: the rude beggar's garb melts away like mist and over his limbs flows heroic beauty radiant as anointing oil. In the epic of true world history, the helpful goddesses appear in mandrake forms, they appear as axes of the earth, volcanoes, glaciers, clouds of bacilli and kindred pretty things. But they are also called brain and longing, art and the force of civilization . . . and love. And so too, in a certain hour, without any theatrical pomp, but imperishably visible for all time to come, must they have transfigured their supreme terrestrial hero, and removed the covering from their masterpiece.

But who, more specifically, did this conjuring trick? The little bell of association so audibly sounds the tone of love to-day. Does some old deed of love again lie historically at the back of man's nakedness?

First, I shall place a single leaf of modern art and an old pigskin folio before you on the black monastery table.

The picture is by Fidus. You see the egg of the universe floating in green space. The hand of the great artist has ingeniously

opened it, and he makes the sacred lotus flower of life bloom forth in the hollow of the opened shell. Behind the flower, a large leaf of a plant rises up protectingly before the vulgar gaze like a wall. For it guards a lovely secret. Among the filaments in the lotus crown sits a lovely young human female. She holds a little child on her lap. The mystery, old as the hills and eternally young: human mother and human child. Her eyes are fixed on the infant, and her hands are pressed together, not as in longing prayer but in the overwhelming bliss of cosmic happiness fulfilled. It is there! Her whole young body rejoices. Here is the inconceivable gift from out of the eternally hidden! Whence? There is a radiance above her head, as if a sun were giving its benediction: the eternal creative force of nature. The light, which softly runs downward, flows around and flows through her like mighty, miraculous procreation.

This human mother is naked, except for the soft locks of her hair that roll from the top of her head and fall upon her shoulders. The infant's dear little head fills the sacred soil from which it sprung with the dark spot of its own hair.

In this picture, the expression of the natural, of the fruitfully creative element is wonderfully coupled with the supreme magic of human purity and innocence. This group has permitted itself to be seen just for a moment of light. Let the slightest shadow of an unclean thought approach, and the lotus leaves will fold up over it with defiant celerity, like the green feathers on a branch of mimosa. And there will only be an afterglow flaming out through the closed flower, a deep purple red growing ever deeper: the red of shame. And in the end, the bud will dive down entirely into the watery depth, to wash the shudder of the ignoble contact away in the sacred crystal flood.

Human nakedness lies in a picture such as that, like the treasure in the fairy-tale; unlocked for a divine moment and abruptly sinking out of sight at the slightest profane word. It rises up for only an instant into the streaming light, to receive the sacred blessing of procreation. It rises up for the infant bud to struggle loose from it. It unlocks its bared breast for the mouth of the pure infant. And it gives itself naked to the joyous prayer of surrender to the eternal enduring universe with its sidereal reaches, to the clean stars, which the distances in space, measured by trillions of miles, have freed from all dross. . . .

The old folio, which I placed alongside, dates from 1606. It is an old monastery specimen.

After zoology, like all natural science, had long lain sunk in the sleep of digestion, it woke up with emphasis in the sixteenth century. About the middle of the century, our Gesner at Zurich wrote his gigantic work on zoology, in weighty folios, with the industry of the polyhistorian, but also imbued with the spirit of a new and strengthened age. A little later, German extracts of this monumental work appeared, whose homely popular language is customarily quoted to-day as the genuine "Gesner," although different German editors had pushed in behind him and his elegant Latin text. Our folio volume is the "Animal Book," covering the quadrupeds, and in first line the mammals, translated into German by a second Swiss doctor of the times, "Herr Konrad Forer." The woodcuts are delicious, and so is the text. What people in those days looked upon as "animals" was in many respects a sorry world of buffoonery. God's cabinet of curiosities and likewise God's chamber of horrors. The animals come along like a ghostly procession out of Noah's ark. The ancient legends about satyrs (called "goat-men" here) and the German hobgoblins of the woods and the spooks of the "Hirselberg at Isenach" are still mixed in with rumours about the orang-outang. The unicorn, which never lived, trots joyously beside the aurochs, which is already extinct to-day. Albrecht Duerer draws the rhinoceros according to foreign tradition, in masterly style of decorative lines. But now, in the midst of this merry company of spectres, we find a very strange guest on page 158.

It is introduced as the "monkey-wolf or bear-wolf." And then the folio says further: "This animal was brought to Augsburg and exhibited in the year 1551, causing a great sensation. It has fingers like a human being on its feet, and when you point at it, it turns its posterior to you. . . . It has a joyous disposition, particularly toward the women folks, to whom it shows its joy very much."

One look at the picture identifies this curious customer despite the intervening three hundred years. It is the big monkey of the Congo which we call the mandrill.

Where the mighty equatorial stream, which for our days has taken the place of the old legendary Nile in romance, traverses the dark continent in a daring curve, there in the primeval jungle did nature create her masterpiece of grotesque atrocity in the monkey type. The defenceless human girl on a solitary path encounters a

huge, bull-necked, short-legged goblin plunging toward her; it has a monstrously large head and gnashes its teeth, and it has Herculean strength in its arms, which could tackle a panther. Hairiness and nakedness alternate on the body of this woodland imp in a way that intensifies the impression of gnomelike atrocity to the peak of the possible.

The bulk of its body is covered by a genuine, monkeylike, hairy coat, mostly greenish-black, somewhat lighter on the belly only and the pointed beard on its chin, which is lemon-coloured and makes a grotesque contrast to the shock of hair that stands up stiffly on its head. But its face and the opposite pole, the posterior and sexual region, show bare naked skin. And on these naked parts a mad brush seems to have painted thick daubs of the most glaring, impressionistic colour effects. The nose is a blood-red that shrieks, looking like a bar of sealing wax fastened there. At right and left, the rolls of the cheeks are puffed out like wings, and on each of them there is a daub of cobalt blue, a thick, fatty daub that makes you feel like scratching off the oil paint. The same palette was wielded against the goblin's body behind in a somewhat more blending fashion; sexual part and anus were done in pure sealing-wax red, and the thick ridges of the posterior were dipped in a mixture of red and sky-blue.

In reality, this is no artificial painting: the colours are "grown fast" on the naked skin. But the brain of the gnome behind these crooked Satan's eyes that burn with hidden fire knows all about it. It knows all about both colour schemes, the colouring behind and the colouring in front. And in a very particular train of thought, it manifestly places a higher value on the colour behind than the colour in front. Quite rightly did our old animal lover of the cloister's folio observe that when it wants to please a female, it comes along backwards and displays the whole colour scale of this part of the body as the decisive factor. In this connection, be it noted, it is an old original Darwinian as far as practice goes; for the difference between monkey maiden and human maiden fades away entirely for it. When it is caught by the human animal for exhibition purposes and is lodged in a cage, and a human female draws near, it behaves according to its old custom. A young mandrill, which saw itself in a mirror, pondered for a while what it was. Then a great light seemed to dawn on him; whether it might not be a second monkey and possibly a female at that: and suddenly the

observer saw it turn, and turn the uncanny spectrum of its rear to the image in the mirror.

In so doing, it knows nothing of what we call shame or modesty. Its thoughts of love aim at the whole matter at once. As soon as the first space-conquering organ of its distance love, the eye, has comprehended the kindred being of the other sex, the other half of the love-individual which it lacks, everything urges it along the straight road of natural longing for sexual love which seeks to reduce the separating distance to a minimum. Just as little does the naked element of its body produce any shame in it. On the contrary, a direct connection seems to exist between the swift line of its sexual wishes and its body's nudities.

You will recall that in primeval days, for good and sufficient reasons of utility in the formation of higher animals, the organs of distance love and mixed love essentially got to diametrically opposite poles of the body, to the two ends of the worm's original tube. Eyes, ears, nose, the great stations of the senses in front, at the head; and conversely, the openings of the sexual apparatus as far behind as possible. Now it is at these two places that our gnome of the forest has no hair and is denuded—naked. But in both places this nakedness is glaringly coated with screaming colours; here nose and cheeks, and there, the confines of the realm of mixed love. With both, but chiefly with the rearward face of its love, does the monkey grin at its better female half of love, expressly rejoicing in nakedness and its colours. There is an open confession, a language of love for the eye of the female in this behaviour. Customarily, both sexes run and climb with their sensory apparatus, above all the eyes, on ahead. They see each other that way. The first love-letter flies over from the sealing-wax red nose and the grimacing cobalt blue cheeks: a general "Love me!" Now comes the about face, and the second letter is sent on equally gay-coloured stationery, with the intensification of the message which is absolutely not to be misunderstood.

What an infinite distance there is between the two pictures of the human female in the lotus flower of tender civilization . . . and the gaily coloured gnome of the woods in its Congo trees.

Particularly for the æsthetically and erotically finer human being, the sight of a monkey cage has been their most powerful antagonist for as long as ideas of man's origin, reminiscent of Darwin, have existed in the world. This open language of love expressed by naked,

misshapen, swollen posteriors, challenging attention with the screaming colours of a fool's cap, makes naïve people laugh idiotically; for thinking people there is something ghastly about it at first. Man is supposed to extend down into this world! At such a moment, one is apt to forget to what heights of grotesque monstrosity the love of the terrestrial animal, man, has mounted and lost its way in different peoples, ages and individuals. Involuntarily, one always measures things according to an ideal picture, such as symbolically applies to that lovely nymph of the lotus flower. That . . . and that is the case. And therefore?

But the spider of fate spins its web. And the spider of thought spins after fate's model. Nobody but God can prevail against God; that must be said over and over again. Thoughts can be overcome only by still deeper thoughts. A most mysterious thread starts at this point and is spun on.

Why is man naked? Not as a paradisian, but as a mammal?

You surely will not contest the fact that the little nymph of the lotus blossom, in her sacred transfiguration of motherhood's purity, is a mammal.

But the mammal was pledged and committed to thick, warm, hairy skin, to fur, in the hour of its origin.

It arose in far-off days, at the beginning of the Middle Ages of the earth's history. The carboniferous period was at an end, with its unspeakably luxurious swampy forests of cryptogamian vegetation, which still swam in an incessantly dripping covering of extreme atmospheric moisture, probably heated by the air's greater carbonic acid content, as in a colossal greenhouse. Arrhenius set up the ingenious theory that an epoch of such undoubted, intensified vegetation in connection with the enormous disintegration of mountain ranges must gradually reduce the temperature of the climate as a result of the extraordinary consumption of the carbonic acid in the air, and that in the end it must bring about an epoch of noticeably greater cold. In any event, the carboniferous period (in very similar fashion as was the universal tropical glory of the Tertiary very much later) was followed by a noticeable change of climate, which modern geology calls the "permian ice-age" (in contrast to the later diluvial period of mammoths and cave-men). Locally and temporarily, excellent adaptations to cold already appeared in animals during this permian glacial period. An adaptation of this kind was

shown by a certain group of small saurians (land reptiles), which must have had a particularly powerful local interest in switching over to the development of a permanent hairy covering.

I told you certain details about this before. It is quite possible that climbing and leaping saurians had first acquired a permanent internal system of heating by means of the blood, as a partly incidental matter; and that this now became a direct chance for survival when climatic temperature dropped. And to promote this in such a climate the hairy fur of the body's outer surface developed (according to sound theory, by the transformation of the skin's old organs of touch into new protective organs). It was just as if those having an interest in heat had reconstructed the old general terrestrial protective cap of the envelope having a greater density of carbonic acid and water vapour into a private individual armour of temperature, when the heavens grew balder and colder. As was said, only part of the saurians took this road, the road to the hairy animal which at the same time became the road to the mammal. Elsewhere, there was obviously not as much occasion to take it. The climate, also, very generally became better. The genuine reptiles which were not permanently warm and not furred even experienced their greatest period after this turning-point. And only much later, at the end of the cretaceous period, did the actual age of mammals, when they outstripped all other animals, dawn. But at this time they brought along their fur, along with their other special attributes. Not for nothing had the earth bestirred itself to produce fur; it was and remained the great external characteristic of the mammal for millions of years.

Run your eyes over the ark of the earth, where it still fosters its great, highest animal races undisturbed. The musk ox in its polar wastes, where our human technology freezes and the last strip of birch bark is buried under snow storms, as well as the lion under the fierce equatorial sun, the bat in the breeze of twilight and the velvety black mole in the dark ground, the red squirrel, climbing in green trees and the wild horse trotting over the flowery steppe, the jerboa in the yellow sands of the desert, and the marmot taking its winter nap under its white blanket of Alpine snow, and the beaver in the swamp; all of them are furred.

And the exceptions are very clearly delineated.

A few ancient groups of small mammals still wear a kind of original garb, a petrified reptilian style of clothes, at the expense of furry

parts. The land duckbill, the hedgehog and the porcupine wear spines, intermixed with hairs, and these spines are themselves undoubtedly transformed hairy formations. The pangolin has horny scales like a pine cone; the armadilloes have chain-armour, like that of the wood-louse, for rolling up into a ball; but still, the hair continues to show under it, as if only half suffocated. In the case of the giant sloth grypotherium, of which perfect pieces of fur were found in a cave in Patagonia, the armour had withdrawn completely into the skin, under the red woolly fur that grew luxuriously over it again. On the whole, you here have special protective adaptations which are not particularly favourable to the mobility of the mammals; adaptations which went back to the methods of the saurians which were scaled or armoured like crocodiles and turtles, methods which had been resolutely abandoned after all; reactionary special tendencies, which neither led to anything nor made their appearance elsewhere than temporarily among mammals which otherwise were ancient, too, and had remained standing still at a very low level.

Further, a few picked water splashers are naked: the fat, violet-red hippopotamus, the old wrinkled rhinoceros and that wise brahmin, the elephant. In these cases, it was undoubtedly the bathing habit and perhaps even more the practice of wallowing in the mud that scared away the hair. That there is no inward necessity for nakedness in the picture of these giants is proved by the woolly red mammoths and the brown and white checked rhinoceroses of the diluvial age, whose carcasses are still preserved in Siberian ice to-day.

But the third group of exceptions among mammals fully and emphatically teaches us that water actually does put a ban on hair: the stark-naked sea mammal as represented by the dolphin and the whale, which in individual cases (the white whale and narwhal) have not got a last little stitch of hair left on their bodies. Here the adaptation is perfectly obvious; in fact, one of these whales is a veritable masterpiece of logical adaptation in every respect.

In these cases of nakedness, you can clearly see that certain peculiarities of the skin afford compensation for the missing fur that would otherwise protect the warmth of the body: in the case of those land giants of the marshes, the skin has become thick like armour, and the whale, in addition, has such a large layer of fat underneath the skin that it can salvage its interior heating in arctic

water like a bird wrapped up in eider-down. There are even indications that the ancestors of the whales occasionally wore something like the armour of armadilloes.

Among bats, the surfaces of the flying membranes are frequently naked, which you can readily understand from their purpose—as little weight as possible, with utmost delicacy of touch to the skin. The bodies of these enthusiasts for night life remain covered with fur throughout. In a state of rest, the flying skin wrapped around the body can serve as protection, and so one bat variety in the Sunda Islands has actually become stark naked, all over its body; but only one variety.

Lastly, there is an African rodent, the heterocephalus, which is almost naked: it burrows in the ground in mole fashion, and in pursuit of its favourite occupation, it may have suited it best to dive in wearing only skin tights instead of a thick fur.

But you will note that all of these precedents of mammalian nakedness absolutely fail to fit the enigmatical terrestrial monster, man. Man never burrowed in loose sand nor did he employ batlike membranes grown fast to him as means of locomotion. He is not inside a hedgehog's suit of clothes, nor sporting an armadillo's armour. It is true that a rare disease, which occasionally is hereditary in families, makes its appearance in man; it is called the fish-scale or porcupine disease in the vernacular, alias ichthyosis. In this disease, the epidermis becomes dry and horny, developing scale-like formations, and this increases in extreme cases to thick spines sprouting out on the whole body, metamorphosing the living human being into "Hans, my hedgehog" of Grimm's fairy-tale. This is a hint as to all that might develop out of good old human skin. But the hedgehog in man, if it actually was close to our ancestral line as previously narrated, lies millions of years back of us, and it is quite sure that armadilloes and hedgehogs do not stand once more between creatures having a close similarity to the mandrill and our little lady of the lotus flower. And as for our having first bobbed up out of the water in this region, that is even less the case.

On the other hand, it is perfectly obvious that in a not too distant time of animality, we ourselves were once genuinely furred, and that practically our entire bodies were hairy.

When you bud in genuine mammalian fashion in your natural lotus flower envelope, the womb, along about the fifth month your entire body in the purple depth seems to "remember" something in

this respect as well. Its skin suddenly sprouts hairs, like an asparagus bed that shoots up. At first this hair is fine down, only slightly coloured. It sprouts quite normally as eyelashes, eyebrows and hair of the head, as if it wanted to become life's permanent hair, as it exists on our heads despite our nakedness. But soon it seems as if the sprouting of hair at this one place had merely given the signal to go ahead all along the line. Irresistibly, like a young field of grain, it grows out over the face, breast, belly, back and limbs. Its growth becomes particularly luxuriant, on the face and further at a second place which, from the standpoint of human nakedness, is really the most improbable place of all; the triangle over the sacrum, above the notch at the end of the back, where the hairy tail sticks out for life in the majority of mammals. In your case, as a nascent human being, a regular little hairy tail rises out of the fur behind there, having the characteristic spiral arrangement of hairs as generally known in the tufts of hair on animals' tails. In all other respects this is a regulation "fur," not hairs sprouting in random confusion, but neatly and regularly arranged to form eddies of hair and waving fields of hair, as in the case of any cat or any rabbit, down the upper arm, up the lower arm, in two lines along the back toward the centre, at the belly toward the navel, and so forth.

But this young crop sowed by memory begins to shrivel away just as mysteriously of its own accord before ever the first light of day has struck it. The more mature, the more vigorous you are at birth, the less of this hairy original garb of your first pilgrimage through life do you bring into the world. Your little fur reached its peak about the seventh month. Then it increasingly declined. Frequently, the long hair on the shoulders maintains itself the longest. The forehead also habitually keeps conspicuously much for a long while. The falling out of this hair varies according to the individual and the race. It is reported to be very tenacious in the case of Australian children. But the rule now is that there is an end of it. You are "there"!

Now a highly mysterious restoration of hair sets in.

On the stubble of the dark field that perished, the first crop seems to begin to sprout once more in the same sequence. Again the first asparagus to sprout consists of long eyebrows, eyelashes and hair on the head. But suddenly there is a strange innovation: this time, the rest fails to come along; in the free light of terrestrial day all the rest of the body now remains without long, coarsely visible fur

and from now on it contrasts sharply as "naked" against these eyelashes, eyebrows, and, above all, the thick hair of the head.

From now on, that is to say, for a certain number of years. For the chain of these hairy mysteries is not at an end yet. Years pass. Then, whether male or female, you become mature for love. And suddenly it seems as if a belated tendency appeared in the great bed of your body's naked parts, to bestir itself and restore the whole original fur. In maiden as well as youth; under the arm-pits and over the genitals. Who does not recall childish distress and childish anxiety on the appearance of this phenomenon? How many a poor human soul, lacking friendly smiling instruction (as so often) had to taste the full fright of believing that some uncanny animal nature was conquering them, beginning at this place of greatest concealment, and would in the end reduce them to humiliating deformity and exclude them from human society.

When in addition the beard made its appearance on the young man, that no longer seemed thought-provoking according to our usage; on the contrary, it was hailed with the feeling that it was a necessary supplement to manhood finally achieved. But the fright over the other hair gradually disappeared, for as a matter of fact the flood did not mount any higher after a brief start. Those few captured spots were all there was to it: arm-pits, and private parts, and in the case of the male, the lower part of the face. The rest remained naked. And only in the male did a somewhat stronger tendency to hairiness manifest itself on chest, abdomen and limbs as the case might be and varying greatly in individual cases.

And there was no further united furry offensive for the remainder of life. And yet, how the boundary between furred man and naked man still vacillates, even in the born and the mature, full-grown human being, is very prettily illustrated by the occasional appearance of real, permanent abnormalities. One man among hundreds of thousands will suddenly appear, having a big rosette of thick hair over the notch in his back, as if Nature had exchanged the two sides of the body. And something actually is exchanged in this case, though not spacially, only in point of time; something permanently slipped into life in the open which really belonged only to the lotus stadium in the mother blossom; that little hairy tail of the embryo. Another time, "human poodles" bob up as freaks in sideshows; the hair of the head has grown down over the whole forehead and the hair on the cheeks has spread over and captured all

the rest of the face, and the crowd marvels at the monstrous miracle. But here, as well, nothing has happened save that the embryonic force that had already grown fur on the faces of all of us once, has persisted permanently, for an entire human life. We frequently meet with starts in this direction among us. If you have eyebrows grown together, something of this super-power has touched you with a very soft hand, and at the same time with a breath out of the æons of humanity's cosmic history, extending from the hairy mammal to naked man.

For all these signs and wonders can have but one sensible meaning, which can be summed up as follows: once upon a time we were covered with hair like every other furred mammal. We comprehend perfectly clearly that the traditional shaping of our body in the womb, working similarly to a recollection being aroused, is still playing with the old formation, still sounding them associatively at certain stages exactly as somewhat earlier it still plays with fish gills, finny feet and a lizard's tail in our embryo. But this spirit cannot make it work any more. Suddenly, associatively, it must knock at the door of a second, subsequent sequence of generations which turned aside from the old furred principle stubbornly, permanently, finally. Their goal was naked man. And they still achieve it in every one of us to-day, who is normal. But how could that come about? What "made man naked" in the evolutionary sense, subsequently, after he already possessed the mammal's genuine furry covering of the body?

§ 3

It happened in the eighteenth century. An original picture of mankind, which for one and a half thousand years had been as the dear breath of their own native soil, was lost to men. The old supernatural picture of paradise. But it seemed as if that very age received the gift of a new and more beautiful picture, exhaling new truth. We already spoke once about the perpetual metamorphoses of the conception of paradise for our modern knowledge. At that time, however, the new idea became attached at first to purely geographical pictures.

Do you recall the moment when Columbus lay before Guanahani? "Land!" his men cried. I have always believed that in the upper story of things, where our words are only catchwords of a still higher language, an entire scale of other good things lay in that cry. New land of the intellectual world. Land of a new era. Perhaps simply "truth." New truths. A new earth. New human beings. Magellan followed Columbus. And Cook and Forster followed Magellan. Coral islands rose up out of the blue sea before the eyes of civilization. The eternal greening and blooming of tropical vegetation lay over all. And beautiful naked human beings lived in concrete reality's true Gardens of Eden. The dream for the first time came up like blue dawn over this sea and these islands, that original man was not a fallen angel, but a spoiled child of the sun, whose daily bread-fruit dropped into his mouth and who needed no clothes and no fur, because the zenith sun of the equator perpetually poured its veil of rays around him.

From the first honeymoon weeks of this dream, at least one idea has stubbornly persisted to our soberest of days; the idea that man originated in the tropics.

When the right hour of progress struck, Rousseau's ideal natural man grew up into Darwin's animal man, only slowly refined into the human being. His closest living relatives, even though undoubtedly not direct ancestors, were the orang-outang, the gibbon, the gorilla and the chimpanzee. As destiny would have it, all four monkeys of our mundane epoch that most resembled man were inhabitants of

the tropics. The monkey tribe generally (with a few exceptions in Thibet, Cashmere and Japan) needs warm sunshine. And so the most obvious thing to do was to fetch man as well out of the tropical zone, say out of the interior of Africa or the Sunda Islands. And then the traveller saw the negroes or Dyaks still running around so nicely stark-naked, seemingly without any worry about protective fur, the assertion that naked man was a really and truly original adaptation to the tropics seemed nothing if not plausible. It seemed obvious that man had got rid of his animal hair, because he did not need it in the eternal sun. Afterwards, when racial migrations carried him into colder zones, that was not so good; but inventive technology already helped out in that case: he wrapped himself in artificial fur, in clothing.

But what seems plausible at first and persists stubbornly because of its simplicity is by no means always true. The orang-outang, packed up in its fiery red hair like a shaggy cocoa-nut, is likewise a tropical animal, and has its fur covering despite that fact. And the lion has it, and so has the giraffe, and the gnu and the water-buck. And the hippopotamus has not got it, not because it does not need it in the equatorial heat, but because it swims in the water. You must go to the zoological garden and look at the ant-eater or the sloth, literally lost in their dense forest of hair, and then say to yourself that the Bakairi Indian of this same Brazilian tropical jungle where they are at home is the nakedest human being on earth. If the heat of the sun did not play lady's maid and help undress them in the one case, why then in the other case?

Any one who really knows the tropics knows that a hairy covering actually does offer great advantages in the land of the sun. It softens the contrast between the burning heat of the day and the coolness of night that comes on abruptly and can make a naked negro howl and his teeth chatter. It affords protection against the terrible conflagration of day. It is armour against the plague of flies. It is not without reason that the "fashion" of wearing clothes is gaining ground among the naked with the coming of the European, in regions where the attacks of these animal blood suckers are most violent; the speculative enterprise of canny pants manufacturers does not accomplish this alone, nor the bashfulness recommended by the missionary: the artificial coat actually does fill a want there. Conversely, one must not imagine the warmth resulting from the

thick hair on the body to be too great, either. A monkey in our climate is sometimes decidedly happy when it can pull on a sweater. An animal like the mammoth, which possessed an enormously thick skin from the beginning, was extremely glad to use its woolly fur up north, as a protective sweater pulled over this skin. On a thinner foundation, this fur alone would not have served the mammoth's needs so adequately.

When these arguments drummed themselves into that splendid observer of nature, Wallace, many years ago while he was sojourning in the tropics, he took them very much to heart and could find no other way out of the dilemma than this, that a Guiding Intelligence of the universe had at a certain turning-point relieved man of his monkey fur, so that he would become a "human being." But that satisfies me just as little as if a doctor were to tell me that his patient had died on the day set for him, as per fate's decree. I would like to know what the disease was. I too believe that man's cosmic destiny wanted him to become naked. But I want to see the logical road of this destiny. Only when I see this logic, with all the links forming the chain, am I struck by a really unified destiny in the universe. As old Fechner so well said: the sole argument in favour of "God" is the logic of events which everywhere holds good, and the sole telling argument against "God" would be the existence of a supernatural "miracle."

Darwin grasped the problem in this correct sense, when in place of the vague general concept of an Intelligence directing things from the outside, which wanted a human being and needed nakedness for this purpose, he attempted to introduce something far more concrete: namely, a specific selective activity in the brain of original man himself, for this case as well.

Did not man in the final analysis make himself naked on the basis of very definite stirrings in his former mental life? Did he not make himself naked by that wonderful way of love-selection which the fairy-tale about the birds of paradise indicated to us . . . love-selection, which in the end breeds a wish, an ideal, an urge of the brain on the body, and embodies them in flesh and blood? And more specifically, æsthetic, amorous selection!

You may still harbour certain doubts about the possibility of actual æsthetic sexual selection in the case of the bird; but this scepticism can no longer exist on principle in the case of original

man, a being who already possessed a human brain. In any event you must admit in principle that this human could already select æsthetically.

You will do well, to be sure, to picture this æsthetic love-selection in original man to yourself as still being as instinctive as possible, as much a matter of compulsion as possible. Tailor our earlier train of thoughts once more in this sense to fit man who has just become a human being.

I told you that as far as we can follow it, a tendency toward harmonization is coming up through all cosmic evolution. In the last analysis, it is a fundamental law of all cosmic processes of coming into being, that the harmonious element has one chance more than the unharmonious element. In the chaotic state of coming into existence, it mints the first "duration," the first genuine "being" persisting over longer spaces of time. And this existence it in turn incessantly intensifies to a still more harmonious state. And so, this simple little law was already a veritable Demiurgos, making a cosmos out of chaos; or let us be somewhat more precise and say: whose simple existence in the fundamental rules and regulations of the universe made the seeming chaos from the beginning be a germ, an egg, an original cell of a harmonious cosmos that was coming into being.

We see that this principle in the universe, which is constantly being hammered home in everything, gains creative force in the organic world as well. Just as it constructed systems of stars and solar systems in the universe, which have maintained themselves in secure equilibrium through æons of time (a prerequisite for the whole first possibility of the development of organic life), so too it makes good in the countless adaptations of forms of life to the conditions existing on their planets and to one another. Constantly increasing the degrees of comparison and always preserving the fittest, it grows the mighty genealogical tree of life from the first original cells to the highest animal.

But this rôle clearly does not yet completely exhaust the principle. Side by side with this (probably already in the case of crystals, but certainly in the realm of the animate) works that more immediate tendency which we mentioned, that directive force or organic formative force (call it what you please), working more directly toward rhythmical things expressed in forms, colours and other manifestations; to what extent this latter may in the end

subordinate itself to the former remains dark; in any event, at first it appears independently and seeks its own road.

Then in the highest brain (let us limit ourselves now to that of man, which suffices for our case) it seems as if both principles somehow underwent a process of higher spiritualization. The universal harmonizing principle of organic adaptation becomes the intellect, which is conscious of purpose, and takes the helm into its own hands for offence and defence by adaptation. On the other hand, that direct rhythmical formative tendency in matter likewise celebrates a sort of spiritual revolution, a spiritual resurrection in the form of a direct reaction of the brain toward the æsthetic, the rhythmic; which feels this rhythmical element, desires it and, all other things being equal, invariably chooses it as soon as rhythmical-harmonious and unharmonious material are offered for choice mixed together.

The principle of things can no doubt be expressed in this way or some similar way, even though this does not entirely explain their innermost nature.

At any rate, in the end you get this "rhythmical reaction" unambiguously in man.

Just as you observe a singular, definitely given and fixed faculty of geotropism in growing, living plants for adjusting their parts exactly to gravity, causing them to bore their roots down perpendicularly to the earth's centre of gravity and, exactly the reverse, shooting their stems upward perpendicularly (negatively to the earth's centre of gravity), so too I should like to call this instinctively compulsory reaction of the brain to certain alternations of colour, certain sequences of sounds and so on, in which essentially rhythmical stimuli play a rôle, a sort of "tropism"—rhythmotropism, if I can get by with the term.

Its highest spiritualized flower is our human art, creating directly and anew in this direction.

Look at the cloister's old carved door. The fact that it makes a hole in the wall, through which this part of a human cave, this room, becomes habitable at all and can be entered, belongs in a practical field, which in first line has nothing to do as yet with this rhythmic instinct. And the same thing holds good for the fact that it forms a protective wall which can be closed against draughts and unbidden guests. But the fact that it has this form as a whole,

that it is not an exact square but has the shape of a longish rectangle corresponding, mathematically speaking, to the so-called harmonious proportions of the "golden section," that, to be sure, is due to your human rhythmotropism, to which this particular relation of lines appears harmoniously the most agreeable. And the same cause explains the fact that the old wood in this door has been worked up into beautiful ornaments; a matter which truly is totally immaterial for mere purposes of opening and closing. And that too is the only creative reason why there are a couple of gay-coloured panes of glass in the venerable window, instead of the whole window being just as transparently white as ever possible for the sake of mere illumination.

Of course, where this one-sided rhythmic principle goes so far as directly to threaten practical considerations of life, in other words, to the point where it would conjure up more general dissonances of a character dangerous to life, it must take a back seat; it is eradicated by the still higher law of harmony in the equilibrium of life and adaptation. If I wanted to overdo the ornamentation of that wooden door to such an extent, that in the end the cold wind would come whistling in or its whole purpose of being closed would become illusory, or if I made all of the windows so gay of colour that no man could any longer read a book in here for sheer twilight, I would simply be coming into conflict with larger harmonies of my existence and I would have to circumcise the purely æsthetic instinct for their sake.

But on the other hand, rhythmotropism does prove effective and must stand the test in sexual selection. The way it becomes active here (by giving preference to æsthetically stimulating, living formations, by procreation and heredity) is somewhat different; but in the end an active goal is to be attained as well.

Now try to get at the evolutionary problem of nakedness by means of this rhythmotropism.

First you must again think your way courageously through something rather dirty, which I will not deny. Our gnome of the woods, the mandrill, has something unmistakably "gay" about it in the bird of paradise sense. Namely, cheeks and counter-cheeks. I give you my word for it; there is absolutely no difference in principle between these ominous fireworks of Papa Mandrill's and the glorious plumed rockets of the male bird of paradise, which our

human females, with thought-provoking rhythmotropism, continue to plant in huge quantities on their fashionable Paris hats. A main part of its magnificence of colour is consistently concentrated rearward in the bird as well. Admired by each and every one of us, the peacock spreads its tail and thereby compels attention in the most unambiguous fashion to the identical counter-pole over which the monkey's red Aurora Borealis shines in the vicinity of the postulates for mixed love.

As regards its brain, this monkey is high above the bird, and if you want to admit the existence of genuine rhythmotropic love-selection in the case of the bird of paradise, there is no visible reason why the monkey too should not have acquired its rearward spectrum by the identically same, half-spiritualized method as the bird. Characteristically enough, in the case of the mandrill at least, it is missing in the female monkey, the young animal likewise lacks it and in the male it bursts out only during love-time. Love alone is the prism which makes this rainbow when love's hour strikes.

Here, too, as in the case of the birds of paradise, there is no doubt about the beauty of these colours as such to our human eyes. No matter how shocked you may be by this riot of colours being at the South Pole and by the mandrill's uncanny manners in showing off specifically with this south side, in any case the red and the blue remain "beautiful." It is significant that people who take such delight in colours as do the Japanese have taken up the vivid red of such a monkey into their art, as a fixed ornament. They have a monkey of the genus Macacus in their land, which has the blood-red face of an old toper; it is likewise one of the few monkeys which can survive the snows of winter in the mountains without any trouble. Sporting this alcoholic rose, it has become the favourite monkey of countless Japanese pictures from time immemorial.

The most interesting thing about it is that this opulent display of colours by a gnome of the woods like that, belonging to the four-handed race of mammals, could only be achieved on naked hairless soil.

There is a profound difference between the hair of the mammal and the bird's feather in this respect. The feather, which evolved directly out of the lizard's scale, has kept the scale's full power of producing magnificent colours. The most vividly coloured lizard

cannot hold a candle to a parrot. But purely for colour effects, hair signified a step backward, a sort of overcast sky. It is true that fur also developed colours and colour contrasts, patterns and rhythm. Look at the zebra or the giraffe or the tiger and the jaguar. There is a whole colour scale among the monkeys, running from the olive-green of the long-tailed monkey's back to the luminous black and white of the magnificent guereza which does gymnastics on its Abyssinian juniper-trees that are high as pines, letting its waving hair hang down in veritable horses' tails. But there is no help for it; there is a something like putting a damper on about all fur; something dirty, something thickish, something that tones down, seems woven into it. Hold a dull red furred animal like our squirrel beside the mandrill's florid red nose, and you get the whole contrast. After all, only the old foundation denuded again of fur, the naked skin, makes it possible for the pure colours of the spectrum to burst out in genuine reptilian birdlike fashion.

And so for love to bring out such very impertinent, magnificent colours here at the same time signified and had to signify breeding the utmost possible nakedness. It was already inherent in the circumstances of the case, that the two parts of the monkey's body which were most important for exciting love could be denuded the most easily. When I look at my friend's little white terrier, which so often accompanies me on walks through my native pine woods, two points stand out conspicuously as free from hair: its perpetually moist blackberry nose and the rosy little circle beneath the little bobbed tail. From these two places which were already naturally denuded, the mandrill's nakedness radiated in circles, from the time when such nakedness appeared erotically desirable as the necessary canvas for an exciting play of colours.

Darwin asked himself one day whether this denuding process might not have spread in the monkeylike being which became "man" to such an extent that as a result of continued individual amorous selection these rings of nakedness extending from the two poles of the body finally came together? And that one fine day, therefore, the entire body, with slight exceptions, stood there naked, the result, as it were, of the nose having slid over one-half of the body and the rearward nudity having similarly slipped over the other half.

As far as the ultimate result went, this process must have taken an insignificantly different turn from the case of the bird of para-

dise. In the case of the human being to-day, the female as well as the male is naked; in fact, strictly speaking, the female is somewhat more naked than the male. Obviously no obstacle of protective adaptation existed to nakedness being transmitted by heredity to the females as well as the male. And there is also no strict reason apparent for assuming that the females invariably favoured only the most highly coloured, and therefore the nakedest males after bird of paradise fashion. Mutual selection and breeding of this characteristic may very well have taken place. You can behold a very conspicuous variety of monkey in our zoological gardens, which will make you shudder somewhat—the Rhesus macaco. The female of this variety displays a truly monstrous blood-red Aurora Borealis over its antipodean pole during the sexual period. Only the salvaging of the male's beard must be ascribed to one-sided feminine selection: in this respect, the preliminary work has already been unmistakably done in the case of monkeys and he-goats, where the males alone possess a beard (as among us) or they show it in much more developed form, at least, than does the female. It is said that the male saki in South America has a full beard at least as big as old Darwin's.

But all this is of less importance. The following question, which Darwin had already propounded to himself, is material. If man was stripped of his fur as the result of the whims of his sweethearts, who did not find the fur gay enough and wanted loud colours even at the price of utter nakedness, why then does the skin of the human being not continue to be red, blue and bright like a basilisk to-day?

Noses of alcohol's old friends clearly teach us that some fireworks would be quite well possible. The negro's skin is almost black, that of the Indian reddish-brown all over. But despite all this, the mandrill must have been practically entirely sweated out of us again. The palette would have remained to us; the painting would be gone. Let us assume for a moment that original man was still toned down in various colours, like the contemporary douc, a monkey of Cochin China, whose fur shows black, brownish red, yellow and white; and that only afterwards had man's taste decided in favour of one uniform colour, one group choosing black for its constant colour of love, another group white and so forth, resulting in the different colours of the great races. This original human being would have been an extremely pale, diluted "coloured

man" from the mandrill's standpoint; for what dull colours those are—fur colours, but no nasal colours, no colours of the opposite pole, no cobalt and sealing-wax red! And as for the present-day European, he would stand there like one of those old Greek statues which were originally painted, and faded to a pale white.

You may argue that perhaps this very thing subsequently represented man's improved taste. That after he had pushed the monkey's taste to extremes, until his entire body was naked and glistened with colours like the reverse of a mandrill or a rhesus, he then became disgusted with his own turkey-cock skin, and lovers continued to give their preference to more subdued treasures when choosing, until the whole mad riot of colours was toned down to a pale remnant, which has remained.

But this way out of the dilemma is utterly impossible. For where should this alleged finer taste in colours have come from? Very early and from a definite point on, man took a great step forward; from mere æsthetic perceiving to practising active art. From this point on, he also tried to beautify his own body by artificial additions to it; by painting the naked skin, by hanging ornaments on himself, by putting on coloured materials where clothes were concerned. But how does his taste manifest itself in so doing? The more intense art is in this direction, the greater is the love specifically for bright and in fact for the most brilliant colours and colour contrasts!

The savage still grabs for the blue necklace of beads and not for the white one. He paints himself flaming red. He tattoos one colour after the other on his skin. Among clothed peoples, the king traditionally distinguished himself in the eyes of the multitude by wearing a purple robe. The sealing-wax red of the mandrill's nose runs around the hem of the Roman senator's toga. The colour of the Sistine Madonna's clothes is composed of red and blue, in strict contrast. The cardinal's hat and the stripe on the general's pants are red.

If in our civilized countries to-day men's clothing has almost fallen a victim to that deadening principle and decayed to dirty gray, brown and black, as the theory required, it can be demonstrated with certainty that we here have before our eyes the result of a deliberately inartistic intermediate epoch, which has become estranged from the natural æsthetic principle. All artists cry to heaven on account of it, and sooner or later this puritanical garb

with its colours of dirt will pass from us again like an evil bugbear, vanquished by the healthy human being's joyous eye for colours, which still continues to perceive in this respect exactly as does the bird of paradise.

When should that ever have become permanently suppressed in prehistoric times? At middle diluvial and late diluvial sites where relics of prehistoric civilization have been found at the source of the Schussen in Upper Suabia, for instance, large quantities of red colouring material have been found alongside of the bones of reindeer and Greenland mosses of a glacial sea among the moraine, the débris of the ice-age: a coloured paste made with reindeer fat and iron red, which the deposits of clay iron ore from the adjacent highlands furnished. No doubt exists that prehistoric men, hunters of mammoths and reindeer, who had not yet reached the stage of domesticating animals, of agriculture and the technology of metals, were already illustrating their nakedness here in mandrill fashion with a coat of glaring red, since their natural ground colour was not enough for them.

True, it has been pointed out that, judging from certain experiences among savages of to-day, a hygienic purpose might have played a rôle from very early times in this universal custom of putting an artificial mineral covering skin on the body; protection against sunburn or against the cold (dirt keeps you warm) and against the sting of gnats. But the preference shown for red is too striking; we also know from pictures on the walls of caves (coloured pictures of animals painted by prehistoric hands) that these human beings already employed colours for purely artistic purposes otherwise; and, to cap the climax, representations of human members with zigzag ornaments on them are known from the grotto of La Madeleine, dating from the reindeer epoch. This being the case, how could it be supposed that the ancestors had abolished something by virtue of the æsthetic instinct, which these early descendants were again so eagerly striving for that they painted it on artificially?

Darwin was of the opinion that the Gordian knot could be cut by a much simpler method; that the skin did not become denuded for the sake of colours, but because nakedness gave the lovers pleasure, and that it was in first line the female which was undressed by the male with the eyes, as it were. His idea was that

the woman who was as hairless as possible became trump in the taste of the men, and not a gaily coloured woman. When the original human male went a-wooing, the maiden who was least hairy pleased him best every time. For that reason, the weaker sex is still relatively less covered with hair to-day. For the rest, Eve's nakedness, once achieved, was transmitted by heredity along both lines of her children; the boys too gradually became approximately naked. One will just have to imagine that the original virgins also came to share this taste, and showed a preference for males who were more or less stripped of hair. The New Zealander still has a proverb to-day: "the hairy man catches no wife." In any event, no obstacle of adaptation was interposed here, as was the case with the birds of paradise, and so at the last naked man, naked in both sexes, was left over, a gift of naked love, choosing in its own headstrong way.

There is something uncommonly intriguing about this idea for us. Purely on the grounds of love, the naked woman is in any case the more exciting, erotically speaking, for clothed civilized human beings. She is the female unclothed for love. An animal's fur, however, represents nothing else but clothes grown fast on the body. Removing the hair from the body meant banning these clothes, meant liberating erotic woman for the first time.

This seems to us even more self-understood, as far as the purely æsthetic element is concerned. Just picture to yourself the Capitoline or the Medician Venus or the beautiful fragment from Syracuse all wrapped up full length in curly shaggy wool. The line dies in so doing: art's glorious line of the shoulders, breasts and thighs, the very thing which the marble brings out so wonderfully. Let us not forget that the female back is one of the most fascinating creations of art in our cosmos. It would seem to be more than plausible that no special red and blue mandrill colours were needed to snatch these noble and beautiful lines from the covering tangle of hair before the rhythmotropism of loving eyes and to unveil them in their plastic primitiveness of skin.

And yet I must tell you that I cannot quite see the matter that way either.

I cannot picture the first beginning of this joy in the nude having taken place that way in primeval times which from time out of mind had been accustomed only to male and female comrades who were thickly wrapped up in fur.

Granting the possession of no matter how much sense of artistic lines, drilled into original man from of old, I do not know what stimulus could in first line have been exerted by a female monkey-like human being's belly which was somewhat less hairy, which merely had hair on it like stubble. Yet once upon a time the matter must have started with advanced outposts like that. I fear that such first beginnings of nakedness without the simultaneous fireworks of colour must all too strongly have made the impression on a taste accustomed to fur, to which I gave expression once before in describing the naked cave-man by his red fire; the impression of a plucked chicken. The sum-total of the ornamental lines of the female body could not be surveyed at all before the whole work was completed. Only then would the cause have resulted. If we were to believe anything of the kind, we should simply arrive at good old Wallace's crude teleological intelligence. The very thing that we wanted to do was to start out from the simple intelligence of the original males and females. But if this simple intelligence had been forever accustomed only to fur, from where should an ideal of nakedness which was still to be achieved have sprung out of its head, all finished, like Pallas Athene? The same thing applies to purely erotic excitation. The ardent colours of the mandrill could probably have helped traditional love in fur somewhat in this respect. But I see no illuminating purpose of the kind in simple nakedness, particularly in its first stages.

Then there is still another thing. In the case of tropical animals, as was said, being stripped of the hair had absolutely nothing to it in the way of pure utility as an adaptation: quite the contrary. This æsthetic-erotic innovation would have had to fight out a hard battle here. Whoever has always worn clothes and for the first time experiments naked with sun baths, even if only in the warm sun of the Mediterranean, knows how sensitively the abruptly bared skin "burns." In this sense, the furred animal is in exactly the same boat as civilized man: stripped of its fur, it would have had to undergo the bitter experience of this predicament as well as of its reverse, the chill induced by the cold nights contrasting sharply with the heat of day. Would that not in the end have taken the caprice of the nude fashion out of love, even granting that it had this new ideal? Do not forget that these protective adaptations always come first; they are the sound cork in the bottle of champagne; only when it becomes permissible for the

cork to give way, does the other thing foam up high, like a sort of evolutionary luxury. But in this case, I should like to see a credit item from some angle of utility rather than a debit item. I should like to hear that under certain circumstances and purely from the practical standpoint, nakedness was more useful than a fur coat. Then I could believe that at a certain stage of this removal of hair for reasons of utility the erotic-æsthetic department finally got busy and helped the good work along.

But how can that come about in this tropical situation, where the orang-outang still has hair to-day which is thick, like faggots grown fast, and where the lion drags around its proverbially huge mane, like a superlative of all hairiness?

§ 4

Our cobweb flutters away into empty space. It seems as if a dark melody, with all manner of tones, were humming through everything said so far. But these tones will not arrange themselves in proper order; there is still a resistance, a contradiction in the melody. But just as the wandering spider keeps shooting a new little strand from the inexhaustible spool of its spinning gland, so do we from our brain, this old giant spinning gland of wandering thoughts.

Can it be that a so-called "correlation" of evolution was involved in the original falling out of the hair? In plain words, correlation means mutual relation. The sense of it is that if one organ in a living being undergoes a change, one frequently observes a change in other organs, which seemingly have absolutely no direct connection with the former. Here is an example. In varying breeds of pigeons, short beaks invariably entail small feet and vice versa. The reasons for this, as is the case with so much else in this field, are wrapped in darkness for the present. You know how enormously man changed in certain definite respects at a certain stage. You know about the "library tower" of the skull's upper arch being built and enlarged, about the gigantic brain assuming the chairmanship of the whole works of the body, and about the upright gait putting in appearance. What if these things had impaired the growth of hair in some such connection? The road would then have been different again: increasing intelligence, while it would not have abolished the hair with seeing eyes and by independently choosing, would simply have negatived it by virtue of its own existence in the domestic economy of the body. This has frequently been supposed. Yet I cannot see the matter as crudely as that either. A correlation in direct defiance of utility could hardly have become established. In order to explain something that is controversial, something brand-new was invented and joined to this idea; namely, a correlative connection between the development of the brain and the falling out of the hair, which is something about which we have no direct knowledge anywhere

else. But if you want to get that deep into hypotheses, it seems to me that there are other far more acceptable ways.

Let the tropical island with its sun and flowers sink out of your sight for a moment.

Do you see the star up above there? The Great Bear with its seven magic eyes depends above the snow in the nocturnal blue, and high above it hangs the pole-star. A spider's thread of thought invariably flies up to it when your eye beholds it. An imaginary line runs to it from the North Pole of this old terrestrial globe; the direction of the earth's axis. A spider's thread extending through icy space, many trillions of miles on. But infinite love climbs up on this cobweb. The axis of the earth stands askew on the whizzing terrestrial monster's path around the sun. And a tremendous magic power, which imposes an immutable fate on many thousands of this earth's square miles is inherent in this obliquity of the axis: the good fortune and doom of the seasons.

Winter's snows and the violets of spring and summer's torpid, scorching glare and a wreath of burning red autumn leaves: with these four antitheses, a profound "astronomy of love" rises up. No spring without earth's axis being askew. All days would be equally long all over. That line yonder to the pole-star in truth extends through every springtime wood, into the violet buds of the birches and the pollenating pine cones, and into the air-waves as well, on which the love song of the nightingale softly floats away. The sun and love have a most primordial connection. The sun is the earth's source of power. Love is the most concentrated force of terrestrial life. But by virtue of the obliquity of the axis, the light of the sun pours down in periodically unequal streams, now flowing and now ebbing over vast regions of the earth, and above all specifically over the stretches of land in our northern hemisphere with their variegated life. And so a mysterious cosmic periodicity gets into love-life.

There is a still simpler periodicity in love-life, which is likewise astronomical: day and night. The song of the nightingale sounds most enchanting through the night. And Philine's roguish little verse about the long day, which is full of troubles, and the night with its pleasure, the pleasure of love, trills through human love. A fixed protective adaptation of harassed man quite certainly lies in the idea "night of love." Bright day really has its troubles; the individual fought within narrow limits for his person, his food,

his life. But in the stilly night the strength of the species became mindful of itself, larger life bloomed, extending procreatively over the millenniums. Nevertheless, this alternation of day and night plays no decisive rôle in love, none that is very sharply incisive. The nightingale sings by day as well when its tide of power wells up to the maximum, and how many a one of us is a child of the sun. The great periodicity of the seasons is infinitely more important in terrestrial life.

Here, adaptation is just the reverse, and at the same time it has a dominating might. Winter is a time which is poor in power; when it is necessary to economize and get along with a minimum. The individual hardly knows what to do. Birds now pour out in immeasurable swarms over many degrees of latitude from north to south, merely to save their naked, individual vital energy. Mammals, reptiles and frogs lie bedded deep in the ground and sleep through the bad times without stirring, with the clock of their heart barely ticking. This is literally the hour of death for whole races of lower animals which age rapidly. Only with spring does the great golden rain of power from the sun set in again. The sun's rays pour down on the unfruitful earth as into Danæ's lap. And all the concentrated, restrained, repressed regenerative love, the love of the species, the love of sperm-cell and egg-cell, foams up. Thus winter and summer signifies an erotic ebb and flow with which the earth's orbit around the sun every year takes a hand in terrestrial love-life, taking hold by the ideal handle of the oblique position of our planet's axis on its course.

But now, into all of this is injected a picture possessing the paralyzed immensity which all terrestrial pictures acquire when looked at with the comprehensive view of many thousands of years.

Rousseau and Forster did not know anything about this as yet, when man of the Garden of Eden sank earthward and became primitive man on a perpetually blooming tropical island in their imagination.

Your star yonder does not hover eternally over the pole. Unroll your chain of millenniums, and the spider's thread of your mathematical thought, which has prolonged the axis of the earth into stellar space, no longer hits the pole-star, but a different one. The direction of the axis has shifted. Another still higher astronomical

period unrolls. The earth swings once around itself every day. It swings once around the sun every year. But every twenty-six thousand years its axis swings around once in a circle, alternately pointing at a whole series of different stars in the firmament and finally getting back to the first one, from which it started.

This does not affect the uniform alternation of summer and winter. For even though it goes ticking around like a dancing humming-top, the axis remains askew. But now spin this period into your evolutionary cobweb. The pole-star changes before your eyes; it is no longer the little tail star of the Little Bear which twinkles as such, but that star yonder, glorious Vega in the constellation of the Lyre, and Deneb in the constellation Cygnus, until finally the bear-star is back again, for the twenty-six thousand year period is exactly over on the celestial dial. The hand again points to twelve; but it is already sliding on again and the alternating game begins anew.

Now consider that you really do mentally turn back the hands of the terrestrial clock. As you turn only once from the Little Bear back to the Little Bear as pole-star, you have turned back more than twice ten thousand years of the earth's history. Your eyes were fixed on the solitary axial star up there, and you turned and turned heedlessly. But now stop and look around you. You began your studies through a cloister window of human civilization, opening on the northern hemisphere of the earth in the temperate zone, in Northern Germany. And all of a sudden you shiver with the icy cold all around you. Your Gothic window is the fissure of a cave, and more specifically a cave in the ice. The walls on both sides of the crack tower high up: glacial ice. The light of the star fades spectrally in the greenish blue. Water drips; ice-cold glacier water. A dull tired feeling seizes you; the tired feeling of the animal, whose hiding-place winter has come upon and which is now getting ready to sleep through it. But by turning back the celestial clock you have turned yourself into a winter of a very different kind. Millions of cubic miles of ice weigh down on Northern Europe in a compact layer. The burden continues summer and winter. You have gotten into the great ice-age of the mammoths and neolithic man, the so-called diluvial ice-age.

I will not mention any figures. I purposely did not look closely to see how often you really did turn back the axial clock. I am not saying, either, that turning back the clock had itself conjured

up the glacial period in any more causative sense than merely that of time.

There are people who look for a reason in this shift in the direction of the earth's axis to explain why the earth had to undergo a colossal glacial period, like having an attack of planetary shivers. This ice-age was only an ordinary winter of snow and ice, intensified to gigantic proportions and temporarily exaggerated to a state of permanence. That axial period in itself affords no reason for any such exaggeration of winter. But possibly it could be combined with a supposed still greater periodicity to the extension of the earth's orbit which, as is well known, is not a genuine circle but a more or less stretched out ellipse. As things are now, the earth is sometimes nearer to and sometimes farther from the sun. And as our axis is pleased to be set to-day, with its northern visor looking at our pole-star in the Little Bear, we inhabitants of the northern hemisphere have our winter when the earth is closest to the sun and summer when it is at the greatest distance from the sun. But when you turn back the axis, you will keep coming back again and again after a series of thousands of years to a period, when the exact opposite is the case, because of that shift in the position of the earth's axis. In very huge spaces of time, the ellipse of the earth's orbit is supposed to stretch, too, until the peak is reached, when the earth strays along very much more distantly from the warm hearth of the sun than is the case at present. Now if just at such a peak at this distance from the sun (and therefore just the opposite from the case to-day), it should have happened to be winter in the northern hemisphere of the earth, those are in all seriousness supposed to have proved fatal winters, winters raised to the second power, or super-winters as it were, in short, an ice-age for the northern hemisphere.

But this theory no longer has many followers to-day, as it did a number of years ago, because the details about the stretching of the ellipse remain problematical or because its figures do not fit the true state of terrestrial things, and also because it becomes more probable that the freezing process would take place simultaneously over both the northern and the southern half, and therefore prove a universal terrestrial phenomenon. The fact must remain that the temperature of the earth on the whole was at that time a few degrees lower, and that this made itself felt in the form of tremendous rainy periods and magnified glaciers in the high

mountain ranges, extending even into the tropics. In order to make the explanation good and hard, this cooling down of the earth further took place with intervals in it: several warmer interim periods were interpolated in the great period of snow and ice. On the whole, the enormous length of the period in which this game fluctuates back and forth becomes ever more apparent. We further know now (we spoke of this once before) that at least once at a former, far distant geological turning-point, at the close of the carboniferous period, something which at least resembled a cooling down process came over our planet. This cannot be a symptom of a general cooling off of the earth either, for at that time (into the saurian age) it grew tropically hot again up to higher degrees of latitude, and even though we have not gotten that far we in any event emerged from the diluvial age of ice long ago. Who at the present time will undertake to cut this Gordian knot of a thousand riddles with a single explanation? As was said, the carbonic acid content of the air, which periodically is somewhat greater, possibly owing to increased volcanic activity, has been drafted for service as an explanation; this increased quantity would check the radiation of heat by the earth and would give us periods of greater warmth, while conversely a greater cooling off process would have to follow epochs of very strong consumption of carbonic acid by very luxuriant vegetation and great disintegration of mountain ranges. There is much that is fascinating about this explanation, but it is also subject to all manner of objections. And there are other theories in plenty, over all of which the great phenomenon of the diluvial ice-age towers like a rock.

You turned back the celestial clock a certain number of times, and now you are suddenly stuck in the ice. The temperature of your northern hemisphere of the old planet has suddenly been screwed down about five degrees on the average. These five degrees (it actually does not require more) have sufficed to transform Santa Claus coming through the snow into a truly frightful ice giant who starts in to lop off everything with mighty blows of his club that the industry of the gods of love had planted in the northern field of the earth during millions of years.

Turn and twist as you may, one cannot get away from the idea that this northern field was the site where the holy terrestrial child, life, had been cherished and spoiled with particular love from time out of mind.

I do not know how early that began. Let the great cosmic ages of the earth's history pass by you up to a certain height without asking any questions about it. The first age, that oldest one for us, where life begins for us on the Algonkian-Cambrian strand and at whose close the wind whistles through the carboniferous period's blades of shave-grass which were tall as palms. Then the wonderful ichthyosaurian period, where the archæopteryx flies and the iguanodon, high as a house, hops on its hind-legs in the grove of cycads. But now the curtain rises for the third time, and the intermediate and higher mammals jump, climb and trot over the face of the earth. It is the Tertiary, already a very much clearer time as seen in the great perspective. The predominance of the old enigmatical globe's northern hemisphere becomes quite unmistakably clear in these Tertiary days. No matter how often they bob up and dive down and are torn to pieces and fuse together again, the great masses of land come to life stretched out around the North Pole. In the southern hemisphere, such land as has remained from very early times, constituting remnants of primordial parts of the earth, and whatever has there sought its own line of evolution in life, from now on remains conspicuously isolated. Australia, for instance, with its duckbills and marsupials; South America with its armadilloes and sloths. But on the northern half's continental ring, the great sower, evolution, walks restlessly as the Wandering Jew ever around the pole in smaller and larger circles, and the earth quakes under his tread with countless growing sheaves of the one fundamental type of the higher mammal, the crown of life.

They keep on growing and growing and moving and wandering, from Asia to Europe and to and from North America via the Bering Strait and from America to Europe on North Atlantic land routes which are long lost and forgotten to-day, over Mediterranean bridges from Europe to North Africa, backward and forward, ever new floods of animals and migrations of peoples, of families and races which originated somewhere; a colossal crush, of which the catacombs in Montmartre at Paris, in the Siwalik hills at the Himalayas, in the classic soil of Picermi at Marathon, in the heart of North America, in the primeval river delta of present-day Fayum in Lower Egypt and so on still give you a picture of ghostly grandeur with their mass graves to-day.

And all the time that these swarms of mammals are roving

through this Tertiary period, restlessly roving, spreading out, permeating continents in long lines as the swarms of yellow Medusæ do the blue sea, the stage is ever set with the scenery of a green land of woods and meadows covering this whole northern hemisphere until high up toward the pole, until close to the perpendicular line beneath the changing pole-star. Just as coral animals once piled up their cathedrals as far up as Smith Sound in arctic North America, animals which we only know to-day from warm tropical seas, so now at least a breath of the enduring laurel-green forest extends up to improbably high degrees of latitude. The pine that sheds its golden tears of rosin, which later became amber, over long forgotten streams of northern Europe indicates the existence of a forest in which the Seychelle palm still rocked its beautiful head of leaves alongside of araucarians and swamp cypresses. Winter was powerless only in the sense that it is to-day. The alligator lay sunning itself in the valley of the Rhine, the hippopotamus bobbed up and down, parrots shrieked, and monkeys chased one another in the thicket along the sunny bay. The long neck of the giraffe stuck out of the grassy plain, where infinitely later the Greeks fought out the battle between Europe and Asia and crowds of relatives of the curious okapi, which we have with us to-day, played around there, and the ground-hog burrowed in the termitarium. Then, toward the end of this paradisaical time in the northern lands, paradisaical in the sense of enjoying nature's green setting, the absolutely unexpected happens. By periodic thrusts, the average temperature not only dropped to the level of to-day but a little further; a small additional drop which had frightfully grave consequences. An observer on a distant star now sees a suspicious bald spot appearing on top of the earth's northern head. And this bald place keeps on growing. It advances toward Europe, Siberia and North America like a wandering bell, driving everything living before it as if it were a demonically incomprehensible something coming from distant planets. Everything that gets under it is smothered to death. For it is made of ice, compacted of ice. It rolls on for a time toward Europe in the form of glaciers sliding from the mountainous regions of Scandinavia and Finland. It buries the regions of the North Sea and the Baltic; its base, a thousand yards high, crushes down upon the North German plain. Beyond Ireland, it towers out into the Atlantic Ocean as a menacing, snow-white cape, which calves ice-

bergs. Gnashing his teeth the ice giant who after all must come to a halt when faced by one who is better armed, the granite giant, balks at the intermediate chain of mountains in Germany. But wherever mountain ranges happen to tower high and form giant mountains and Alps, they stretch out crystal paws of their own and crawl down into the valleys with their annihilating icy breath, carrying destruction where the actual northern giant is unable to get to. The glaciers at that time crawled as far as Munich and Upper Swabia. One picture chases another. And there is ever something of the end of the world in them. The flood bursting into paradise, a flood of elastic ice which gently presses on. More toward the tropics there were genuine floods of water. The evergreen nordic forests of the Tertiary everywhere snap off and freeze and are reduced to mere litter. Their place is taken by the tundra, the mossy steppe, extending deep into the heart of Europe with the advancing ice. Vegetation arises again at intervals. Uncoated old elephants and African rhinoceroses then journey far into our continent again, until they finally stay away altogether. It seems as if the ice, with its tundra, were to gain the final victory. And yet, that too becomes mitigated. Even the mightiest walls of ice melt and huge streams pour out in front of their thawing surfaces. At that time the waters of the Vistula and the Oder flowed past the crystal wall into the Elbe, reinforced by the floods from the melting ice. In the course of this, endless masses of rock were crushed to sand by the glacier, and the choked rivers piled up their own sand in addition. In that way, uniform sand was poured mountain high over the hilly country of northern Germany, until a smooth plain was produced, in which almost every inequality was filled in. When such sandy surfaces became free, they offered the conditions of the steppe for a long time. Terrible sand-storms drove up through the valleys of the rivers and piled up the yellow dust in loose terraces before the mountain ranges. And so it seemed for a very long while as if four continents were alternately fighting over poor Europe. Hot Africa, once the sole owner of Europe, which then reconquered it only temporarily, and was finally vanquished and driven away everywhere. Icy Greenland. And the dusty steppe of Gobi in eastern Asia, the yellow deposited landscape of China. Lastly, moderated Europe enduring to this day.

The proud mammalian world went downhill at a terrific rate

all along the line, not merely in Europe, in these times. It was caught everywhere in what was most peculiarly its own terrain, the entire ring of land in the northern hemisphere. It never got over this. True, we still find its genuine remnants in tropical Africa and Asia; its elephants, hippopotamuses, giraffes and antelopes. In America, the fauna became utterly impoverished at that time. Even where the cold did not directly grip it, you think you can feel a decline in strength everywhere, a falling down in the face of too heavy new demands, with which some wave of the great hurricane touches them as well. And under the compulsion of supreme menace only a small band still finds the energy for a last adaptation; it defies the new order almost or entirely on the old spot. The first genuine arctic animals now originate out of this little band of the bravest of the death defying. The elephant, which in its tusks still brings along the typical forest animal's old implement for snapping off branches, accustoms itself as a furred mammoth to the creeping, crippled vegetation of the tundra, in the course of which its tusks which have become purposeless degenerate into monstrous crooks. The musk ox becomes the arctic animal which continues to make good in Greenland to-day with what it practised in the valley of the Rhine at that time. An all the more stubborn opposition against the general flight and the pitiless collapse and an all the greater endurance makes its appearance in these few.

You stare out of your fissure in the ice up to the pole of heaven, where possibly radiant white Vega just happens to be hovering. Deep down under this ice, buried in sand lies the paradisian forest of the Tertiary. Above, reindeer trot toward the glaciers, and musk oxen browse on the lichenous ground during scanty summer. "Cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life. Thorns also and thistles shall it bring forth to thee. . . ."

The most remarkable mammal of the preglacial Tertiary tropical period was man.

Every fibre of his being strictly points to his belonging in the series of that old Tertiary animal world. He belongs most intimately and inseparably to the world of elephants, rhinoceroses, hippopotamuses, sivatherians, giraffes, okapi-like helladotherians and tigerlike machairoduses. What separates these from the duck-

bills and marsupials of Australia and the giant sloths and the armadillo-like glyptodons of South America, separates him as well.

If the cradle of that most luxuriant creation of mammals lay in the northern hemisphere, so did man's. For the first time, the beautiful tropical land, which from Forster to Darwin had been dreamt to have existed "somewhere" as the actual original ground of man's origin, appears really to be somewhat localized, geologically speaking, both as to place and time, in the happy summery evergreen forests of this older Tertiary. But when we see these Tertiary forests grouping themselves in tropical luxuriance and in ring form toward the northern arctic circle, we are under no compulsion to place this origin of man between the actual tropics of Cancer and Capricorn and in the line of the perpendicular sun.

If that theory, which we previously discussed, of a particularly protected and particularly luxuriant "sanctuary," where the actual origin of man might have taken place under circumstances of far-going relief from the struggle for existence, is correct, this sanctuary could only have existed there. Our anthropoid apes, to whom, in the sense of what was previously said, we do not by any means want to trace back man's descent, but which are extremely close to man genealogically, were already finished far back in the Tertiary. The fact that their sparse surviving remnants all live in the vicinity of the equator or even farther south to-day merely involves climatic nooks where the Tertiary ark with its mammals was swept down from the north and stranded. When the northern intermediate Tertiary was in tropical flower, the pliopithecus, which was a genuine gibbon, lived around Zurich and Augsburg, and the dryopithecus, which was more closely related to the chimpanzee, lived at the foot of the Pyrenees and in the valley of the Rhine. Very recently, a little fellow which perhaps belongs in the common roots of both man and the anthropoid apes (Schlosser's propliopithecus) has become known to us as having existed in the first third of the Tertiary (the late eocene) of lower Egypt, the same site of notable finds which furnished us with the transition forms from the original beasts of prey to the whale and the ancestors of the elephants (two old wishes of the doctrine of evolution). Then those mysterious "eoliths" already make their appearance occasionally in the middle Tertiary, in the miocene, in southern France and elsewhere. If all signs do not deceive, these are the implements of really manlike beings, who habitually sought certain sites

where flint was found and broke the larger roundish rocks into fragments by means of a very primitive technology and worked the edges of these fragments for definite purposes. Those must have been very late wanderers who swarmed out of that "sanctuary"; "human beings" who were finished up to the first stage of implements. Possibly the lower jaw found in Herr Rösch's sand pit at Mauer near Heidelberg, which latterly became so famous, can still give us an idea as to the physical appearance of these "Aurillacensians" (so-called after the best known site of eolithic finds under the miocene lava of Aurillac in the Auvergne region). Judging from this, they must have continued to exist in Europe until the tail-end of the Tertiary, until the same or almost the same point of time at which the mysterious half-human being, pithecanthropus, still existed on Java.

But so far, no clues whatever are afforded for the more specific question which interests us; how long man continued to be furred like an animal?

However, if man brought with him the original fur grown on the body, which all those old Tertiary groups of animals had, and about which there can be no doubt, judging by the existent remnants of hair and the thick fur of the human embryo; if man did not lose it at the very beginning as the result of a special adaptation, say to water, or by reason of simple correlation or through love-selection; if a tropical climate could not menace it but at the most favoured it; then, according to all analogy, one must be of the opinion that this genuine old human being of the warm Tertiary must still have been correspondingly covered with hair.

There is just as little doubt that man also belonged to that limited number of animals, which courageously fought against that great climatic change, as it gradually intervened in the Tertiary, and which survived it victoriously. In this respect, although with other means of resistance, man lined up with the musk oxen, reindeer, mammoths and furred rhinoceroses, which stood their ground into the diluvial ice-age, and not with the one-sided children of the tropics, which dodged this change of things by going southward or utterly succumbed.

The fact that the change by no means came precipitately made this easier for man. Slight variations in the climate appear already to have occasionally made themselves felt very early in the Ter-

tiary, like harbingers. Then too toward the middle of the period, in the midst of the most paradisian tropical development, the great epoch of the far-reaching formation of mountain ranges on earth gradually set in, its results (although disintegrated to ruins in the time that has elapsed since then) still persisting to-day in the great creased mountain ranges of the Cordilleras, Alps and Himalayas. Rising vertically, slowly but inevitably, individual hot tropical regions of the most densely inhabited continents must already have been removed into a cooler atmosphere at great altitudes. For even if we assume a mean temperature five or more degrees above the temperature to-day for the whole earth during the hottest part of the Tertiary, the fact that a low tropical plain close to sea level, such as the Alpine and Himalayan country was at that time, by slow degrees bulged up and became an elevated plateau like present-day Tibet or, still more, approximated the icy heights of Mont Blanc and Mount Everest, was bound to make itself felt in a general lowering of the climate. Then in the last third of the Tertiary, without a doubt, the ice-age itself very, very slowly at first, took a hand in the game. At a time when it was practically not noticed at all in Central Europe, it must already have begun to make itself felt in the arctic regions and there it must have begun to exert a disturbing or an educational influence on organisms, as the case might be. In the beginning you still have those repeated intervals, which we already mentioned, in the midst of the diluvial ice-age itself, during which, even among us in Europe, it looked as if a last reflection of the African rhinoceros' steppe without mammoth fur might make its way and become established once more, in defiance of all the tundra. A headlong catastrophe was never involved at all, animals having the potentialities could adapt themselves. Nothing can adapt itself to a deluge, because everything drowns long before the first start can be made toward adaptation. But if the water rises only a foot in every thousand years, it is possible in the end for a land animal to swim off joyously as a well adapted seal along with the actual last crumb of an islet that becomes submerged at high tide. And this holds good for a change in the climate.

Now we come to an important milestone again. Man, as a creature of intensive culture, whom we perceived only as a shadowy phantom in the Tertiary, suddenly meets us in the midst of the

actual diluvial ice-age in most tangible outlines. That picture, from which we started out once before, rises up. Man in his grotto of chalky stone, with the red shine of the heart's fire playing over his naked body. Naked. But naked with a very particular addition now.

§ 5

It was on an unforgettable day of wandering years ago. We started from Zurich, Julius Hart, his dear little wife, who now rests in the heart of the dark mystery too, and I; and we had wandered through the lower Alps, always on foot. Finally we got up to the Furka pass in the mist. Then came an hour of early evening, when the sky was ineffably clear, and we had a whole view of the Alpine world's icy sphinx. There, under the so-called Känzli, lay the Rhone glacier, so near you thought you could touch it. A floe, from which a drop of water runs down glistening like a pearl, and this drop grows into a world river which descends far, far behind the horizon of the earth's curvature into the sky-blue southern sea. Just below our feet, around a wet patch of snow, is a red wreath of tiny, creeping rhododendron flowers. Then a short descent over disintegrated rock. And now, huge, white and naked, like a tremendous body which is frozen stiff, lies the smooth surface of the glacier, entirely without any dark stripes of débris. At back, above where it begins, there are only a couple of stubby mountain crags, the glacier dominating the entire scene, without any particular mountain from which it escapes. Only the side wall over there, which once it still grasped in old and prouder days, and which was polished smooth and bright by it. In a regal curve, the stream of ice then went downward to the left, at first perfectly pure of marble line, until it tore apart lower down and split up into a magnificent field of ruins consisting of sharp green fragments of glass. Below it, the dizzy precipitous descent into the blue crater of the valley of the Rhone. On the other side, the Grimsel pass rose in zigzag lines, and above this stood the Bernese highland's colossuses of ice with the menacing pyramid of the Finsteraarhorn at the edge, high as the clouds, seeming twice as high because of the abyss beneath, like a story in a new world. As if up in a balloon, your eyes roved from the bottom to the height and then, poising imponderably, back from the height to the bottom.

And then, way, way down below they caught sight of Lilliputian

existence. Where the Rhone unwound as a tiny thread from the colossus of ice, a couple of little windows blinked—diminutive houses of human beings, the hotel buildings in Gletsch. There was something crushing about the contrast. And yet such boldness about the Lilliputian labour expressed in these little mole heaps at the feet of the naked giantess of ice who lay stretched out over whole mountains. Involuntarily the thought came to one's lips: this is how things began in the visible sequence of time! Thus did prehistoric man camp at the edge of the ice-age's glacier! All at once, the body of the glacier lay stretched out over half of Europe, and what we saw down there was the tents of prehistoric men, the hunting tents of mammoth hunters. Never before had this idea so vividly unfolded before me. The gigantic ice and diminutive man. What had this sphinx of ice made out of him in her embrace? Out of man, whose oldest eolithic station had lain far back in the evergreen woods of the Tertiary!

She had not buried him and had not driven him away. We have proofs of that. Man appears as an adaptation to the ice-age, a vigorous adaptation, overcoming the tremendous phenomenon on the spot and permanently holding the ground when at last the ice crawls completely back like an evil beast and releases the plain and clambers back onto the arctic lands.

Diluvial man appears to us in wonderful, teeming sites of finds at the most diverse points in old Europe. The Dordogne in France, at Taubach near Weimar, at the source of the Schussen in Upper Swabia which we already mentioned, in the Kesslerloch at Schauffhausen. At Taubach there was a prehistoric settlement on the shore of a lake which was formed by the Ilm, and refuse from the settlement fell to the bottom, where the chalky ooze covered and preserved it. On the Schussen, reindeer hunters made their summer quarters in the moraine beside a glacial pit, and all manner of refuse from their culture got under the Greenland mosses in the pit, preserving them perfectly. In every case you see evidences of civilization, of implements which were constantly being improved. In Taubach they caught the old elephants and the rhinoceros, the deer and the cave-bear in pits, and fashioned the bones of these animals to their purposes. Hard rocks, firestone, flint and porphyry containing quartz furnished material for other implements and weapons. At the source of the Schussen the reindeer's antlers, cut with flint implements, furnished infinite material for making fur-

ther implements. Elsewhere the mammoth was in the foreground.

The attempt was early made in France and Belgium to distinguish a more specific succession of stages in development within this diluvial culture. Mortillet taught that there was a Chelean stage, a Mousterian, a Solutrian and finally the Magdalenian stage forming the crown of all, based on the sites of the finds and the excellence of the implemental technology. Those wonderful cave paintings, which I mentioned once before, belong to the Magdalenian stage (named after the grotto of La Madeleine in the valley of the Vezère). The details of drawing the absolutely correct limits of a scheme of stages continue to constitute a problem to this day. The only thing beyond a doubt is that an appreciable piece of progressive work on the part of diluvial capabilities lies between the beginning and the end.

In very recent times it has become more certain that very different sorts of human races participated in this progress at the same spot or at places which were very close together. Just as the animals which were hunted changed during the wilder intervals of ice and the warmer intermissions, advancing and receding, so did the human material undoubtedly move backward and forward, under all manner of changing conditions, during the long, long period as a whole. At the beginning of the diluvial period the Neanderthal men lived very generally throughout Europe. There were human beings with strangely protruding bony ridges in the region of their eyebrows, beneath which were big goggle-eyes, and in return the lowest part of the face was still without a chin. They remind you, in many respects, of the present-day aborigines of Australia; in other respects, they kept an utterly special character of their own, of which not a single living sample has come down to us. You get the impression that they were more the Europeans of the snow-drifts that preceded the actual glacial period, retreating southward when the first ice offensives came along, then taking a chance and returning north again for a while when new and milder intervals appeared. Only when the animal world of the warmer interposed glacial periods disappeared for good and all (for example, the old elephant, which must not be confused with that genuine defier of the cold, the mammoth) did they gradually perish to the last man.

But meanwhile (probably in a more easterly, possibly originally also a more northerly region of the European-Asiatic belt of land)

other races had developed, which had already ascended to the height of our modern northern peoples and civilized peoples in respect to the structure of their skull. They appear to have been more hardened and more closely identified with the ice-age itself. You have the feeling that it was the increasing northern cold itself which had steeled them. They too may have been compelled to migrate at the peaks of glacier formation which made vast regions uninhabitable; but they now invariably went southward into the regions of the tundra and the steppe. These human beings appear in growing numbers at the classic prehistoric sites from about the middle of the diluvial period on. They seem actually to have still come together with the Neanderthal men in the Dordogne as well as in Krapina in Croatia. Later, toward the end of the glacial period, they continue permanently to hold the field in France as Magdalenians over long periods of time. In Germany the reindeer hunters at the source of the Schussen and the Kesslerloch at Schauffhausen correspond to them.

Throughout this entire time the decisive factor continues to be that a culture at a stage high above the Tertiary eoliths exists everywhere. The Neanderthal men, whom first attempts at interpretation tried to make out to be regular monkey-men yet (whereupon Virchow denied their whole existence in the course of a long and worthless controversy) also were already in complete possession of diluvial culture in their middle stage, as we unambiguously know to-day from the burial sites which we mentioned once before. The culture of the Magdalenians had certainly developed a bit further than this, even though they still had not arrived at the use of metals and at agriculture. But the actual step to diluvial culture long ago lay neither here nor there, and so the differences between these human races from now on remain immaterial to a certain degree for the main picture.

Definite facts in this main picture now afford us a new and certain clue to the question about the stadium of nakedness which had already been reached here.

You find traces of hearth fire in Taubach and on the Schussen as well as everywhere else. In Taubach charred bones of rhinoceroses, elephants and bears lie beside fragments of shell-limestone from the rim of the hearth, fragments which are reddened and hardened by the heat, and also beside pieces of charcoal. What

the simple fact of possessing fire must have meant in the really icy times of the period still fairly shines on you. The coloured paste, about which I told you, is likewise found on the Schussen. These fellows painted themselves red. Then they must no doubt have been naked. An unmistakably naked human being is represented in pictures scratched on a piece of a reindeer's bone found in a French cave, and certain ivory carvings seem to indicate the same thing, although the investigation is not quite concluded.

But how can this naked frog be good for anything in this icy hell? You burrow further in the prehistoric rubbish pit and you find bodkins and needles of bone and wood, you find unmistakable traces of the fact that thread was already spun, that these men already sewed, and that they even wove a sort of network. At the same time you look upon the scenes where large and small furred animals were slaughtered. Skins stripped from animals rise before your mind's eye. What else should these people have woven and knotted together with their crude implements but the sinews of animals, what else could they have sewed but the skins of animals? One of those prehistoric artists of the Magdalenian tribe literally exhibits the matter to us. The pictures of three contemporary men are engraved on an ornamented piece of stag-horn found in the cave of Mege in the Dordogne; the three have the upper part of their bodies wrapped in thick fur while their legs are naked. In this particular case, the head is concealed by a real head of a chamois which still hangs on the skin: it seems that we have before us a disguise for hunting, such as the bushmen and Indians still employ to-day for stalking shy game. But it is obvious that fur worn at all must also have served for warmth in a cold climate, after Eskimo fashion.

And suddenly it dawns on you what made it possible for this naked fellow to go hunting in the cold of the glacial period at all: the fur which he had stripped from the chamois, the wild steer and the bear, and which he had wrapped around his body for a coat. Clothed man stands before you!

On the one hand, these diluvial Europeans were already naked. On the other hand, the conception of clothes was already contained in their culture; in other words, the conception of the artificial substitute for the animal fur that was originally grown fast on their own bodies, in the form of a strange animal's fur which was drawn over their own naked bodies as needed.

At this point, forget all about chronology and all actual finds bearing on the tradition of clothes from the Tertiary to the end of the diluvial period, and merely engage in a purely theoretical consideration for the present. Let there here be a human being at a certain stage, and very, very much of a beginner. He already has enough human brains to make the very simplest implements, merely such as correspond to the Tertiary eoliths for the present. Stone weapons of the most primitive kind, with which he can kill big mammals and crudely strip off their skins. But in the sense of what we said above, he is still actually supposed to have the old hairy covering of the animal grown on his own body, like any monkey. And now let the temperature of the climate drop. This man is supposed to feel the same need which any dirty little monkey belonging to an itinerant organ grinder experiences, when it gets cold and the poor fellow freezes miserably despite the fur which is grown fast on it, and carefully wraps itself up in any available cover. Our original man has covers on hand—furs stripped from animals. He pulls the artificial one over his own fur, temporarily or even permanently in the case of increasing cold. What will happen now? All this thought out purely theoretically for the present!

When the fur of another animal is habitually worn, every individual must keep on having the hair of his own body scoured off in first line at the shoulders and on the back by the pressure of the outer clothing. Even if it made its appearance only after clothes had been worn for a greater length of time, the fact of having his own hair rubbed off must have proved an advantage to the individual in question for a very definite reason which is inherent in the nature of the concept "implement."

Wherever implement and organ are brought into comparison, the implement has the tremendous advantage that it is not inseparably grown fast as the organ is. The implement can be put down after it has been used. I must eternally drag around with me claws on the fingers and biting teeth in the mouth, even when there is not the slightest demand for clawing and biting. On the other hand, I can take a pitchfork or a hatchet in my hand to-day for aid or defence and to-morrow, when all is quiet, I can stand them in the corner again. In exactly the same way, the fur on the body, the fur that was grown fast, went eternally along: the bear skin which was pulled over it could on the other hand be just

as easily pulled off again and laid aside, when it was not needed. And there was a place where it was not needed.

Charred bones and charcoal lie beside the sewing needles in the prehistoric rubbish heap. The flame of the hearth was the second great implement which in addition to the bear skin enabled man to survive a cold period. In the open, the bear skin served as a poor conductor of heat, retaining the heat of the body. The flame of the hearth, however, was the first "domesticated animal"; it warmed him at home. When these human beings (let us say this too without fixing any point of time or any place whatever) sat in their cave, they all of them, the whole family, had a kind of clothing around them which was warm in a totally different way from the bear skin or the hairy skin grown fast on the individual. The vault of the whole cave formed the poor conductor of heat, as it were, protecting the body heat. But there further lay a particular positive source of heat between this vault and the individual human bodies, heating the air in between: that was this very fire of the hearth. Here in the cave, therefore, the bear skin was totally superfluous for the bodies, as far as saving the internal heat of the body was concerned. The moment they crawled into the heated cave as into a higher social fur, these people were bound to feel a need for stripping off the bear skin and "hanging it up on a nail." This was already welcome for reasons of perspiration and above all for reasons of relief: it was as if a big load had fallen from these fellows' shoulders, which they had been compelled to drag around long enough outdoors on their two legs (for they no longer had four, like Mr. Bear, for easing the burden).

When the Eskimo, this last "ice-age man" of our days (purely technically speaking), moves over his fields of snow, he sticks in his fur like a turtle in its shell. But when he crawls into his heated hut, the first thing he does is to throw off all this ballast. Man as well as woman, child and maiden lead the life of naked savages in there.

Now imagine yourself back in the beginnings of a really colder age. You do not need to think at once of a genuine ice-age. Simply assume that the old Tertiary tropical days cool down to the present-day climate of Central Europe, which in any event must in the second half of the Tertiary have preceded the actual

ice-age as a very slow transition. Your primitive men plunge into their rocky lair. The artificial furs are cast off. But in this case, the naked Eskimo of to-day would not yet emerge out of the casing; it would still be man with the old monkey fur grown fast on his body. This fur now becomes a vexatious, superfluous addition in here, which they would be better off without. This is not even the price paid for its being indispensable out of doors as woollen underwear under the hunting fur. The fur of an animal which is artificially pulled over the body and can even be doubled is quite sufficient. The woollen underwear of the skin simply increases the total weight. At the same time it checks the perspiration of the skin. And one thing more is certain: it forms a truly diabolical protective soil for vermin, which now find an all too ideal sanctuary in the wool of the body, in the tunnel between human skin and bear skin.

You know how the plague of fleas and lice has grown to be a veritable vital question in the whole haired mammalian world. One can almost say of the monkey that it exhausts one-third of all its vital energy in hunting these little monsters. And even the sparse remnants of hair which man has managed to salvage to-day still afford an adequate conception of what rôle the problem of lice must once upon a time have played among us.

The fact is extremely interesting even that in the midst of our European and timidly clothed civilization the human body still continues occasionally to harbour a louse which with fixed sympathy and antipathy scorns the exposed hair of the head and obstinately feels at home in the rest of the body's larger remnants of hair. I mean the much-scorned crab-louse. If you regard the hair under the arm-pits and over the organs of mixed love as the last remnants, somehow preserved (we shall discuss that later) of the body's old fur, which continued to exist during a transition period under the first clothing, you would have in this tenacious crab-louse, which has a predilection for lodging there, the last of the Mohegans of that phantom crew which once upon a time made man want to jump out of his skin because he could not stand it any more inside it. Just as the last of the duckbills, kiwis, rhynchocephalian lizards and giant turtles of primeval times have everywhere withdrawn to islands of the ocean to-day, after the ground had sunk beneath their feet everywhere else, so does this louse in the islands of hair at your arm-pits and private parts

to-day inhabit only the last cliffs, as it were, which remain in the open sea of your nakedness. And this historical consideration may even confer a certain fascination upon a little animal which otherwise has experienced the strange, almost unique fate of being looked at in a moral light by man and having the red brand of immorality placed upon it.

Under these circumstances, the rubbing off process which in first line restricted one's own crop of hair at least somewhat, must have been hailed as a conscious gain from the start. Nakedness bobbed up as something useful and desirable; the more the better.

To put it in the strongest terms, nakedness became a utilitarian ideal.

And so we now actually have the first indication of what we so greatly missed in our network of thought above: a practical advantage of increasing nakedness, which as such was for the present still absolutely independent of all things æsthetic and erotic.

Nakedness desired because of its sheer advantage in the struggle for existence.

Man wished it from now on, but that does not yet say that he could attain it. He first set to work and helped out the purely mechanical, automatic rubbing off process by the use of implements; he shore himself artificially. To-day we still frequently encounter the custom among savages of not merely shaving off the eyelashes, the beard, and the hair at the private parts and at the arm-pits but even of tearing it out, with the utmost ingenuity, hair by hair. Among the naked Bakairi Indians of Central Brazil, very little children already have their eyelashes plucked out systematically, and in the case of both youths and maidens, the hair of the pubes is extirpated to the last little root, as if it were something very sinful and immoral. But despite all that (and how very ancient may such customs be) the children keep coming into the world with eyelashes, and the very duty of having to weed at puberty proves the ever renewed fertility of the field. It is the same way with other hirsute matters. The tonsure, which is likewise an old favourite custom among these Indians and one which the pious Jesuit father does not first have to bring to them, must be made anew in every generation; it is not transmitted by heredity. From hoary days of antiquity, the Jews (along with so many other peoples) have been indulging in circumcision, but still there are no absolutely irreproachable statistics available to

show that an increasing percentage of Jewish children are born without foreskins on that account.

It seems as if Nature's resistance against the all too willing "inheritance of acquired characteristics," which we discussed at length before shows itself here. I emphasized at the time that it seemed to me the absolute impossibility of such inheritance had not been proved, and that for many reasons it seemed improbable to me that it was impossible. But that something must work actively against the possibility in many cases is incontestable in the face of the facts.

And so it could be imagined that those prehistoric hairy human beings in their cave had shaved off and plucked out almost all the hair of their body during many thousands of years, and yet that it might have done no good, just because it was too crude a method, with which heredity would have nothing to do.

But as a matter of fact you can leave artificial shaving, constituting an act of the human will, entirely out of the question as a direct cause of really becoming naked, and yet you will immediately see the factor which hits in at this point, and which was bound to turn the trick.

By the simple rubbing off of the hair beneath the clothing, and even more as a result of cutting it short, to say nothing of plucking it out, a thing became more and more exposed and visible in the several individuals which until then had been practically a secret to human eyes, namely the real, plastic outline of the human body.

More specifically, it became visible in an effect of contrast; outside, the human being, disguised in fur like an Eskimo, as formless as possible. Inside, around the fire of the hearth, the human being as plastically articulated as possible. Outdoors, fur as the ideal; indoors, furlessness.

Undoubtedly, the contrast was already felt while man's own monkey hair was still coming out after the bear skin was shed: compared to an Eskimo who is all bundled up and disguised in furs of animals, a hairy chimpanzee, say, is still a good bit more plastic, and more naked in outline, as it were. But backs, shoulders, thighs and breasts rubbed bare now emerged out of the fur at home. And in between, there were figures which were entirely shorn and even plucked. Clean foundation skin in its greatest extent appeared for the first time in the case of the latter, even though at first only in the case of individuals as an individual product of art and not as something inborn.

These skin surfaces, once they made their appearance, permitted a variety of things, quite apart from the greater ease of catching vermin. They could be rubbed with fat. And what was more, they could be painted beautifully red.

Now watch out, for here is where the knot is tied. Where did our brother of the cold love? Quite unambiguously not when he went hunting outdoors in his bear skin, but at home around the fire. At home, when the fur was "hung up" and nakedness was trump.

The only body which the eyes of love looked upon was the body which kept emerging more and more plastically!

When the alien fur fell and the naked body revealed itself, this uncovering was not always merely for purposes of utility, but at definite erotic times it was a proffer of love's body as well. But when for reasons of utility this uncovered body at the same time offered itself in an ever more hairless condition, more and more scoured off, shorn, shaven and plucked, it was perfectly obvious that nakedness would now definitely get into the erotic-æsthetic element's field of vision as well. Erotic predilection became amalgamated with this: what was most beautiful was the thing most to be desired in the eyes of choosing love. When the artificial covering fell and the human being became visible as an object of love, the one who was the most naked was the dearest. In addition to the outline of the form, the possibility of that old animal means of attraction now appeared with real nakedness. Loud, gay colouring, immediately made its appearance in the case of the human being who used implements, in the form of "painting," which was a gift of the mastery over the implement.

Consider what a radical force necessarily came into the whole matter now as a positive factor when the erotic element mixed in. The whole bird of paradise motive came along after all, and strictly concentrated on nakedness at that.

The thickness of the hair undoubtedly varied in the various individuals, as with all characteristics of this sort. Some were more hairy, and others who were less hairy appeared as exceptions. Think of the differences in man's remnants of hair even to-day: here you have a man with a black growth covering half his body and a blue beard which keeps on sprouting eternally and which no razor can dam up, and there you have a milk-white body which is almost hairless to the eye, with hardly a few stubbles of beard as long as the man lives. If you feel like it, you can credit to the

account of the appearance of scantily haired humans at that time whatever the inheritance of scouring off and shaving might actually have contributed during an endless course of time: in any event, it would not have expressed itself otherwise than in somewhat of an increase in this thin-haired variation. But that is immaterial. If merely the usual percentage "also ran," if now and again a human being having thinner hair from childhood kept on being among those present, this human now enjoyed precedence over all that were shorn and plucked, as soon as the eyes of love were aimed at "naked." This human being was "more beautiful" than the others of his kind, in all the red illumination of love implied in this little word "beautiful" as we know it from the mandrill and the bird of paradise. It is thinkable that the mother already showed her preference for minimum hairiness in the case of the new-born child. For we are looking into an age when deformed children were certainly frequently killed, and selection according to the taste of the parents could play a rôle directly here. Remember the story of Rebekah who loves Jacob who is "smooth," more than she does "hairy" Esau!

Be that as it may, the machine now started going in a way not to be stopped; the same machine which, whether it makes bird of paradise tails or the reverse Aurora Borealis of a monkey, must rear up "more beautiful races" with the aid of love itself every time, once the idea "beautiful" has in any way entered into the taste of those in question who are doing the choosing. The youth whom nature had already made the more naked found more grace in the eyes of the girls, and the girl who was naturally nakedest was the one who most easily found a man. And now simple heredity forced nakedness through with certainty in the course of what was by no means such a long series of procreations, births, renewed selections of the least hairy and so on: a race originated which kept on being more and more hairless until the peak where finally all that were born were practically naked.

Here you clearly see the thread which unrolled so infinitely often in the higher evolution of the universe.

Without having any interest of its own therein, a utilitarian ideal in the struggle for existence uncovers and liberates a prettier rhythmic relation, an æsthetic ideal as an incidental matter; in this case the naked body. As soon as it exists, the rhythmic sense turns to it with instinctive sureness as the more pleasing thing. Then an erotic

ideal mixes into the matter: the eye, choosing for purposes of love, relieved from the burden of the struggle for existence and accessible to all finer stirrings, makes a higher practice of choosing what is most pleasing for the purpose of fastening the bonds of the love-individual. The æsthetic ideal now becomes reality by way of love; it sinks into the deepest mystery of the process of procreation and then it climbs up in a way not to be stopped on this golden ladder in evolution, to where the ideal finally appears to desire as fulfilment, and joy in the beautiful appears as an ever more æsthetic world.

All that is necessary is for you to admit the existence of the "rhythmic sense" as an attribute of the soul and in addition certain physical, rhythmic fundamental tendencies in nature. In this case a sense in man for the greater rhythmic agreeableness of the naked, gaily painted body from the moment that it stood as a given contrast beside the formless body swathed in fur. And in this body itself, certain conditions which worked rhythmically and which became liberated and active the moment the alien fur and its own fur took the cover off.

You need not have any undue fear about the "conscious element" in this process in the case of Tertiary man. In a certain sense we are certainly in the sphere of "consciousness" now. But if the thought of the mental process: "I find it beautiful, therefore I choose this which is most beautiful for my love," which is perhaps still too lofty for primitive man, makes you shudder, take note that here as well you cannot possibly conceive this rhythmic sense, the "I find it beautiful" to be too instinctively intuitive. You do not need to think of the least little iota of reflection taking place either, just as little as the savage to-day "thinks" when he grabs for the blue beads instead of the white ones or as little as a child "thinks" when it stares for hours with wrapped attention into the changing rhythmic pieces of coloured glass in its kaleidoscope. It was for this very reason that I coined the word "rhythmotropism," clumsy as it is, because it is meant to express the positively plantlike character of the rhythmic tendency within the soul element. Just as a root follows its geotropism and grows perpendicular to gravity, so does this inclination make its appearance in exactly the same instinctive, compulsory fashion toward what is more rhythmic, more effective æsthetically.

And so one fine day it was human nakedness which formed the magnet in the æsthetic compass. It was not long before love had definitely fixed it. Now it was permanently in the world, beyond the æsthetic element as well; a fact which again kicked up waves of its own.

§ 6

Once we have gotten this far in theory, the question becomes important why the victory of hair removal was not complete after all?

There's the hair on your head. And the hair at your arm-pits and the hair at the organ of mixed love sprouts just at the very time of love, which was supposed to have removed man's hair. In the case of a youth, you have the hair of the beard in addition.

What is that for? It surely could not have survived out of affectionate regard for the crab-louse and the head-louse. Let us commence with what seems quite the queerest thing of all, the hair at the arm-pits and the hair of the pubes.

By its belated appearance in the male as well as the female just at puberty, of all times, this hair betrays an unambiguous connection with love-life, the very factor which according to our deductions above was supposed to have removed our hair.

But this time the connection is obviously of a totally different kind from what is the case with the rest of the hair. The case occurs with vast frequency in the animal world that some physical formation or other sleeps, as it were, until puberty arrives. Many animals only take on their full and proper colouring and acquire horns and antlers and what not in the way of vigorous and ornamental badges when the first period of sexual excitement approaches. You also very frequently have the case that in the course of a longer individual life certain gorgeous colours and attachments are developed anew at each period of sexual excitement only, and that they almost or entirely cease to exist during the intervals which are poor in love. You observe this periodic alternation particularly among fishes, salamanders and birds. Birds develop magnificent plumes when in love; afterwards they moult until they are hardly recognizable. We happened to encounter this once before in the case of the birds of paradise. In the latter cases, one speaks zoologically of "wedding-dress." Mostly, and in the latter illustrations throughout, the connection of these colours, forms and organs with the purposes of love-life is distinct enough. Essentially they have solely a mating purpose, an erotic purpose. In this sense, from general natural selection of what is fitted for the purpose you can

quite well understand the trick which nature has put over in this matter. Something which has a purpose only for a certain period or periods in life, but which at other times would be only ballast or be unsuitable to the end in view even, is brought out only for this appointed time. Here natural selection has about achieved with the organ what otherwise remains reserved exclusively for the implement: it makes the animal develop something only then or from then on when it becomes absolutely necessary. Assuredly it required many moves on evolution's part to put such an ingenious matter through in urgent cases. But without a doubt it succeeded in many diverse forms.

And our human hair of the pubes and at the arm-pits quite obviously touches on something of the kind. Normally it invariably first makes its appearance at puberty and has the closest connection with the perfect adjustment of the sexual organs for love. In our case it appears once for all in that form at puberty and then remains. It is therefore not a real periodically alternating dress for periods of sexual excitement nor a wedding-dress; but you know that the human being is quite generally in the singular condition of no longer having sharply marked periods of heat at all (particularly in the case of the man) and at the most they are still indicated only by very rudimentary remnants; the human being is permanently mature for love during a certain great peak period of life lasting for many years. According to their origin, some direct connection with active love-life still lurks in this mysterious hair of ours. You have the feeling that it was already something special within man's original fur from the beginning. A special piece of sexual fur. That it always grew out only at sexual maturity when man still wore fur all over, and that it was specialized for some express purpose of love. When the general process of hair removal began, successfully crowding back the rest of the old mammalian hair except in the embryo, this process was powerless here. The special belated love-hair at the sexually mature organs of generation and at the arm-pits persisted now as before for the sake of its special purpose which could not be dispensed with.

Deduced purely from the matter itself, the theory so far is decidedly graphic and unconstrained. If they had to remain, the little islands at the arm-pits and genitals did not disturb the great purpose of hair removal much; at most, they still afforded a sanctuary to the crab-louse which otherwise had been shooed away. But what

the theory absolutely requires is a statement as to the special erotic purpose of this hair from the beginning. Does this purpose still hold good to-day and is it just as simple to read off as the general connection from the temporal development of this hair only at puberty? Or has the purpose expired to-day, so that this hair is only a rudiment, a relic of heredity? In any event, it must still have held good at the time when the rest of the hair removal took place.

Permit me to make a little digression again at this point. The reason will become clear to you.

A dainty animal, the musk-deer, conceals itself behind lichen-covered logs in the gloomy mountain forests of Central Asia extending from the Tibetan side of the Himalayas far into China and Siberia.

It is not quite a genuine deer to-day, but even less an antelope or a wild goat. It belongs to a very ancient remnant of interesting transition animals which once upon a time laid the dawning foundations within that race of many shapes, the ruminants, for the series of deer which was subsequently to become so imposing. It is a forerunner of the deer, still without any trace of antlers.

The musk-deer has an extremely singular connection with us through its love. The Chinese were the first to flirt with it, whereupon the whole civilized world gradually followed suit. The little word "musk" comprises the connection.

When the Asiatic hunter stalks this shy game in his native fir forest, he recognizes it not merely by its extremely characteristic tracks but also from far off by its smell, if it happens to be a buck in love-time.

It is the same penetrating odour which streams toward the visitor in those metropolitan haunts of night life where human prostitution goes out hunting love in its own strange fashion. The substance is the identical one here as there: the base of our musk perfumes is taken directly from the male musk-deer, if it has not been adulterated.

But the purpose is likewise identical. The prostitute of our civilization wants to produce a certain sensually inciting, sexually exciting effect on the man with her perfume which is laid on loud. The male musk-deer in its sacred forests attracts and excites its female with it as a natural perfume. The only difference is that the musk-deer's moral purpose is the higher one.

The source of the odour and the original source of the whole human musk industry is a little bag between the musk buck's navel and genitals, into which the musk substance is emptied by several glands at love-time like a natural fine perfumed ointment. The scent-jar that is grown fast naturally has its outlets toward the belly, where the fine odoriferous substance can pour down freely on tufts of hair and be wafted to the nose of the female. If several suitors get into competition with their odour, a coarser means has to help out: the musk buck's canine teeth stick out of its mouth like little boar's tusks bent downward, and with these the monopoly of love must be gained in chivalrous fashion by fighting, with bloody cuts and scratches if need be.

The amorous musk-deer's aromatic magic is extremely instructive. It points to the giant sphere of effects of distance-love produced by characteristic smells which excite the senses.

Scent quite generally has been one of nature's oldest and most successful means for bringing about mutual understanding. A message sent by scent has something of an advantage over one sent by light, through the eyes, for it can be transmitted in pitch darkness. Furthermore, as I said once before, scent has an extremely intensive effect on the imagination, whose psychological reasons are somewhat dark to me at present but which you can constantly experience in yourself. An odour which you were once accustomed to smell somewhere makes recollections shoot up with unheard of plasticity; a room, a house, a family, a woman, they stand before you bodily as if by sorcery. Moreover, scent is capable of great spacial extension, at times much further than limited vision would carry. You find this to be the case with the musk-deer in its forest full of trees and rocks that are closely crowded together. When a ship approaches the island of Corsica, the scent of certain herbs along the shore, the so-called "maquis" (rosemary and others) reaches over like a tangible hand, even though the entire silhouette of land still lies wrapped in blue clouds.

You already have an initial exploitation of the matter in the case of these stupefyingly fragrant flowers. What strands and nets are there in nature which are not turned to account somehow or other! The delicious heavy scents of a garden abounding in flowers, which have a narcotic effect on human beings like a voluptuous sensual dream, heliotrope and honeysuckle, carnations and hyacinths and tulips, they all serve the plant's great game of alluring the insect

which must consummate its fertilization. These scents are erotic means of attraction, even though of an indirect sort since at the same time they are the bouquet of the wine in the inn which is open free of charge to the insect customers. It is a singular fact that these plant scents, which are exhaled by flowers, in other words by the plant's sexual parts, in many cases have a striking similarity to an express human sexual scent, namely the bouquet of male semen. This kinship is already noticeable in the honeysuckle but reaches its climax in the flower of the sweet chestnut. At places where the chestnut flourishes in large numbers, the air is literally pregnant with the perfume of male semen when the sweet chestnut is in bloom.

The reverse of this is the fact that there are also flower scents which do not strike us as either agreeable or sensually exciting but which simply smell abominably to our noses. You must bear in mind that the flower does not merely want to edify the insects æsthetically and erotically but that strictly speaking it wants to invite the insect to dinner. The insect becomes the flower's involuntary messenger of love only as a patron of the inn does. And so for certain customers with coarser tastes things having a much heartier aroma were tried out as a sign to allure them, somewhat in the Limburger cheese sense. The taste of many insects, especially flies, goes even beyond genuine Limburger cheese. Nothing short of rotten meat will suit them. And so a large number of plants do their duty and smell of that. Among these is the largest flower in the world, the huge rafflesia in the jungles of Sumatra, whose flower is three feet in circumference and not only smells like a rag of rotting elephant meat but looks like it.

It is but a short step from here to plants and animals which develop beastly, horrible smells no longer for the purpose of alluring but for the purpose of defending themselves. The intolerable garlic smell of certain toads is a weapon of this kind. I remember the veritable bottomless pit that breathed on me out of a botanizing-box in which a dozen small and otherwise so dainty bombardiers had been carried for an hour. And the skunk, a kind of marten, notoriously squirts a juice out of a gland, as in the case of the musk-deer, which literally smells to heaven, compelling man to go into naked solitary confinement and rendering his clothing unserviceable for ever.

But let us just keep to the line of love-scents. You see agreeable

scent completely in the service of distance-love in the animal kingdom, infinitely more directly so than in the case of the plant. Here the sexes seek and excite one another directly by the smell that pours forth. There are certain insects on whose flower hunting propensities these flowers speculate with a delicate aroma and not with Limburger cheese, whose olfactory æstheticism must therefore obviously be a noble one related to ours.

These are the butterflies.

Sometimes it is the female which pours out its delicate but obviously highly characteristic scent over incredibly great distances till the males come swarming along from all sides, madly in love. And then again it is the male from which an intensive breath of love emanates, so strong that even the very much coarser nose of man perceives it.

The fact has long been known to collectors that a single captured female butterfly placed in the open where it can pour out its scent freely suffices literally to sift heaps of widely scattered males of the same variety out of the surroundings as a drag-net sifts the fish out of a pond. August Weismann, one of the most accurate observers, exposed a female of the beautiful, silky, gay nocturnal peacock-butterfly for nine nights at an open window in a little gauze box through which the air roamed freely. During these nine nights no less than forty-two males of this peacock-butterfly variety turned up; a positively incredible number in view of the fact that this butterfly is by no means one of the ordinary kinds which appear in crowds.

The perceiving organs of smell, the "noses" of these night-prowling butterflies, are in the antennæ, and in this case the feelers of the males which clearly smell so sensitively are much bigger and are constructed much more intricately throughout than those of the females. It is not known to this day where Madam Peacock-butterfly wears her perfume apparatus, but it is probable that the scent simultaneously pours out of all the delicate scales on the wings and the body. Weismann has pointed out that all these tiny scales are connected with the living cells of the skin. But in any event the magic of this particular scent is so subtle that despite all attempts with the female butterfly our human nose has never been able to smell it. And yet it exerts such an incredible long-distance effect on the antennal noses of the infatuated night-butterfly males! Weismann's experiment took place in the city. What a symphony

of smells is the atmosphere of a city! And yet the chemistry of the night-butterfly's nose for love reacts to the wave of only a single substance, the delicate, ethereal scent whose circles of waves extend into the distance over gardens and the sea of houses from the sexually excited female on the scientist's solitary window-sill.

Conversely, the scent of the males is much cruder among the night- and the day-butterflies. It obviously is calculated less for longing, long-distance wooing and more for direct excitement of sensuality in the battle of love at close range to the female.

In this case it is possible for our human nose to smell the loud scent of sexual excitement with a vengeance. The giant convolvulus hawk-moth of our sultry summer evenings was the first to attract the attention of collectors by its veritably wild odour of musk, strangely enough this same aroma which recurs in the crocodile, in the musk-deer, in human artificial perfume and elsewhere as a "sensual bouquet"!

Once one had gotten on the track of the matter, the actual "scent organs" were happily discovered in this male case. Here, too, volatile essential oils which are produced directly by the cells of the skin form the real base of the scent. Certain scales on the wings or the hind part of the body expressly contrived for the purpose serve for these oils to flow off rapidly and be broadcasted properly and efficiently as scent.

You know how the magnificent coloured patterns on a butterfly's wing are produced. In all these coloured varieties, a compact layer of tiny scales, placed like tiles on a roof, covers the wing like a fine deposit of dust. If you scrape it off, the actual groundwork of the wing beneath shows up naked and clear as glass, like the wing of a dragon-fly or a fly. Every one of these little scales is a tiny little feather on the skin. Variously coloured, as an ordered whole they produce the glorious picture of the gay butterfly's wing. Such scales, particularly adapted for the purpose at certain places, work not only as painters but also as perfumers to Mr. Butterfly. They have literally been baptized "scent scales." They have multifarious forms under a magnifying glass. Now they look like a small, roundish palm-leaf fan and again they are thin like a real hair. But invariably the volatile aromatic essence flows from the actual living skin into this fan or this hair and then evaporates through the tiniest of pores on the scaly surface or from outspread tufts of fringe at the lacelike edge of the wing.

Fritz Müller, in Brazil, was the first to discover these scent scales and scent hairs. Now that he has discovered this, every one can easily imitate him by an experiment.

That excellent scientist, August Weismann, who has carried on the research in this field in the most exact manner, says:

"One can convince oneself as to the correctness of his observations with several of our butterflies, by rubbing one's finger over the wing of a freshly captured male cabbage-butterfly (*Pieris napis*). Your finger becomes covered with fine, white dust, the scales on the wing which have been scraped off, and smells very delicately of essence of lemon or melissa-oil, proof that the aromatic substance clings to the scales." Like our dainty, universally known blue argus-butterflies this cabbage-butterfly has its tiny little scent scales arranged over the entire upper surface of the wing between the big white or blue colour scales. "In the case of many other day-butterflies and likewise night-butterflies the aromatic scales are united into tufts and localized at particular places. They frequently form larger spots, bands or brushes which are easily visible to the naked eye. Thus the males of our various sorts of argus-butterflies (satyrs) have velvety black spots on the front wings while the fritillary (*Argynnis paphia*) shows four broad, coal-black strokes on four longitudinal ribs of the front wing, which the female lacks, and which are composed of hundreds of scent scales; certain large butterflies of South American forests similar to our purple emperor have a thick yellow brush which can be spread apart, composed of vivid yellow, long scent scales, in the middle of the magnificent iridescent green hind-wing, and a very similar condition exists in the case of the beautiful violet butterfly of the Malay Islands, the *Zeuxidia wallacei*. Among many Danaidians the scent apparatus has become still more perfected by being sunk in a fairly deep pocket in the hind-wings in which the hair-shaped scales which produce the scent continue to lie concealed until the butterfly wants to make the scent pour out. Among many South American and Indian varieties of the papilio the scent hairs are arranged to form a kind of mane and are located in an envelope on the edge of the hind-wing, etc. There is an exceedingly great variety of these devices and they are found widely distributed among day- as well as night-butterflies, among the latter sometimes in the form of thick, shining white felt, which fills an envelope at the edge of the hind-wing. In many cases

the scent can be saved up in that way and then can be made to pour forth by suddenly turning over the fold of the wing."

I cannot get the supposition out of my head that a kindred, primeval connection with scents having an erotic effect may lurk in our human hair at the arm-pits and genitals.

What if these hairs had continued to be preserved because during a long period of time they had to serve quite similarly to the little scent taps of the butterflies as agencies for scattering and dispersing certain alluring smells peculiar to love-time?

There is no doubt that the odour of the region around the arm-pits still exerts a certain erotic effect to-day. Above all, the smell of the male on the female. For the rest, it is hard to draw any conclusions in this whole field from present-day conditions because no doubt of any kind exists that man's sense of smell has greatly degenerated, decayed and become dull, and entirely so in the case of the civilized human being. Moreover, these erotic sensations of smell were in particular killed off by the use of barbarously strong artificial perfumes which drowned everything of an individual character during thousands of years. But there is no reason of any kind on deck for postulating similar weakness offhand for the days of primitive man.

Man ascended from the mammal, in which erotic effects of scents are everywhere at the top of their form. Smell is literally developed as a language in the dog. When dog meets dog, it is the decisive factor for sympathy and antipathy. Here the old roads separate—whether to eat or to love. Two dogs sniff at one another and directly the decision is reached: mad biting or the tail-wagging approach of friendship, of love. This language of scent is in particular the language of love in this case. The sheer struggle for existence helped along and worked to bring about the great development of the faculty of smell. To the animal which went hunting it afforded a possibility of getting wind of the hunted animal's track or scenting dead game from afar, and conversely it already gave a long-distance indication of the beast of prey's proximity to the hunted animal. But probably love had already seized on this very much earlier, probably in part for the purpose of finding, but then likewise for the purpose of direct sexual excitement, as an individual mark of identification quite in the same sense as the other attractions of the lovers. This would have been a queer world if

something in the way of a musk-deer disposition had not been passed on to primitive man as well.

What if certain hairs on man's body had developed into special agencies for scattering scent, into scent brushes, over parts of the body giving off a particularly strong erotic scent?

It would have been the most obvious thing for these hairs in contrast to the others to sprout only at puberty. To be sure, we would here have an attribute in original man, who was still covered with fur, which is not known in the case of any living mammals of a monkey sort. No other mammal exists which has hair at the armpits and on the private parts in the real human sense.

When I first evolved this hypothesis many years ago, I did not know that powerful confirmation of it would come from the ranks of the mammals. The bats, a very ancient and remarkable group of mammals, in many cases still have special scent apparatuses for sexual purposes, in which the scent likewise streams off on special "scent hairs." Strong-smelling essences are secreted by special glands like little pockets of skin on the most diverse parts of the body, the face, the breast, the nape of the neck and the sexual parts in the case of these fluttering animals. Since this formation appears only in the male in many varieties, there can be no doubt that a special scent for attracting or exciting the female during the breeding season is involved, the same thing in principle as in the case of the musk-deer. The interesting thing, however, is that these amorous bats' little boxes of patchouli are frequently in direct connection with little fields of hair which unambiguously stand out from the rest of the fur as something special. In the so-called horseshoe-bat, hideous flutterers characterized by grotesque, mask-like topknots of skin on the nose, a special brush grows directly in the bottom of a scent pocket behind the fold on the nose, and it can be pushed out with the bottom of the gland in case of excitement and then it functions exactly like the agencies for scattering scent in butterflies. Among flying-dogs, which are large fruit-eating bats of the tropics, the perfume boxes are placed like knapsacks behind their shoulders and special tufts of hair, whose particular yellow colour visibly shows off against the rest of the fur, are placed on them like broad shoulder-straps, undoubtedly serving as scent brushes as well. Since a tendency to very great nakedness now and again appears among bats, you have all the ingredients here for the origin of man's special hair, gathered together within the mammals.

Bats are insect-eating animals of the hedgehog type, in whose immediate vicinity part of our human genealogical tree passed, and in other respects they have a couple of fine traits which almost give them something of a character of little homunculi. But you do not have to think of direct kinship in order to say to yourself that what was possible with the bat could at least equally well happen in the case of man, if the situation were favourable.

In this connection I am thinking quite particularly of that "sanctuary period" in man's origin. On the one hand, this would have been a time of greatly intensified love-life, and on the other hand (closely connected therewith), a school for fine excitements of the senses, to which smells undoubtedly belong. Man had about passed through the line (extreme in the monkey) of the evolution of skull and brain, which caused the organ of smell to be somewhat relegated to the background; but that man was not yet dulled for stimuli of smell on that account is sufficiently proved by his subsequent love for alien perfumes which no doubt made man duller for perceiving his own scents later on but which was likewise based on the hunger of the nose. As man who was coming into existence in his sanctuary, far from the monkey, probably reached back to the old sense for adornment, colours and æsthetic games which the bird of paradise had, so he likewise may well have bred out in himself something similar to the scent brushes of amorous butterflies and bats.

And that would have continued for a long, long while. When the process of removing the rest of man's hair set in energetically, the rôle of these erotic scent brushes, which sprouted only at love's maturity, remained untouched. And this proved particularly the case during the time when unclothed man, perspiring powerfully at home, became erotic man. There was a certain language of scents at particular parts of the body. It was possible to differentiate the boy from the sexually mature man and the mature man in turn from the old man, and likewise the man who was erotically stronger from the weaker one by it, and the corresponding phases in the female. Amorous desire and amorous indifference expressed themselves without words in it and yet with absolute clearness. There was no need of any kind for shaving off this hair. On the contrary, it continued to be bred by constant selection of the most effective scent brushes in the act of love, until finally the use of alien perfumes intervened. This explains why savages to-day can practise a ruthless weeding out process at these places and why the odoriferous attrac-

tion of these gardens of love has been reduced to a minimum for our civilized noses, whereby this hair has more or less entered the stadium of rudimentary organs.

That we too are still not minded wholly to renounce erotic smells is proved now as before by the very fact that under crude conditions the civilized female of to-day still continues to surround herself with an atmosphere of musk and that she therefore puts a lower mammal's erotic means of attraction on her human body again. But the very fact of resorting to such an ostentatious love-scent at the same time betrays how the human sense for these things has run to seed. It may be that as civilization increased man no longer needed scent. Spoken language, an improved play of the features and kindred things offered a better substitute. Many other factors may have played into it, which later became connected with wearing clothes at home and going naked again out of doors in warmer times and lands (we shall discuss that later), concealing the genitals for reasons of modesty and so on. Among people who hunted, the decay of the nose's fine sensitiveness was in part due to an entirely chance circumstance: man accustomed himself to the use of a living implement which took the burden of scenting game from his nose; that was the dog. Jackals and small wolves undoubtedly joined man at a very early stage as involuntary companions in the search for game. And finally he learned to exploit their far superior power of scent. From that point on things happened as everywhere: the implement (a living one in this case, which he mastered like any dead one) caused the organ itself to depreciate from the height of excellence with which it had been originally endowed in man. Once the human nose had relied on the dog's nose for thousands of years, it became dulled to the point where it simply could not perform the trick any more. And that as a matter of course played into love as well.

There is much less to be said and reasoned out about the hair of the head.

Darwin has already demonstrated convincingly that the male beard is an ornamental badge which played a rôle in sexual selection long before the removal of man's fur and which was bred in one-sided fashion. For it is a favourite badge of male mammals otherwise, particularly among the monkeys where the most beautiful waving beards as well as moustaches existed long ago. You only need to leave primitive man this monkey taste and even on the

nakedest body his male beard would remain thrice holy to the primitive girl as well as all subsequent choosing girls as a thing which was not to be monkeyed with. Shaving was probably invented only very much later and to this day it never has really prevailed among vigorous civilized human beings. But the beard need never have been an erotic scent pencil on that account: it was essentially an erotic affair of the eye from animal days.

It seems to me that both motives, pure utility and the erotic element, played in together to a certain extent in the case of the hair on the head. The fact that it already makes its appearance in the child indicates that merely erotic reasons could never have been decisive. The human head occupies a very special position. On the one hand it can endure a good deal of cold without much trouble when the rest of the body is warm. And conversely it seems to be important for it not to be burdened unduly with things on it, and for its exhalations not to be checked. Taken together, this might have furnished the utilitarian reasons for the hair being preserved here. I can picture the body of primitive man already wrapped up tightly in artificial furs and yet with the head merely protected by its natural hair, perhaps under a light cap. But it is just as certain that the erotic element played a part as well. Proof of this in first line is the length of woman's hair, which was surely bred by love-selection. The healthy female hair, which is not drugged with perfume, continues to be a source of extremely singular scent effects to-day, desperately difficult and almost impossible to describe exactly for the sole reason that our civilized languages literally lack the crudest terminology for characterizing subtle distinctions of smell. That a very special fragrance streams forth from a woman's hair at the moment of extreme erotic enjoyment in the sexual act is an experience which I am probably not the only one to have had. But I do not dare to make a sure comparison, although it obviously does not seem to involve an actual individual bouquet but (naturally apart from its strength) a very general fragrance ever recurring in similar form. Undoubtedly the hair on woman's head had a powerful significance in times when genuine and not borrowed erotic scents played a rôle. And probably a whole wreath of the most diverse causes co-operated to preserve this truly glorious permanent human possession, which nobody can deny on seeing the magnificent tresses of a sunny flower of young womanhood.

Up to this point matters connect up quite smoothly in theory. But in this connection you must bear one thing in mind.

One must necessarily think of a second book, Exodus, which will not seem so evident to everybody, being connected with this Genesis, from which human nakedness emerges so prettily.

We have vast regions on earth to-day, above all in the tropics, which are filled with human beings who possess no monkey fur of any kind and yet do not wrap themselves in furs. Naked human beings who actually do go around naked outside of their huts as well. They have no opposition between indoors and outdoors in the sense of being unclothed and artificially furred. If you want to carry out the theory really soundly, you must assume that all these naked races of to-day as well are descendants of primitive races which once upon a time went clothed because of the cold and who have lost fur grown on their bodies by reason of this clothing. The naked savage of to-day with no hair on his body would not be an original stage, but a second, subsequent stage.

He would be the human being who originally went clothed and lost his hair under his clothing, subsequently migrating southward into warmer regions and now permanently removing this artificial fur as well, and going naked. All human beings dwelling on earth to-day would have to be without exception descendants of such men who somehow and at some time had gone through the school of falling temperature. For all of them have their hair removed and if this could happen only there, then obviously they must all have been among those present, too.

I cheerfully admit that this corollary theory has at times struck me as so thought-provoking that I felt inclined to sacrifice my whole theory of hair removal. But in the end the thought which in the beginning oppressed me like a nightmare kept on losing more and more of its monstrous character for me. Till I finally said to myself: well, why not?

If you look at the customs and habits of our so-called primitive races it does not appear so singular at all to think that these might

be the products of extremely complex old evolutions, transformations, displacements and degenerations of all sorts. Naturally I do not want to sponsor a theory of original human wisdom, as if all naked primitive races were products of degeneration of what was once an enormously high general culture in unknown mythical remote antiquity. But I believe that one can take such a simple step without much trouble and imagine that the naked savage of to-day is not naked because he does not know clothing as yet but that he is naked because he has forgotten how to dress himself. I should like to include clothing among the very simplest and first inventions of man. But just as little as this invention was a very great one, just as little does going unclothed again need to be a particularly great act of degeneration. It no doubt was only one among many which these primitive races underwent in the course of their migrations.

The essential question is whether we want to assume that, historically speaking, all human races migrated downward from a zone in the northern hemisphere, where the climate had long been getting colder and finally reached its climax in the ice-age.

We must hold fast to the fact that man must have originated at some localized place on earth, the greater probability being in the northern hemisphere. If the sanctuary theory is right, very strict localization must have continued for a very long period of time. The first third of the Tertiary already offers an enormous amount of temporal elbow-room. Then the first great emigration of these sanctuary men over vast regions of the earth, southward as well, might have begun in the warm part of the Tertiary. That would about correspond to the eolithic finds of the middle Tertiary. From then until the beginning of the actual ice-ages is a further enormous period of time—the whole pliocene age with its very slowly sinking climate. In the north, the process of the removal of man's hair would fall within this age, providing you do not want to assume that local cooling off took place still earlier as a result of mountains forming in the middle Tertiary. Simultaneously a first difference between human races, indicated in the skull, must have developed increasingly, finding expression, for example, in the existence of the old diluvial Neanderthal man; but perhaps the ancestors of the present-day Australians and others already originated then.

Nothing can be brought up in principle against the assumption

that this new racial thrust first took place in the north and that all those participating in it fell victim to the hair removal process as the temperature dropped. Only when the temperature went down still further did a strong tide set in toward the south, races which already had their hair removed now evolving into the racial stocks which later became naked savages. The Neanderthal man happened to constitute a last form of that kind, somewhat crowded off to one side, having a particularly primitive structure of the body but likewise with the hair already removed and persisting far into the ice-age. At the same time the older hairy human forms perished everywhere in the face of this invasion from the north. That the cold north continued to possess its old creative power even in the ice-age seems to be proved by the Aurignacensians and the Magdalenians, who suddenly become visible with splendid skulls as a stratum that flowed down from the north. They no longer needed to have their hair removed. There is no doubt about the subsequent permanent prevalence of these highly intelligent northern races in the domination of the earth; but it speaks for the fact that all great progress of the human being was a northern product.

This structure is vague to-day; we have much too little direct material. Whole continents like gigantic America have remained problematical. But I cannot see anything which seriously argues against the assumption of northern races again and again flowing southward. And with this, the hypothesis can be salvaged as an evolutionary possibility, that man's hair became generally removed in regions menaced by the climate and that nakedness in the tropics was but a subsequent phenomenon subsequently attained.

After the last echo of the ice-age had died away in the ages of genuine historical tradition and those northern races constituted themselves as "civilized man" in the narrower, modern sense, the "savages," who had been carried southward, stood still and became sterile as far as producing civilization was concerned. It is characteristic that from now on the concept of "civilization" essentially covered the concept of clothed man while natural man, the savage, counts as naked. Imagine a symbolical climax: Columbus' armoured Spaniards among the "naked" Indians of Central America. The clothed northern man had continued to ascend in a straight line; naked man had laid aside the talisman of progressing civilization with his clothes.

Many facts about the present-day distribution of human beings on our planet fit with surprising ease into this framework. You understand why the races that have the lowest civilization happen to be located farthest south, for example, the Australian negroes among the duckbills and mud-fish on the remote remnant of the Australian mainland. They would have been the first ones to be thrust out by higher culture, and were crowded farthest south, still the most primitive men in the structure of their skulls, and longest out of contact with the ascending line of the human race.

It becomes clearest of all in Africa how a repeated flood of peoples pressing in from the north must have taken place by stages; and the more primitive ones manifestly came first, the bushmen being typical survivors of those migrating farthest south. Only then did the somewhat higher ones come along as represented by the bulk of the present-day genuine negroes. Naturally the inevitable mixing of races has blurred the picture, but the outlines are still unmistakable.

There is much that argues in favour of the strange dwarf-races, which are still preserved in Africa, belonging to these oldest wanderers to the south. The old myths about pygmies have become consolidated to real dwarf races in the depths of the African bush, a full-grown man being hardly four feet tall. It is not unimportant for our discussion that of all peoples these dwarfs still possess the hairiest bodies and the strongest body odour. They possess a high degree of intelligence, but they make little use of it in their tropical jungle life. Is a particularly old product of man's splitting up process preserved in these Pygmies? Are they the descendants of men who went south before the evolutionary process of hair removal was completed? There is something remarkable about these dwarfs. An equally dwarflike race with this simplest imaginable and most primitive culture appears in the Weddas on the Indian Ocean. Legends about dwarfs run through all civilized lands like the last echoes of an old wave out of the depths. And the discovery of unmistakable pygmy skeletons in Europe at a site which is still prehistoric, at the Kesslerloch near Schauffhausen, caps the climax. You will have to imagine that particular dwarf races of old mankind had already taken this dwarf course at a very early time. Nothing ever came of it in a higher sense.

It is significant what a uniform picture all human races which

are still living to-day, including all naked savages, afford at heart. The brain, the part which was decisive for civilization, by no means shows the tremendous differences which one would like to read into it. It is characteristic that an authority like Klaatsch was able to report about a genuine Australian negro who came into an English family as a child six months old, and at the age of twenty was in complete intellectual possession of all our means of civilization and our civilized thinking. You get the impression that these "savages" separated historically at a stage in humanity when the actual basis of higher civilization had already been achieved. They remained standing still with this oldest possession, and as standing still in the main line of evolution invariably signifies a negative verdict, they actually retrograded in many ways.

And you must figure carefully with their subsequent turning aside from the main line, if you want to reconstruct the true representative of that old basis, from which we as well as the savage sprung at the time, out of the extant savage. You cannot simply assert that all who are "more savage" to-day are closer to the animal and are at the same time identical with our ancestors. Their nakedness to-day would simply be an example of the great transformation that had subsequently taken place in many other respects as well.

This leads to interesting trains of thought extending beyond the more specific problem, thoughts which tend in the direction of the old sanctuary idea, according to which the decisive factor in the origin of man which led to that old first basis of civilization seems to have been, not an intensification of the beast of prey, but the diametrically opposite, the breeding of an extreme peace type of animal.

It sounds so simple to say that the most bestially brutal savage of to-day is the most faithful counterfeit of our original exponents of civilization. But this view overlooks the fact that the original savage who stands behind us, which we really still are to-day in flesh and blood, only transformed by evolution, by love's immortality, had the stuff in him to ascend to us, while the savage of to-day has done nothing in all the intervening thousands of years but batten on his savagery, as it were, so that he has remained preserved like an object of curiosity in a menagerie. Might he not appreciably have intensified his "savagery" during this time without the aid of evolution? So that a good part of his brutality and

bestiality to-day would not need to belong to the counterfeit of our real ancestors?

It is singular to note in the whole genuine evolution of civilization to the present day how such branches of savagery and bestiality keep on splitting off, even though local separation no longer plays so much of a rôle to-day. But in the meanwhile true civilization quietly goes its way via a branch which continues to be generated just as tenaciously, a branch of finer elements which are more capable of evolution, and it proceeds only over these elements. Civilization does not proceed by way of criminals, tyrants, money hounds and blood hounds of all sorts, but via the Buddhas, Socrateses, Christs, Michelangelos, Dantes, Spinozas, Goethes and Darwins of world history. Something of the kind undoubtedly always held sway.

We are often inclined to go to the other extreme to-day with our Darwinian thinking, which in itself is thoroughly justified. If civilization's original human being was not a god-guided semi-angel, he must be as pitch-black a gorilla as possible and cannot be imagined bestial enough. Yet it must have been the very property of this animal which was becoming man, that it did not keep to the gorilla line but did become man. If you take the bestiality of the gorilla and mix in everything which can be discovered in the way of human bestial traits among savages, in history and in the nooks of our civilization and pile it all on original man, a monster will result compared to which the gorilla is a gentle boy. But I fear that when you make a bouquet like that you are tying together nothing but twigs that split off from your true line of evolution and that you will never in your life arrive at yourself in that way, crisp as the bush may become.

Nothing is farther from my mind than to reconstruct a Christian or even a Rousseauesque ideal "original man." But what I do mean is this. Ever since savage peoples have been looked at by sensible observers, these observers have been struck by the fact that in addition to many bestial traits there invariably is a layer of beautiful traits shimmering through, which is at least as big, even though these traits are paler in our civilized sense.

The missionaries interpreted this as the good kernel of God in all things human. Alfred Russell Wallace described it as the incommensurable part in man, which could not have evolved out of the beast but which at some time must have entered into original

man spiritistically from some nobler world of spirits. There seems to be an incomprehensible contradiction here at first. The savage who has just tortured his enemy to death with veritably fiendish ingenuity sits down and makes the most delicate artistic ornaments. The Australian married couple, which according to old tribal custom considers killing a new-born child for the pettiest considerations of convenience as a matter of course, loves the growing child with all the tenderness of the most humane civilized human being and laments its natural death with the most moving emotional sounds. The Dyak in Borneo, who goes "head hunting" and collects the heads of human beings whom he chances to encounter, as we collect beetles or stamps, is the most loyal and devotedly considerate of hosts, once you have been taken into his house and touch the exhaling circle of his human feelings.

But why resort to metaphysical monstrosities in the hypothesis? Why should not that "divine kernel," that "incommensurable part" be the very thing which, as a heritage from the old homogeneousness with the main trunk of mankind, is still preserved intact in these branches that split off on the side, even though it has not evolved any further? Why should not these good attributes have been added up once upon a time in that genuine original stock to form the factor which gradually raised it above the bestial animal, which enabled it gradually to become man? All the starts in this direction lie scattered in the animal. Original man merely needed to be a lucky meeting-place for them. The great thing, which seemingly fell from heaven, was always a meeting-place like that. Goethe but gathered together a millionfold scattered tendencies of his times and of his humanity into one focal point, which then rose over the earth like a new sun.

If original man was merely still more bestial than the gorilla, how then did he become man? I picture to myself that the bulk of the good elements which the savage of to-day possesses, the best which the animal already contributed and perhaps an additional part (since he did become civilized man after all) was already united in real original man. The fact is of value in this connection that there are still some savage peoples among whom the bestial element recedes to such an extent in contrast to this kernel of good that you almost think you could still reach out and grasp the old picture. The Bakairi Indians of Central Brazil, whom Karl von den Steinen taught us to know, still live in the

stone age to-day without any metal weapons. They go about practically entirely naked. But they lack the brutal cannibalistic traits. A gentle trait pervades their social relations, which have been regulated from very ancient times, and there is a sunny joyousness about their whole nature. And art, a mirthful art sparkling with ornaments and colours and finding full self-expression in a highly imaginative manner, fills a large part of their existence. Ceiling and walls, straw mats and implements rise above the beautiful nakedness of their bodies in a veritable intoxication of art and applied art. Festivals with dance and song extend through their lives like a chain of flowers. All this, be it understood, was not seen and described with the eyes of a Rousseau or a Forster but through the spectacles of an exceptionally sober scientist of the most modern school. In this nook of the world protected by chance there still rises up in tangible form something of the old sanctuary picture, to which we had by no means been led by phantastic dreams in an earlier part of our conversation but by the most critical anatomical considerations.

If you give yourself up resolutely to these thoughts, the true picture of primitive days not only appears brighter generally but above all you will also become mindful of the unspeakably gigantic amount of work which must have been done at that time. What are pyramids and towers of babel compared to the performances in this epoch of primitive man, which created language, the implement, art, the first lines of law and morals, everything which already towers in the form of ancient heritage as on pillars of bronze when the curtain of history in the narrower sense of the word finally rises before our eyes in Egypt, Babylon and China. This original race with its weak human forces actually achieved what a later historical age could credit only to gods and heroes. If ever the line of world evolution appears demonically great, it is here.

And viewed in this perspective, it suddenly appears as a very small matter that becoming naked is supposed to have been a part of this performance as an act of dawning civilization.

But it was not that after all.

For it was a tremendous fact for the higher love-life of civilized man which was likewise dawning. But whatever touches love-life always touches the fundamentals, the "Mothers" of things in the Faustian sense.

Man's becoming naked was seemingly a purely physical matter.

I characterized it above as the last great physical transformation in man, leaving the question open as to what extent this physical transformation which was connected with the development of language preceded the latter or in part still ran parallel with it. But we have already seen that a spiritualized motive in individual love-selection, the selection of the more agreeable, helped in this process. And the very next step in the rôle of the body's nakedness in love-life was to lead definitely and wholly into these spiritual forces.

In the final analysis, man became naked because unclothed man was erotic man as well.

One fine day when he is clothed, civilized man conceals his nakedness no longer merely because of the cold but because to him naked man is the erotic one.

The second chapter of man's more specific love-life begins at this milestone. It is no longer the evolution of nakedness but of the spiritual feeling of shame.

It did not produce any further changes physically in man's outlines. But it played the most powerful of rôles in the whole implemental field of clothing. And it usurped such a tremendous power of soul that all man's love-life becomes dominated by it. Only with this sense of shame does the love-life of man definitely finally and individually separate from that of the other animals.

There are naked animals below man. There are animals which conceal themselves in an artificial armour like clothing for defensive purposes. In our springtime puddles the ugly larva of an insect, the so-called caddis-fly, makes itself a wonderful little coat of sand, bits of wood, leaves or little snail-shells. These parts are woven together into the most genuine kind of a "coat" by means of very fine silk threads which the animal produces in spider fashion from glands of its own body in inexhaustible quantities. In the sea, the hermit crab conceals the soft hind part of its body in a snail-shell which it puts on pick-a-pack from behind like the famous piece of tin which the bucklered burgess of Schilda had sewn in the seat of his pants as being the place which was most exposed to danger in battle.

On the other hand, the erotic feeling of shame in connection with covering the nakedness of the body or merely the more specific erotic parts of the body is the first specifically human phenomenon of all love-life in nature.

§ 8

You will note that man had absolutely no erotic advantage over the animal up to this stadium.

The method of his immortality through love was the primeval one; separation of sexual cells in the male and the female from the great parental cell association and the mixing of two such cells according to the oldest original Rumpelstilz method of our earlier narrative.

As higher vertebrate animals were constructed, the scene of reproduction lay in the protected interior of the female maternal body. This in turn necessitated the act whose origin we followed from the salamander and the crocodile to the higher mammal.

In general, the erect position of the human body in contrast to the mammal which was set up on four feet was bound to become a determining factor in this connection. But nature had invented upright carriage very much earlier and not first in the case of man. The bird balances its body on two legs. It is true that in the majority of birds, body and pair of legs are not yet placed perpendicularly to one another in human fashion, but there is still something of a right angle about their arrangement; think of a chicken or a pigeon. Among certain diving birds, however, you already find the legs actually placed so far to the rear that the body cannot do anything else but rest on them perpendicularly in column fashion. Such is the case with the hooded grebe in the reedy waters of our lakes in the Mark of Brandenburg. Consonant with this its mixed love takes place by both halves of the love-individual standing up high in the water and pressing their snowy white feathered breasts and bellies together. The marsupial which is likewise set up erect, the kangaroo, further embraces its partner in love with its forelegs and simultaneously supports itself from behind on its powerfully developed tail. Where this support is lacking it is clear that the evolutionary road was bound to lead more or less decidedly to the position of the female animal on its back.

You find a crouching position in the case of the orang-outang.

In the case of man, the matter of position was not an absolutely fixed characteristic of the species. The various savage races of to-day show very different customs which in the final analysis pretty much ring the changes of all animalistic methods. Among the inhabitants of Kamchatka, whom old Steller visited in the eighteenth century and described in such masterly fashion, the position of lying on the side is religiously guarded. "The fish which give us our food do it that way, too," they told Steller. The orang-outang's custom holds good on the Aru Islands and in Queensland. Leonardo da Vinci, the great painter and scientist, to whom nothing in the cosmos seemed too slight or bad for him to devote himself to it with all the abandonment of a true philosopher, attempted to ascertain by means of careful anatomical drawings what position was the normal one mathematically, as it were. Civilization's restless, eclectic imagination went in for vague experimenting everywhere in this field without getting beyond the animal in any way.

If mixed love had done its duty, the little child matured in the human female exactly as in the higher mammal, and specifically according to the special method which alone continues to be the regular practice among the anthropoid apes to-day. We already discussed the conditions for this (above all, the structure of the so-called placenta). Here let me repeat just so much for the sake of maintaining the connection. As mixed love withdrew ever deeper into the womb, the "hatching out" of the mature egg was in the end transferred entirely there in evolution of the highest mammals. The green garden lizard still lays its eggs at a moist spot and leaves them to their fate. The python, the snaky giant of Southern Asia, already coils itself over its fifteen eggs like the braid of a girl's hair which is put up and during this time it very exceptionally develops a certain amount of body heat of its own which helps the hatching out process. The talegallus or bush-turkey in the Australian bush, which we mentioned before, heaps huge mounds of fungi and leaves over its eggs, and in rotting they produce heat by chemical means as do our haystacks, and thus they function as regular incubators. On Celebes, related chickens make use of the warm sand on the banks of hot springs, and in the Bismarck Archipelago they even use the cozy warm lava of a volcano for the same purpose. But the great bulk of the bird tribe, permanently warm-blooded as they already are, simply sit down on their

nests and hatch out their eggs with the little incubator oven of their own belly.

But the nest stays at one spot and cannot be carried around. What if the mother has to go wandering, change her location, search for food? True, the cuckoo drags away its egg in its maw after it has been laid, in order to smuggle it into the nest of a strange bird in its well-known swindling fashion. But that simply happens to be the expedient of a criminal. The penguin already does it more ingeniously for when suddenly frightened it wedges its one and only egg between its thighs and hobbles off with it. In fact, a Patagonian penguin came very near solving the problem completely as a bird: it habitually carries its egg around with it in a fold of fat at its belly, as in a little bag. But entire fulfilment, permanently leading on further, was to fall to the lot of the mammal alone. As you know, the land duckbill crams its freshly laid egg into a warm pocket of skin on the belly. There its offspring can mature, can burst the eggshell in peace and comfort and can at once lap up the milk that drips down. The next echelon, the kangaroo, no longer lays any eggs at all. However, its young still have an embryonic character of incompleteness and they are very tiny, small as a bean compared to the human size of the big, full-grown kangaroo, and the pouch comes in handy even though the actual incubator is already located in the womb now. To what extent the pouch comes to be used as a cradle, once it exists, is testified to by the humorous fact that the kangaroo's young still seeks the maternal pouch occasionally as a place of shelter even after it is already sexually mature itself. Weinland, the old zoologist, observed a hopeful kangaroo flapper which still sponged in the maternal pouch at the end of September and which still let itself be suckled in regulation fashion by the old lady at the end of October, at which time it was already carrying a little child of its own in its pouch.

One stage more, and the pouch is abandoned: the offspring, which in the case of the kangaroo was in the actual womb only for something over a month matures for a longer time there and no longer needs the pouch. The mouse, to be sure, still manages to finish her embryo at express speed of twenty-one days without any pouch. But the cat already requires eight weeks, and the elephant can no longer turn the trick under twenty months. Man, too, is in this series, entirely so and without any innovations: without a

pouch, with a bearing period of nine months, at the end of which the young is born with a certain degree of maturity but still needing care and normally still continuing to remain in direct physical contact with the mother for a considerable time through the agency of the mother's milk. Human milk, which as is well known is closest to asses' milk in composition, is essentially the milk of the higher mammal in contrast to that of the duckbill, which contains no phosphoric acid.

Whether the little sucking babe then gets into a fine civilized little crib or an old peasant's cradle, on a shield like Hector's little son or into a basket of willow shoots which the Mongolian shepherdess places in front of her on horseback, all that offers nothing new extending beyond the animal. How marvellous is the cradle which our harvest mouse hangs up in a field of grain for its young. It weaves some twenty odd blades of reed bent-grass together, often three feet above the ground, and in it places a little round basket, the size and shape of a goose egg, woven of reeds which have been repeatedly bitten to pieces and thinned down to the size of threads, and the interior of this is upholstered cozily with tips of reeds and catkins. The big black water-beetle weaves a sort of bathing trunks, made of spun material, around the rear part of its body, loads them down with its eggs, then slips entirely out of them and closes the open end by twisting it in spindle form. The tip of the spindle sticks out above the surface of the water and enables fresh air to get to the eggs through a fine channel. In that state the beetle abandons this little bark of Moses, which is likewise a work of art in cradle making.

When Huon's sweetheart is to become a mother in Robinson Crusoe solitude in Wieland's "Oberon," Titania has to make her helpful appearance as a guardian angel, as midwife. This invention of the poet expresses our civilized feeling that a human female must hopelessly perish if no skilful second human being came to her assistance at childbirth. The hind does it alone in its woods, and so does the cat on its haystack and the harvest mouse in its nest: the human being needs a midwife. And yet this notion is a thoroughly erroneous one.

Among savage races countless pregnant women execute the act without any particular danger in complete Oberonic solitude. When Longfellow worked up genuine Indian legends in his epic of "Hiawatha," which is comparable in beauty to "Oberon," he rightly

scorned Titania and had Nokanis give birth to a daughter alone and "joyously" by the light of the stars in a field of lilies. The real Indian woman of the Dakotas, Sioux and Chippeways goes intentionally into the lonely woods when her labour-pains come, and she needs absolutely no assistance. Her linen consists of grass and hay which she has gathered. When it is all over, she drags herself to water, washes herself and the child and returns to her work, the hard work of the Indian woman. And such and not otherwise is the case with a large number of primitive peoples. The primitive savage human female does exactly like the animal, which seeks a spot that is as solitary and protected as possible for giving birth to its young. For her healthy body this matter, which has become a life and death struggle wrapped in the soft linens of civilization, passes off harmlessly, like a tiny episode in her existence which is hardly worth talking about.

Among the savage mountain peoples of the Philippine island of Luzon the mother puts her child on her back a couple of hours after birth and walks calmly on in the tropical heat or the tropical rain. A woman of the Moluccas experienced her confinement all alone in a row-boat: she gave birth to her child and then peacefully rowed on to her destination. When it becomes necessary, such resolute acts of self-help occur at a fairly high level of civilization for that matter. It is said of the southern Slavic peasant woman that she can be taken with her labour-pains while gathering wood in the heart of mountain woods with not a human being around. Then after a short time she comes calmly home on her sturdy peasant legs, with her naked babe tied up in her apron. And the burden of wood, for which she started out, cannot remain behind: she faithfully drags that along too on her back. Out of the life of the modern metropolis there rises before me the picture of a poor washer-woman who outdid Charmisso's heroine in this respect: she resumed work at her wash-tub on the day of her confinement so as not to lose her few pennies' wages.

The thing that we can get least of all into the head of our civilized thinking in this connection is having the mother herself unbind her child. You will recall that the child is rooted in the nourishing womb by means of a rootlike organ, the placenta. A long rootlike tube, the navel-string, ingeniously runs from the infant's navel into this blood-root, and its interior is open for this pulsing vital juice. Now birth takes place: the little child suddenly

flies out into the open. The entire attached apparatus, tube as well as root, goes along with it. But from now on they are superfluous. The root, removed from its fertile ground, dies and decays. The tube attached to the child's navel and with its other end open, does not feed life with life now; it would create the fate of Siamese twins, one of which dies and forthwith fatally poisons the other one with which it is inseparably grown together. The child would now die of the rotting after-birth, if an intervening hand did not resolutely sever the connection. The universally known picture of the midwife with her big shears rises up before you. She simply cuts the navel-string through. As in the case of a stalk which is rudely cut through, however, it might happen that the vital fluid would pour out from the child and bring about death, for the hollow rootlike tube opened into the circulatory system of the child without any closing device on it. For this reason the midwife takes care to provide an artificial cork right after the decisive cut.

What we cannot get into our heads is that the mother who has just been delivered should herself be able to carry out this whole complicated procedure. Do not forget that this strange process of the child taking root in the womb also exists among all higher mammals above the marsupial.

Recall what I told you before. This process of taking root already begins in several marsupials; then from there on upward it is perfect. The only difference is that among a part of the higher mammals the root is looser, while among others it is so interwoven with the arteries of the mother and the child that at birth the piece of maternal soil in question must be torn out as well; man comes under this latter case along with the monkey. The newborn higher mammal, whether it happens to be a horse or a cat or a rat or a human being, is still attached to the rootwork of this after-birth by the navel-string and the question in first line is how it is to get free from it.

You see the very simplest way of doing it among these animals. Sometimes the navel-string tears off of its own accord due to the weight of the young plunging down in the act of birth or when the mother gets up after birth. That is what happens in the case of the cow and the horse. Or else the mother helps out directly: she simply bites through the troublesome rootlike string. This is particularly the case among the beasts of prey, which always have the necessary shears in their mouth in the form of sharp teeth. A

special practice which is not exactly appetizing but which can only be approved from the hygienic standpoint is that the animal mother simply gobbles up her own after-birth as her first meal after confinement and chews off the navel-string as far as necessary. But how is the bleeding stopped? Tearing off or biting off the umbilical cord does not constitute tying it off by any manner of means.

Nature's simple first aid is the following. If I cut an artery clean through with a pair of shears, a dangerous hemorrhage will result. But if I tear or squeeze the same artery through, it customarily tightens up in such a way that the bleeding automatically stops before the matter gets critical. We have a tearing process and a squeezing process of this character in the midwifely care which the mother animal bestows on her young.

Look at the methods of removing the navel-string practised by savage races, and at every turn you will encounter the exploitation of this same principle. The Philippine Negritos, whose women often give birth to their children alone, tear the navel-string to pieces with a splinter of bamboo, a stone or an oyster shell. When she has her solitary confinement in her jungle, the Indian woman of Brazil bites the string through with her teeth like a cat. In the latter case you still have the employment of the old animal organ which is grown fast, namely, the teeth. In the former case you have already reached the stage of the implement though still below the use of metal. Undoubtedly the human beings of the Tertiary and the diluvial age did the same as the Negritos. There was nothing new about their method compared to the animal's method except just the implement itself, the stone knife or the splinter of wood. It was only the employment of the metal knife and shears, the means of a civilization which was already further advanced, which by causing a stronger flow of blood created the necessity of rendering assistance by the ligature of the artery, whose hygienic triumph is the technique of the midwife which we have had drummed into us.

And so you will seek in vain for any thorough-going differences. The old tenacious belief that menstruation is a unique acquisition of human love-life is likewise utterly untenable, since the breeding periods of animals have turned out to be the clearest kind of parallel phenomenon and since finally regular menstrual bleeding has also been demonstrated in the case of the chimpanzee.

I was able to tell you about love-selection with its perceptions of beauty, everything that I have characterized as rhythmotropism, in connection with the bird of paradise, then simply referring back to it in the case of man.

But now try and think of an animal, monkey or mouse or bird or beetle, which covers up its nakedness for reasons of shame, and you will find none such. Man begins here.

You are again facing a question of philosophical principle with the problem as to the origin of the feeling of shame.

Because the "human being" really does begin in love-life at this point, it affords a standpoint which enables primitive man consciously to take a hand here and for the first time prove himself to be the "moral human being" in the erotic element.

Original man, as we here are told, felt one day that he had severed himself from the "animal" in all other fields. The sexual act alone remained an inevitably animal matter. So he concealed it to the best of his ability. He called it indecent and covered up everything which could be reminiscent of it. That was a deed of awakening "morality," meaning, of the higher cosmic nobility conferred on man, which man himself recognized and which had overcome the animal.

That sounds very lovely. I also absolutely maintain the standpoint that man's appearance on earth really and truly signified the conquest of such ground. Only I think of the ways as somewhat different. I believe that the effect and the performance of Goethe, for instance, continues to exist abundantly even without our having to assume that his father, the old councillor Johann Kaspar, said at his procreation: now I am going to make the great Goethe who is going to write Faust. That would have been rather much to demand. Old Fritz really did not say what is credited to him by the wording of the humorous anecdote either: the Seven Years' War is beginning to-day. I believe one must give its due on a broader and more comprehensive scale to what comes to pass in the universe generally, for this is after all something more than the wish and the moral recognition of a primitive man. But according to the way of looking at things which we have so often discussed, all that comes to pass in the world actually does rule throughout within the simple framework of natural law; it catches its fish with the seemingly soberest considerations of utility; they

are and remain pike for all that, whether the way of catching them runs this way or that way, for the result is ever the same.

And so in connection with the present problem as well I propose that we seek very small traits, advantages, adaptations and preferences in the simplest course of the world rather than to expect primitive man to have chosen this thing or that because it was "more moral" in the absolute sense of the word and already appeared so to him.

For that matter, what does "more moral" mean in this abstract sense? An older way of looking at things, which let us hope is slowly becoming antiquated to-day, had soft pickings with this comparative. To this viewpoint it represented a decisive step in moral progress when man one fine day came to know that everything which is natural, everything that went before, everything which still resembles the animal is dreadful, demonic and devilish. It must be concealed as being an arch atrocity. Everything erotic as well. But this unpleasant standpoint is at heart fundamentally false! It may from time to time have enjoyed a pedagogic rôle in the struggle for high-speed higher evolution. But in the face of a standpoint in thinking and placing values on things which is really big and includes nature as well it is pure nonsense. It so happens that from the very viewpoint of a lofty morality which approaches the "absolute," matters of man's love as they take their natural course are not immoral at all. If this were not the case, our whole consideration of the subject would be impossible here, for after all it is not intended to aid and abet immorality.

Proceeding from that old standpoint you could therefore get into a curious dilemma. That by virtue of his awakened morality, original man felt ashamed of a natural origin which is by no means immoral in the absolute sense but rather is just as profound and pure a manifestation of the spirit of God in nature as sunshine and the course of the stars. Original man (and after all we ourselves are still primitive man in most things) will really fare better if we talk him out of this entanglement and ask him very simply what simplest kind of utility could have impelled him to cover up his nakedness, even when heat and cold did not come into consideration? And for your part place the whole strength of your philosophy of life and your respect for the high course of the universe in this little word "utility." As a bridge for progress in the world that is really a cosmic word of the very first order, and in

its deepest sense contains more "absolute morality" than any other word.

You want to take a bath outdoors in front of others. You strip yourself to the skin, except for bathing trunks. What does that signify?

Your bathing trunks leave the entire nakedness of your body exposed but conceal your sexual apparatus. These bathing trunks once more draw a razor-sharp dividing line within your nakedness. They separate the human being who is simply naked, in this case naked for practical reasons of bathing, from the erotically naked human being. For erotic purposes you could do without all the rest of your nakedness rather than without nakedness at this particular place. Conversely, covering up this place with bathing trunks immediately preaches to every beholder that nakedness in the erotic sense is not involved here and is not meant to be involved, but that what is involved is the simple utilitarian nakedness of a single individual for practical bathing purposes.

You will recall that we distinguished between man in his hunter's fur and man at home. The former was the clothed one and the latter the unclothed one. The unclothed one coincided at least at times with erotic man. That fact probably made him naked in the sense of losing his own fur, in the way which we discussed. In this bathing suit illustration, you in turn have a finer degree of distinction, a subtle shade of meaning to "naked" and "erotic."

A distinction is drawn between two different kinds of nakedness.

Nakedness for simple utility; in the case of primitive man it coincides with the idea "at home," indoors, around the fire of the hearth, where no fur is needed. And within this general concept, nakedness in turn for the directly erotic purpose. What could be more obvious than for this subtle shade of distinction to be indicated externally by something of a definite character? At the genitals. The sign would have to be written on them, as it were. But what better way could be thought of than in the form of a little covering contrivance for symbolically keeping these parts under lock and key, a little piece of cloth, a little shell, a little leaf, merely a little thread even, but which would say a whole lot by announcing: this is not the nakedness which I now want to show, I am not thinking about it at all at the moment, therefore don't you think about it either. It is warm in here; that is why

I have taken off my clothes. Or I want to go bathing; that is why I am naked. Not for erotic reasons.

In a word, concealment from a sense of shame on the otherwise naked body—the fig-leaf—is a signal.

It was bound to make its appearance one day for the eminently practical reason of making oneself understood, after "naked" and "erotic" had gotten so closely entangled. Since "naked" was employed for other purposes as well, it could not be suffered simply to coincide permanently with "erotically ready." The further fine distinction within the concept had to start in somehow. And man having reached the implemental stage, it set in quite consistently, no longer with a transformation of the organ, but with the most convenient means of all, the implement itself: in one form or another the "fig-leaf" was invented as an "instrument" which could be put on at pleasure and be taken off again when there was reason for doing so—as a signal lantern, so to speak.

I maintain that this simple fundamental thought will see you through the entire problem.

I shall string together a number of illustrations, all of which fit this idea. Taking it all in all, they form the strangest cases in the entire problem of the private parts.

You still find a slight analogy in the animal kingdom. Among animals, the alternation of periods in which they are in an erotic mood and periods in which they are erotically indifferent is sharply indicated in many different ways by changing physical characteristics. The livelier colours and forms, which I already characterized as "wedding-dress," develop during the breeding season. During non-breeding times, on the other hand, it seems as if a general tattered and shabby state were intended to give the signal: not now! We already spoke of this in connection with the male bird of paradise. But it also applies to numerous other animals. Only at the time of sexual excitement does the golden goby gleam in the water as if adorned with blue precious stones. Only when in love does the toothed comb of the crested salamander swell up, to shrivel away wretchedly afterwards. Outside of mating time, the bluethroat is only a pale secondary rainbow of its amorous blue, red and black glory. The hooded grebe wearing its non-erotic everyday suit gives up its ruffled top-knot and the monkey looses the uncanny redness of its amorous posterior. You can already speak perfectly well of signals in these cases. And if the female which is not yet in heat still shyly wards off the male, this can be considered in that previous sense as a dark preliminary stage of what we call "shame": it is the behaviour of a being whose signal is not heeded but is violated. I also told you about erotic scent and the part it plays.

But it was only too obvious that man with his technology of implements, once having invented artificial clothing, would borrow his signal from this new art, and that he would therefore choose a covering signal as a negative sign. Nevertheless it was not necessary for him to resort to real total "covering up." That is a more ingenious idea. It seems to me that the first step was merely the greatest possible distinctness of the signal as such, of the fig-

leaf as a letter, as a caption. The sexual region could remain visible if only at the same time it showed some badge or other, which drew the magic tarn-cap of invisibility over its erotic mission in life as it were.

This must have been particularly important for man, since from a very early time he had no fixed natural limitations placed on sexual intercourse by definite periods for loving and not loving, such as customarily were imposed on other animals as an alternation of breeding and non-breeding seasons, open and closed seasons for erotic hunting.

Certain points are clear about man. An age at which sexual maturity is attained is necessary for the naked body to come into consideration as erotic; nature labels this distinctly enough with the gradual arching of a girl's breast, with the aftergrowth of the hair on the private parts and above all with the capability of procreating which is only just awakening. But the human race varies extraordinarily as regards the appointed time when all this makes its appearance. Furthermore, we undoubtedly have old rudiments of a breeding period in menstruation. In general, erotic feelings are liveliest after menstruation. And the fixed belief that a deep connection exists between menstruation and fecundation extends back into the oldest Indian and Græco-Roman literature; a belief which solidified into the fixed doctrine of a physiological school in the nineteenth century. On the basis of our knowledge about the female ovum which finally began to be acquired then, it was asserted that an ovum wandered from the ovary to the womb only during the menstrual period and that therefore fecundation could take place only during or not too long after that time, since only then would both parties, the female ovum and the male semen, be together at the right spot. I do not need to go any further here into the controversy over the details which continues. What remains true is the striking external similarity between the occurrence of menstruation and the postulates of an animalistic period of heat. But it is equally striking with what extravagant frequency this period makes its appearance in the human being.

It is not tied to definite seasons, say to spring. I shall leave the question open whether it is entirely a heritage from the animal—the chimpanzee's menstruation may argue in favour of this—or whether implement-using man's growing independence of the seasons (above all in the north, in overcoming winter by clothing,

housing and fire) was an additional factor which helped along. In any event, at a very early stage you see an embarrassment of riches in this respect in the case of man. In our improved civilized world you almost have the impression that these twelve bleeding stations of the year no longer involve the prerequisite for twelve corresponding stations of love, but that these menstrual days seem much more apt to be a twelve times repeated brief closed season in a year which otherwise is one continuous erotic performance. And to this add the fact of the human male's almost completed emancipation from any ascending and descending curve of love during the year. I say almost; many will say absolutely. I personally believe in the existence of little shadows of heatlike variations, of increase and decrease in the procreative desire and the procreative strength of the human male during the year, but they are undoubtedly slight and have been too little explored to play a serious part in our calculation; their frequency remains characteristic, no longer making heat appear as an intermezzo in an otherwise unerotic year but rather making the brief moments when the erotic element goes down appear as intermezzos in a general breeding year.

The fact of course remains that external circumstances have at all times intervened and still intervene in man's almost perpetual physical preparedness for love. If according to statistics a large part of Germany's population produces fewer children during midsummer and fall than in winter and spring, it may easily be that the heavier burden of work imposed on the peasantry during those particular seasons has created an artificial regulation with a sort of closed season. But obviously there are no factors from primeval days here which made themselves physically felt in human nature to the point of universal limitation. There is a similar statistical maximum of "carnival children" in my dear home town of Cologne. They are the net result of a period which recurs once every year, when the greater part of the populace traditionally works itself into an intoxication of buoyant joy of life and for this purpose it puts itself under the influence of alcohol to a fairly high degree—a fact not to be overlooked. Nine months later the statistical curve rises abruptly to the peak. Such carnival festivals, however, are not an invention of ingenious civilization, but on the contrary they are remnants from the life of natural man which have managed to maintain themselves into the midst of the conventional cramped

life of our high civilization. Occasional periodic intoxicating festivals, orgies and mass games undoubtedly played an important part in the life of primitive man as breeding-seasons of an artificial kind, which are consecrated by social custom. But obviously that brought about no permanent change in physical tendencies.

And so a mental act had to come to pass, which separated "naked" and "erotic" ordinarily, in everyday usage, by means of a "signal," a symbol which was consciously calculated by a reflecting mental being for a mental being.

I quite calmly employ the little word "mental" now in a very definite sense. This sense adds the intention of accomplishing a definite purpose in mind. In my opinion, this stadium sufficiently existed from the moment when man made implements as a usual thing. In contrast to the organ bred on the body, the implement is the product of the human mind striving toward a goal. It is a natural product of the second, higher degree. From the moment we assume it to be in man's hands we have full liberty, in my opinion, to assume a symbol of love-life, which we could only think of in the animal as an organ grown fast on the body, as just such a secondary product of intention in the case of the human being.

But how are we to picture such an original symbolical sign, which would be very much simpler than our civilized bathing trunks?

We spoke of the Eskimo. He still mirrors the old antithesis of original man in splendid fashion: thickly furred outdoors in the cold, naked at home in his warm hut. I want to warn you once more not to identify the present-day Eskimo with primitive man. I see nothing else in him but the little side branch which was driven farthest north from that main stock, which located as "civilization" in the temperate zone after the ice-age. It is true that as a result of his projection toward the pole the Eskimo has preserved certain traits of the ice-age more sharply than the naked savages of the tropics. But he dropped out of civilization's line of march just exactly as did the latter, and we do not know how far he may have gone down in the world in the intervening time, permanently in the clutch of too rigorous climatic conditions.

When an Eskimo man throws off all his clothes indoors in the company of others, he does not put on any bathing trunks but he does tie his foreskin together with a piece of thread.

The symbol could hardly be more ingenious and more simple at the same time. "None of that now!" it preaches in the simplest and yet most intelligible form. "To everything there is a season and a time to every purpose," it says in Ecclesiastes. And now is not the time for what you might think of when you see this outline of nature. The door is locked, not crudely with a lock such as is employed to keep thieves out, but merely in the same way that one might put a flag at half-mast as a silent sign meaning: I am not at home.

If you take off this Eskimo's string, if possible in the presence of women, he feels ashamed. What does that mean? You have suddenly made him erotically naked, although all circumstances are otherwise contrary to the true erotic purpose! You have created something illogical, a yawning contradiction. This illogicality in turn produces a feeling of being ill at ease, a reaction, indignation in him. His feeling of shame is really an expression of indignation. Indignation over an action which is out of place and improper; that is to say an illogical action.

True, your Eskimo will not be able to elucidate this for you in such professorial fashion. He never took a college course in logic. The word itself is hardly in his vocabulary. But he certainly has another concept; the concept of custom, usage, traditional propriety. I know of no race on earth, whether naked or shirted, which does not have this simple, homely concept. Its content varies infinitely, but the idea remains. The Eskimo will tell you that it is "not proper" to take off the lock at the foreskin at this time. This in reality is nothing but the old established traditional form of the original feeling that an action is illogical. Man is a social being, with a connection between succeeding generations, with traditions, with the handing on of old experiences in the form of simple rules of instruction which keep on being imparted to the young by the old. The idea "Thou shalt not kill" was experienced for a certain length of time on man's own body as it were. Finally it becomes a maxim, a moral precept which is handed down as such. In the same way, the illogicality of untimely erotic exposure was drummed into the ancestors for a long time as a real fistic fact of hard-hitting life. Afterwards it was "transmitted by tradition" as "improper." The characteristic thing about it is that if at some time this custom ceased to be handed down, the matter itself would undoubtedly force its way through

and become established again, just as well as would the idea "Thou shalt not kill." The impracticable side of its abandonment with all its consequences would simply come crawling along again by degrees in such uncanny fashion that everything would necessarily become automatically regulated again. And in this sense you can quietly say that the Eskimo of to-day knows the deeply inward illogicality of that act, even though he does so under cover of the little word "custom."

This immediate feeling for illogicality in happenings is inherent in all of us in its most immediate form and far more energetically than you would probably think when you hear such a philosophical word born of civilization as "illogicality" or "logic." You can observe this with astonishing clearness in children. In fact, you encounter it at every turn in the dog. The child as well as the dog have gained confidence in the course of an action on the basis of certain experiences. They have noticed that when such and such circumstances come about, such and such further consequences happen, which in individual cases may be agreeable consequences. Now suddenly alter these consequences, act totally differently once from the way you usually do, beat the dog when he expects to be patted, and you will arouse a twofold indignation in the dog, not only over the beating itself but above all over the inconsistency, the illogical character of your action.

Because the sense of shame springs from indignation and is an act of anger according to the innermost core of its nature, a sign which otherwise is so incomprehensible has become associated with it in us; namely, blushing. Whoever gets angry has his cockscomb swell up from a sudden rush of blood to the head: you can study that in the turkey-cock. If shame were merely simple fright, the face would turn pale instead of red. Shame is a much more active occurrence in the soul than fear: an attack, a verdict, a critical judgment lies in it, and so it has rightly received the plus sign, which is "red," in the blood language of the human face. Red is by no means the genuine active colour of the erotic element itself. When ripe love grants voluntarily, when to speak with Solomon the erotic really has its time, the countenance is raised to the highest pitch of vital energy, the eyes flash or sink into that wonderful merging blue in the depths of feeling as the sun sinks in soft moist mists; but nothing calls to mind the dark purple flame which flares up every time when shame protests.

The Eskimo is clothed outdoors and naked indoors. Now let your eyes wander down from the pole into tropical lands, where the human beings who streamed down from the north first became entirely naked, naked in all situations of life. How important that sign language which avoided conflict was bound to become here! And how simply do the universally known facts, facts which are viewed with eternally fresh astonishment, agree with this idea.

How the interpreters of these facts cracked their teeth on this hard nut! The savage could have no shame because he was naked. But then all of a sudden he had it after all about the tiniest of mere bagatelles. In the Admiralty Islands the men go about completely naked with the exception of a string around the waist, to which a little shell is attached in such a way as to cover the foreskin. A traveller buys one of these shells from a native, and the vendor turns aside when he unfastens it: he would feel ashamed if he were to let himself be seen for one instant without his signal. "What's that all about?" the European asks himself. That sort of "shame" seems a poor joke. And yet in it exist all the original conditions without exception for what we ourselves call shame.

The symbol does not even need to make its appearance in so very realistic a form as a lock. The imagination is satisfied with very much less. A cord or a strap merely in the neighbourhood, the green shoot of a vine which does not touch the critical point at all, answers the purpose. The New Caledonian wears a string around the body; the Obbo negress on Lake Albert Nyanza sports a little bunch of leaves. When the negro woman has to stand bent over at her agricultural labour she fastens her symbol at the rear and this too is strictly observed; her sense of shame rebels with all its energy against whoever takes it from her. Vogel told of a poor woman who had been taken prisoner and had lost her rear covering like a hermit-crab which has lost its shell; she sat naked on the ground and refused to stand up until she was handed a green sprig with which she proceeded to cover her reverse exposure and felt that her honour was saved. In Samoa it is the navel which frequently bears the erotic symbol; whoever exposes it when it should not be falls a victim to moral censure, while the actual genitals remain unnoticed; they remain ignored from this very standpoint of eroticism as long as the symbol, it is immaterial from where, pulls its mental magic tarn-cap of invisibility over them.

But though the symbol be tiny as the seal on a gigantic legal document, it always commands full respect and exerts its whole effect. Only when there is nothing at all or there is thought to be nothing in the way of a symbol does the concept of nakedness in the sense of being crude and indecent make its appearance. The native of the Fiji Islands who is naked except for a tiny apron fastened round the loins says to the missionary from New Caledonia who, he believes, goes around without any shame symbol whatever: "They haven't even an apron over it and they pretend to have gods!" In moments of utmost solemnity it happens that the symbol is intentionally left off just to prove by documentary evidence that every least possibility of misinterpretation is now precluded. The queen of the Balonda negroes received Livingstone in a Garden of Eden state of absolute nakedness. That is exactly the same as when a god is represented naked. Matters are on such a high plane that the erotic sphere has sunk out of sight completely. Thus does the knight errant leap naked out of his bath in order to succour innocence in distress. In the former case, the naked court ceremonial was at the same time the greatest imaginable vote of confidence for the visitor.

This whole matter is most instructive and many-sided as found among the naked Indians of Central Brazil. Everything appears compressed there as in a classic example.

The Bakairi man (I use the word as a collective term here, although strictly speaking it is the name of only one of these Indian tribes) is absolutely naked in the clothing sense. Instead, he paints his naked skin. The hair on his head is twisted into locks and is interspersed with priestlike tonsures according to ancient custom. He wages ruthless warfare on the remnants of other hair on the body, above all on the hair of the pubes. Round his abdomen he wears a cotton string. Every man wears it without exception. All sorts of trinkets, kernels with holes bored through them, fragments of snail-shells and the like hang on this string. But it is not a genuine girdle for carrying things; because when the Indian has to carry his tools of trade, shells or sharp fish's teeth or a knife given to him as a present, having no pockets on his naked body, he hangs these objects on a special cord over his shoulder.

It might also seem to you at first that the little belly string was merely a reserve stock of twine for emergencies.

There you are wrong: it is the male symbol. It covers up abso-

lutely nothing to be sure. You look in vain for the fig-leaf that might possibly be suspended from it. Nevertheless, on further inspection you are struck by its very distinct resemblance to the string which the Eskimo uses as a closing device. The young man who enters upon the years of love is required to turn his organ of love upward and jam it tightly with the foreskin under the string. This symbolically indicates the lock and key. Purely mechanically, it also prevents a greater display of transient erotic excitement at the wrong time. And in addition, the squeezing and pulling mechanically stretches the foreskin itself.

Let me say just a few words about this latter purpose.

It is evident that there is something about the human foreskin not entirely suited to the purpose of the act of love.

On the one hand it is an unambiguous protective means. It makes the impression of being the remnant of an old flap of skin over the male urinary opening, affording protection against the intrusion of unbidden things from the outside. You have the impression that as long as merely the urinary opening was involved this protective purpose could not possibly be carried far enough: for the simple wave to flow off it was quite sufficient to have a very small hole bored through the closing device which otherwise was perfectly solid—the foreskin grown completely together except for a very small hole.

I believe that a certain trait, a certain tendency to restore this condition still continues to exist in nature. I find evidence of slight but extremely stubborn undermining work of this character in so-called phimosis which keeps on recurring in so many children and which is an inborn condition in which the foreskin actually covers the tip of the urethra entirely or almost entirely.

You will recall how once upon a time in the course of evolution this simple faucet on the body for letting off useless urinary materials had to take over the much greater second function of expelling the male procreative substances in the act of love. The simple water tap, which was merely turned on and off a couple of times daily, received the incomparably more powerful, more active mechanism of ejaculation for hurling the precious wave of life far forward in the act.

But obviously the closing device of skin now came into the gravest conflict with this new task and this new equipment. Useful

as it might ordinarily be to protect the sexual opening when in a state of rest against unbidden guests crawling in as well as other interlopers, at the moment of the act everything that cramped and confined things formed the most fatal kind of a hindrance, highly unsuited to the purpose. And what a supremely great purpose was involved!

The most natural thing would have been for the foreskin capsule which extended too far to burst with the first mature act of love and for it simply to step one side after the fashion of the female's virginal membrane. The little curtain of skin in the female sexual gateway offers a striking companion piece to the male foreskin. There too you have a little closing device of skin, although it has nothing to do with the urinary tap in the case of the female. It too makes the impression of a protective sail stretched in front of a most important opening in the body. It too leaves only just so much room that a wave flowing off can get through without bursting it: namely the menstrual flow of blood. But when the act of procreation, which is a tremendous matter in comparison to this flow, wants the right of way here for the first time, the virginal membrane simply tears: the old protective sail goes to pieces in the face of this higher purpose. For all that, the violent tearing connected with bleeding produces the impression of a small imperfection, as if two purposes had conflicted, making a perfect solution of the problem impossible in the magnificent structure of the organism which otherwise was so very harmonious.

No violent tearing of the male foreskin takes place in the first act, at least not as a rule; it does happen now and then but in the majority of cases it is by no means necessary. However, certain inconveniences incident to the cover being half on and a tendency to have it even further on make themselves felt in many different ways. In direct opposition to its mission, the protective flap often becomes the seat of troublesome diseases. And for a certain by no means insignificant percentage of men who are otherwise fully mature for love it even remains a permanent hindrance, simply because it does not tear as easily as the virginal membrane. Plenty of cases occur where the latter offers a desperate resistance, endangering the complete consummation of many a marriage.

Under such circumstances it is not very surprising that man early began to think about how this obvious little conflict in his physical structure could be helped out. As long as a boy had not reached

puberty it did not matter, unless the foreskin blocked the way to such an extent that even urine could not pass properly. But with love's awakening it became serious.

Man had his cutting implement, the hard stone knife. He had already been cutting the new-born child's navel-string through with it. He obviously began very early to carve around on his naked body with it. He bored holes in his nose, ears and lips in order to hang ornaments in them and gouged tattoo patterns in his arms and legs and breast. But it is with the organ of love that many savages still go the mad limit to-day, staggering the imagination.

The Dyaks bore through the glans with a silver needle, and in this channel, which remains permanently open after it has healed, a hard apparatus is stuck for the act of love in order to intensify the female's excitement. This curious instrument is called an "ampallang." Sometimes it is a simple little rod of ivory or silver, sometimes a sort of silver handle for a double brush made of stiff bristles. Among the Battas in Sumatra little stones, frequently as many as ten, or else little three-cornered pieces of gold and silver are sewn under the skin of the member. It seems as if man wanted to recapture by force with his implements what the dog and other animals still possess organically in the form of a firm bone in their love member.

The so-called Mika operation is very prevalent among Australian tribes. This too involves boring through the tube of the member from the outside, but it is performed for a much more radical purpose; it is intended to guarantee unrestricted sexual intercourse without any possibility of pregnancy resulting. A daring incision is made with a stone knife which is as sharp as a piece of broken glass and almost the entire channel of the member is split open between tip and root, and this fissure is then made to heal up so that it remains open. Naturally the wave of love runs off to no purpose way at the top, without ever reaching the depths of its destination.

No wonder that this radical method, which now heightened the joys of love by the use of the knife and now prevented their consequences with the same means, also took steps against any and every hindrance to these joys, no matter how trifling.

In first line you see races which proceed against the female organ with the most uncanny cruelty.

I do not know for sure whether the custom exists anywhere on

earth to-day of intentionally destroying the virginal membrane as a possible hindrance to love, by driving in an implement before puberty. It happens by chance among different peoples. The Chinese put a premature end to it by carrying the cleaning of their little children to extremes.

"Circumcision of girls" is found in almost all of Africa, in Java, Kamchatka and Peru, in the most dissimilar lands absolutely for a deliberate purpose. This practice consists of a bloody operation on the female sexual organs affecting the small labia and that curious remnant of a female member, the clitoris. Among a large number of African tribes, these parts frequently become hindrances to the act of love when they attain their full growth. In an earlier part of our conversation we concerned ourselves in detail with the evolution of the clitoris, and you know that it represents the remnant of a very old female member which originally was much larger but then had its size reduced for definite reasons. When it becomes too long, either as an individual case or as a definite racial tradition, it can lead to small obstructive conflicts in the female sexual gateway during the act of love. If you stop to think that a natural tendency of the formative force of the body to keep pushing this clitoris forward again to an uncommonly great degree exists among several human races, it becomes conceivable that man finally decided to perform a brutal operation here: this disturbing excrescence was bobbed in little girls as we crop a dog's ears or dock its tail.

One step from here to the boy, and you are face to face with the hoarily and venerable custom of "circumcision."

What the doctor does to a little child to-day when the protective covering of the foreskin seems excessive and causes so-called "phimosis," the savage and the peoples of awakening civilization in the grey days of antiquity generally grasped as a necessity. Man simply cut off the all too obtrusive protective covering at the tip of the member with a hard stone knife; he "circumcised" the member. His first implement was the stone. We saw in the case of the navel-string how the process of pressing and squeezing with a stone includes a practical precautionary measure against violent bleeding. That is the reason why the stone knife remained in use for the act of circumcision as an exception after the metal implement had replaced the stone and the bone implement. And this practice held its ground even after medical science had progressed to the point where it was able to check bleeding resulting from a cut made with

metal. Religious myths came to be woven around the stone and the bone knife used for circumcision in days when its purpose had long been forgotten. Many years ago, when I attended Schaaffhausen's course of lectures on prehistoric man and his times at the University of Bonn, that grand old man used to tell a story culled from our own civilization. It was about the Rabbi who performed the circumcision of the children entrusted to him with his teeth so that no metal should touch their foreskin; but as luck would have it he was syphilitic and so he spread infinite misery.

This thought-provoking Rabbi no doubt knew just as little why he acted thus as do most people to-day to whom the act is a matter of course because of their membership in their religious community. But how many dreams and ideas, how much brooding and dull understanding, how much courage and energy of awakening man's lay in this act of the unrestrainable Prometheus, who sought to master old nature with his implement and improve on nature even though his own blood flowed in streams. When you see attempts such as this, animate nature's whole struggle on earth, its unutterably complex experimenting, suddenly appears concentrated in man. His brain, his hand now want to carry on the work of the old spirit of nature that created organs. They are young yet, and one must not be surprised that they grope along crudely. Nature, too, squandered a cloud of golden pine pollen to make a little tree. And so man wades in blood just to find a little line once more that will lead further on the track of love. As his temperament becomes finer and shrinks back with a shudder from savagely cutting the body of a poor crying infant, he conjures up the supreme spiritual powers in his life: religion must consecrate circumcision; the gods wield the knife. Until finally in our days a still higher authority, medical science, of its own accord takes up the old order, sanely preserving what is necessary and eliminating where only exaggeration was generally practised. . . .

Approximately one-seventh of all mankind on earth is still circumcised to-day. The Jews and the Mohammedans are not the only ones who are addicted to the custom as a regular thing. Columbus' successors were astounded on discovering it in Mexico and South America. The Australian negro in his bush and the Samoan and the Fiji Islander in their Garden of Eden do not know anything else. And to crown all, the custom extends into the farthest nooks and corners of Africa. Rightly, in order that its

connection with the first act of love may be shown, it is not the little child which is circumcised among these savage peoples, but the youth on reaching the age of puberty.

Sexual maturity makes its appearance very early among these peoples. At the age of fourteen the Betchuana boy in the heart of South Africa is already at the stage where his father seeks a bride for him. But the solemn act of circumcision must first make him "worthy" of this. For this act all the elements are united which we have in the celebration of confirmation, for instance. If a number of boys are close to the psychological moment, the big plot begins with the preparatory ceremony of a sacrificial act. There is a hut at a lonely spot, and here the chosen youths must put in an appearance. A herd of cows is entrusted to their care, and they may strengthen themselves for the ordeal with milk. After a certain length of time for the boys to gain their composure in has passed, the circumciser comes in company with the chief and performs the operation with the assagaie, a two-edged blade of steel like a bayonet. The wound is cooled with healing herbs and carefully bandaged. Then each youth must colour his naked body snow-white with potter's clay. Until the end of this period of probation they must lead a harsh ascetic life. All must sleep in ashes, without mats. Every morning the medicine man returns with an emissary from the tribal chief and examines whether the wound has been kept clean and whether the body has been coated white according to regulations. Those who do not play the game courageously get a beating, like youngsters. But finally the hour of deliverance strikes. All the equipment that has been used is burned up in a solemn ceremonial last act. Then the line of march heads into the water for a grand bath. That is the crisis. Now the "men" appear proudly before the chief. Their parents bring them new fur coats and entertain them at a banquet of millet cooked in milk, at which the utmost ceremonial prevails. Weapons are tendered to them and an elder of the tribe officially pronounces them to be masters of arms. A military oath of loyalty is sworn to the chief. They give an exhibition of military exercises for the chief's benefit, and lastly there is merry-making and dancing. From now on the young men have new names, they may eat in common with their parents, which was not tolerated before as being unclean, but they no longer sleep in the parental hut now. And henceforth they wear the circumcised member in a leather case which is attached like a suspensory:

with the declaration of their coming to manhood they have likewise entered the stadium of the "symbol."

The Bakairi Indian from whom we started out does not practise circumcision. And yet he too busies himself earnestly with the problem of his foreskin. When the doctor to-day wants to cure that troublesome constriction, phimosis, he has two means for doing so. The one is the very radical means of circumcision. The other, which suffices in mild cases, consists of gradually stretching the impeding skin. By constantly pulling it forward and stretching it, room is made from within. This seems to be the very thing that our Bakairi aims at with his early practice of tying off the foreskin and squeezing it under the string around his loins. To a certain extent, there really is a hygienic, medical and prophylactic sense to his proceeding which as such drops out of symbolism itself, but all the same it remains in profoundest contact with love-life, a bloodless companion piece to circumcision.

In a related Indian tribe of the same country you find the Eskimo custom as a permanent institution. The Trumai simply tie the foreskin together with a red cotton string like the end of a sausage. Another of these Indian tribes, like those Betchuanas, makes use of a regulation cover, a funnel-shaped sling made of hard dry yellow palm straw. This is put on the member in such a way that the foreskin looks out of the loop-hole below and is gradually tied off tightly and hygienically.

The Bakairi woman is also absolutely naked except for her symbol. She, too, has painstakingly removed the hair on her private parts, and her symbol likewise is much more a lock than a covering; a hygienic purpose intimately adapted to love-life is combined with the symbolic purpose.

In one tribe, the woman wears a soft, greyish white band of bast. It has the thickness of a rope. It was impossible for it to be intended actually to cover up the sexual region, as Karl von den Steinen, the splendid explorer of this race, rightly emphasizes, for otherwise "they would merely have needed to take strips that were wider. They took a long strip of bast which was folded together until it was quite narrow and rolled up one end a bit, then with one hand they held this little roll pressed against the lower angle of the mons Veneris, with the other hand they wound the loose strip several times around themselves and drew it between their legs to the rear and up again, then ran it back to the little roll in front where

they slipped it under the taut strip and then ran it around the other hip to the small of the back, where they twisted the loose end in and tied it fast."

In another tribe, the grey bandage of bast is replaced by a black one during the menses.

Lastly, a little triangle of hard bark is in wide-spread use among them as a symbol. The Bakairi women call it *uluri*. A square is folded diagonally to make a two-layered triangle, the way children start to make a little paper boat. Strings are attached at all three corners, the two upper strings going around the thighs while the lower one is passed between the legs. The maximum size of the *uluri* is three inches wide on top and one and a quarter inches long. It is placed so as to cover the vulva exactly and when all the strings are drawn tight it closes the whole door; it, too, is a sort of lock.

Like all the handiwork of these jungle children with their happy enthusiasm for art, the *uluri* is fashioned coquettishly and prettily. In addition to a lozenge-shaped four-sided figure, which is really the futuristic picture of a fish, the triangle of the *uluri* plays a particularly prominent rôle in the decorative art of the Bakairi, which is extremely highly developed. These triangles keep appearing in beautiful ornamental rows on all sorts of wooden cylinders, drinking shells and so forth, and the artist himself invariably calls this ornament "*uluri*," the mathematical picture of the triangle has grown to be realistically synonymous for him with this little triangular women's apron. In his beautiful monograph on the art of the Bakairi Steinen makes an apt marginal comment on the taste which gives preference specifically to an ornament such as this with an erotic flavour. He says: "We, too, still occupy the standpoint of the Kulisehu Indians to-day. Only, we civilized human beings have treated the anatomical model stylistically, where the savage peoples living in a state of nature contented themselves with the pretty little dress. And strangely enough in place of the *uluri* we have the lozenge or rhomb, which we have discussed at such length here. Probably greatly to his satisfaction, the Bakairi explorer would find his Paku fish again—the lozenge with the dot in the middle—in countless specimens (I do not know whether this holds good for all parts of Germany) carved, scratched, drawn and painted on our trees, walls and doors exactly as the Bakairi does it. Woe to him who has once fallen into the habit of seeing this Indian Paku pattern everywhere it is put on among us. If such there be, and he wanted

to flee from it he would no longer be able to enter any railroad station, any avenue of trees, any tower or other spot commanding a fine view, in short any place where human beings pass, for it looks as if an unknown mysterious secret society had conspired to pursue him with it; he encounters it on the bark of primeval giants of the forest, he encounters it in the newly fallen snow."

Just as naïvely as this savage utilizes his *uluri* for artistic ornamentation, just as little does he hesitate about decorating these sexual signals in an artistic manner. If the young Betchuanan in Africa embroiders the leather cap on his member with gay beads, our Brazilian friend, the Bororo Indian, fastens a long flag with a red and yellow design on his cap of bast on festive occasions, proof positive that anything else is involved but a genuine distraction of the eyes from this region of the body: go right ahead and look at it, but take note from the signal fixed at the right spot for what this is the proper time and for what it is not. These born children of art simply have to employ adornment everywhere where there is a place to hang it on.

The purpose which the little rolls and *uluris* serve for the women is obvious: during menstruation they serve as a bandage and blood absorbent, as a sanitary napkin in the truest sense, as civilization still uses them to-day in Bakairi fashion deep down beneath all its clothing.

Karl von den Steinen attempted an ingenious proof of the idea that the origin of all practices of covering the private parts went back to such hygienic purposes of races that went about naked. According to Steinen, they also served the general purpose of a closing device to keep out invading vermin in the jungle. From his own observations he drew a lively picture of all that could happen in this respect in the wilds of Brazil. Those who go bathing in a river are menaced by the kandiru fish (*Cetopsis candiru*), a little transparent monster one inch long and one of nature's most horrible inventions. With particular malevolence it slips into the duct of the member, fastens itself there by means of its fins and forces the native to perform a most uncanny operation on himself. When the Brazilian Indian wants to tell a tall fish story he tells of a born Jonah who was relieving himself on the bank of a river when suddenly one of these fish made its way up the jet of water and crawled in. But it is even worse in the woods. Vicious ticks (Capricorn beetles) rain down from the branches on all sides. They suck

themselves fast, pump themselves full of blood like a cupping-glass and cause the gravest inflammations if you tear them off clumsily. The clothed Brazilian wages a desperate battle here. For these ticks as well attack just the most critical parts. "When one of these parasites has bored into the glans, the native is accustomed to go for it with the lighted end of a cigarette and come just as close as his own sensitiveness can possibly stand, so that, menaced by the heat, the little animal will voluntarily cut short its stay and withdraw out of the mucous membrane without being torn to pieces." The hammock was first invented in the Brazilian forest, as a protection against the fiends of the insect world crawling on the ground. How obvious it would be for the naked savage in the end not to know what else to do but equip the threatened lower openings with artificial locks.

I do not deny that such compulsion was a powerful motive leading over from the simple symbol to the closing device in particular regions. But Steinen himself points to those other hygienic matters such as the stretching of the foreskin and interprets them as auxiliary motives. Thereby the way is immediately opened into love-life: it seems to me that respect for the erotic symbol as such is indispensable. All those hygienic matters become small and of secondary importance against that. After all, the plague of ticks is too small and local when held against the tremendous question of shame!

These naked aborigines of Central Brazil appear as most instructive examples of an entire stage in every respect.

They already consider the act of love to belong in the strict privacy of two people. All peoples living to-day have undoubtedly attained this stage in principle; it extends beyond our knowledge back into hoary antiquity. For this very reason, the border line between naked and naked has already so distinctly reached the peak of the symbol among them: without the symbol means "erotically naked"; with the symbol means "socially naked, everyday nakedness, nakedness as working clothes and society dress, so to speak, but in any event anti-erotically naked." The symbol is distinctly developed in many different ways as a closing device. On the other hand, it is practically not developed at all as a real covering and concealment of the sexual region.

An extremely interesting thing about these Indians is their relation to clothing. They are naked; but according to our view that would simply mean that they are unclothed again. Strangely enough,

these nudest of the nude have known the use of clothes and how to make them from time immemorial without having been taught by European visitors. They know clothing as the old traditional carnival costume! The masquerading instinct stirs from time to time in this highly imaginative people. The whole male part of the populace is carried away by mad dances with still madder masquerading as if these doings were suddenly the most important, the most absolutely necessary thing in the world. The women are not allowed to be present; that happens to be a hallowed custom, just as we have a humorous separation of the sexes during the Cologne carnival in the form of gentlemen's and ladies' committees at this topsy-turvy time of buffoonery. And these masqueraders now wear veritable fancy-dress; the naked are suddenly costumed! Caps, coats with sleeves and long pants are fashioned of leaves and straw. Their imagination sees different kinds of animals in these grotesque affairs: the naked human being disguises himself as an "animal" by putting on furlike clothes! Our good friend the Bakairi has no inkling that clothes are "more modest." As if to demonstrate it with intent, he hangs a corn-cob as sexual member on the outside of his pants. No strictness about symbols is required here in the men's club; the fancy costume passes for an "animal"; moreover, in all civilizations carnival time has a trait of letting off erotic steam generally about it among all peoples.

Might not a very ancient reminiscence lie in this knowledge of clothes? A dark tradition about an age of clothes somewhere which the savage of the tropics who has become naked still harbours? Carnival customs have an incredibly conservative element in them: the old city militia lives on as if it were immortal in the carnival on the Rhine, and when there are no longer any monks in the whole world otherwise, you will still find them at the masked ball.

§ 10

A child uses a stick as a horse. Any tiny resemblance is sufficient as a signal for its imagination automatically to supply all the rest. The grown-up wants a real horse; he is a sober realist compared to the child; to be sure, he also draws the useful conclusion from the real horse that it really carries him along bodily.

The life of races goes this way too.

The more realistic their thinking becomes, the more the shame signal is transformed into an actual covering. Genuine fig-leaves, aprons, real "bathing trunks," which achieve their purpose by interrupting the whole line from the sexual organ to the organ which I characterized several times before as the erotic distance organ of the first magnitude, the eye, make their appearance. If one is not supposed to think of erotic things, the erotic region must not be seen at all! That is cruder in principle, but in all doubtful cases it is unmistakably much more effective.

It cuts off a whole mass of possibilities. What the eye does not see, the heart does not grieve for. If ordinarily I no longer see any sex about my fellow men, I am ordinarily going to forget more and more to feel as a sexual being.

A tendency was bound to make its appearance at this point to keep certain parts of the naked body ordinarily clothed indoors in the Eskimo hut as well, as an erotic barrier. And among peoples who no longer sought the artificial protection of fur outdoors, this form of protection also was bound to result in covering up certain exposures.

The only question was how far this should be carried. The old truth held good, that not merely the genitals but at bottom almost the entire body belonged to the act of love. You will recall how sensual pleasure is really attached to the entire skin; a noticeable remnant of this still exists among us. In the end the symbol came to include everything in one thing, by turning the mind aside generally. But there was no end in sight, if one really wanted to cover things with drapery and conceal them from the eyes. You noted how the symbol already shifted around from the sexual gateway to

the navel and even to the posterior. In this stadium of clothing you actually do see all these places immediately swept along into the modesty movement. Then woman's breast becomes important as an alluring region calling to mind eminently erotic things; it too becomes "eclipsed." And so you see a total eclipse of the sun for "reasons of modesty" once more grow over naked man bit by bit, like a new animal fur. You see peoples who have remained standing still, at all possible stages of this process to-day.

An involuntary trump, but in the end the biggest one of all, was bound to be put in play where the climate eliminated nakedness generally, not only outdoors but indoors as well, in favour of more or less permanently clothing the whole body.

Civilized man is normally clothed outdoors as well as indoors to-day, and not merely for erotic reasons. One day the ice-age retreated from his latitudes and logically handed him over to the temperate zone. The contrast of the Eskimo fur disguise outdoors and Eskimo nakedness indoors lost its sharp character thereby. The intermediate climate urged man toward a middle stadium in the matter of clothing. Average clothing was developed for both outdoors and indoors, and as a rule this was no longer taken off in social intercourse. Outdoors in winter, it was merely reinforced with additional coverings, coats for instance; indoors, this addition was shed, but not the foundation; domesticated man in the end undressed only for the purpose of sleeping and did so in the dark or at any rate where eyes were shut, by an act in which man still preserves something of the old animal wish to isolate itself as much as possible, to creep into a hiding-place, to keep behind closed doors. You can observe instances of atavism in this respect among nascent civilized peoples of the north in olden days. When they were worked up to highest fighting pitch, the old Teutons once more went into battle stark naked. It continued to be the regular practice for a long time among us to sleep naked, till the shirt triumphed here as well. The higher the focal point proper of civilization mounts, the more does nakedness disappear from the profane life of sociable human beings for all possible practical reasons without any intentional connection at first with concealment for reasons of shame. But this connection cannot fail to materialize as a grave consequence.

The more rarely the nakedness of almost all parts of the body is still seen publicly, the more acutely must it now coincide com-

pletely with the erotic element when it does appear anywhere before a human being of the opposite sex. "To take off one's clothes" acquires an erotic shade of meaning! Denudation becomes a matter of decency, absolutely so and not merely applying to individual parts, because it arouses erotic associations and these associations release feelings of shame. The association of "erotic" and "sleeping," which keeps on becoming more and more intense, is highly characteristic. Other connections play a part here, but the one is particularly powerful, namely that sleeping together requires erotic permission, as it were; it presupposes something erotic. Once this is under way it automatically reinforces the general compulsion to wear unerotic clothing.

The grand climax is that "naked" and "erotic" finally become practically absolutely synonymous, and naked man disappears entirely from public society, because he is erotic man and as such he must be covered up for reasons of shame.

We ourselves are standing on the great divide of this evolution to-day. On the one side we have brought ourselves to the point where a civilized being possessing sensitive nerves would blush if he were to let himself be seen naked in public. On the other side, to be sure, a reaction is arising against this very thing.

Let us cast a fleeting glance at this present problem, which results so clearly from the simple consequences of primeval things.

There was a necessity for the growing disappearance of public nakedness at a certain stage of civilization, but it also entailed a dilemma.

It is not at all difficult to write the history of civilization in such a way as to make it appear as a triumph of mankind's awakening noble spirit that civilization keeps on clearing bigger and bigger fields in which the erotic element in the narrower sense is not permitted to be a disturbing factor and absolutely and ruthlessly sacrifices this naked element, just because nakedness plainly has an erotic connection. The greater become mankind's tasks and problems, the greater grows the need for strict regulation of man's work. The erotic element is to keep a place all of its own, but it must not grow rankly. Tremendous goals, with which the erotic element has nothing directly to do, are set up. The attainment of these objectives would be disturbed if the erotic element mixed in. Therefore, away with nakedness, into the close confines of secrecy, into the

locked chamber, into the night and darkness. All this is quite right and as it should be, as far as the idea goes.

At this point you can bring on the argument that the rôle of the individual human being, of the intellectual individual within civilized humanity has become an incomparably greater one than ever before. Beside this fact, the preservation of the species by means of sexual love and everything connected therewith has almost entered the stadium where it merely enjoys equal rights as far as our attaching values to things goes. In the case of the animal, the individual is always essentially a wave in the direct line of the species, and its life seems to be completely exhausted in the physical work for the maintenance of the line. Its life work is love in the narrower sense of the word. Conversely, in the case of man at a certain height of civilization, the individual as such possesses a totally different terrestrial latitude, a totally different way of getting a firm foothold on earth; and the pure wave of love is far from being the sole decisive factor for the individual any longer. Humanity has other and totally different, intellectualized means for the individual to exert his influence on posterity than merely love. It holds up a book, a row of volumes, Goethe's works against a heap of spermatozoa. Whoever can create such books has a right not to let himself be disturbed by the world of spermatozoa for as long a time as it takes to produce those works. And if they cannot be removed from the field of vision in any other way than by covering up all nakedness in public life, well and good, let nakedness go by the board.

This is all very splendid, viewed ideally. For a moment you can even carry this line of thought much further, with a certain historical justification.

Renewed attempts keep on running through the history of mankind's civilization to create "non-erotic man" as a special type in the face of the growing demands on brain work. It is the idea of producing the purely intellectual man, at least as an individual phenomenon in the usual run of human beings. This individual is so completely absorbed in the performance of his purely intellectual work that he would like to have the erotic element disappear forever out of his life.

Here you have one of the roots of ideas which have driven men to asceticism from olden days of civilization; we shall discuss another one of these roots later on. This idea extends back to the

coarse stories about Diogenes, the cynic in his tub. He practised onanism before the people in the public market place, the story runs, in order to prove his contempt for all things erotic. But behind this grotesque picture, in all the deep current of Hellenism there is the fundamental thought of that very experiment of separating the solitary intellectual human being who is chained to humanity only by thoughts from the human being who feels as a man or a woman, as an erotic half, and who wants to build the road to humanity via spermatozoa and ovum-cells. It is this same idea which forms the original, really deep core of ecclesiastical celibacy: the dream of "consecrated man," who is to be exclusively a carrier of the spirit on earth and therefore renounces the erotic side of life in the bloom of his years and health under voluntary division of labour.

At this point, the deeper underlying idea invariably became inseparably connected with the other idea which does not belong to it; namely that love not merely has "its time" and perhaps its "human being" even but that love is itself something bad, something Satanic, something that drags men down. And it might be added that within the organization of churches the celibate was bound to bring to a head all the pernicious results which an idea, be it never so pure, engenders when it gets into the arms of the Iron Virgin's compulsion, authority, powerful pressure and party discipline.

On the other hand, this same idea again and again led the noblest, purest geniuses of mankind to a celibacy of voluntary renunciation far removed from churches as well. We so frequently encounter this in the biographies of great poets, painters, composers and scientists, when the layman goes looking in the lives of the mighty for wilder excursions in love than the average man's and the biographer has to confess that this particular page is far blanker than in the case of countless ordinary humans.

It cannot be denied that civilized nature at its best has gently experimented in this direction from time immemorial.

If "erotic" and "naked" are permanently to be one and the same thing, this wholly non-erotic type of humanity would have to exclude the visible nakedness of others completely from its life, radically and forever.

This extreme train of thought, which goes so far as to draw the line of erotic and non-erotic between man and man, must always hold a weak position in the face of that simplest of doctrines which

has been preached by tiny animals on earth for many more thousands of years than our whole civilization has been at work. Against the living lesson of the bee state and the ant state! There you have the species split up into three different kinds of individuals: male, female and sexless working beings. Many thousands of unerotic working-bees are opposed to the one queen with her erotic disposition. What has been the result? We already spoke about that. The result was a paralysis, a petrification of the whole instead of intensification, an old maidish, unfruitful trait about the whole performance of work, with the individual completely reduced to an organ that automatically rattled on instead of the triumph of the individual which we hope for in our own case. It will not help you any to say that among us individuals are already too powerful for anything like that to happen to them. Sexless individuals, elevated to a principle, would in the end invariably bring about a decline, all the more so because they would become a power among the masses. Imagine them to be the greatest geniuses, scientists, teachers, the intellectual masters of mankind: in the long run humanity would get unspeakably poor counsel from such an élite which was a total stranger to the tremendous force of love in the more specific sense. "If he have not love" . . . that saying has its imperishable truth in this sense as well. If we want to elevate the individual on a shield in our highest humanity, then all the more shall we always need the harmonious individual for that purpose, the individual who, at least in principle, is not a cripple and therefore not an erotic cripple either.

Warning examples inspire wholesome fear. What an abomination it is when in the midst of our civilization we occasionally experience the spectacle of some one whom we had to hold in the highest honour as a scientist, philosopher or true friend of the people suddenly turning around and showing his other side, the consequences of that one-sided barrenness; when he begins to inveigh fanatically against the sacred mysteries of love and procreation and slander youth's abundance of buds and scent of flowers and even denounce art as lewdness, when it is compelled to keep nakedness from its standpoint; when he gets to be like the wretchedest civilized barbarian of the bottom-most stratum, to whom all love is only smut, every young woman who gives herself in love only a prostitute, and all art only an idle whim for killing time.

Here you have the perfect reverse of a world historical tendency.

But you do not need to go that far in order to note that the simple elimination of nakedness from ordinary division of labour in our civilization and from its secular life keeps encountering a certain dilemma which is ever new.

For as long as the fight has lasted in our civilization over the eradication of the nude in public, two principles have fought steadfastly against this. A heritage of primeval factors which once upon a time directly assisted at the birth of nakedness—from whose alliance nakedness sprang, was inherent in both of them. The one principle was youth's need for erotic selection and erotic attraction; I am almost tempted to say "spring" instead of youth. The other principle was art.

Even if you morally banish everything, from the kiss on, that has directly to do with sexual love, to the strict privacy of two people, everything that has to do with actual erotic attraction in the realm of distance-love is and remains a public act. In order to be found, physical beauty must first proffer itself in some way or other, and it is impossible for beauty to be content with offering merely a nose or the tip of a finger in the long run. Morality on its part may draw the cloak up over the ears, but beauty, youth and spring will ever try to negotiate for a loop-hole at which they can let something be seen.

The erotic element's justified desire to achieve its end and be a whole human being and therefore a publicly visible one as well lies in this fact. A beautiful lass keeps her erotic character even if you see merely half a lock or the tip of her finger. All living young beauty is competing in the world's beauty show and that is as it should be. Almighty Eros wants more to be seen. A very profound principle of improvement constantly working upward in the world, an eternal factor of progress permanently rests on selection in the matter of beauty for continuing the species.

The history of all fashions in clothes is an incessant struggle of Eros, who disrobes again in public, after all, with morality which covers up and conceals. Morality seeks to isolate sexual love and in so doing it extends its influence into distance-love. Love-selection and amorous attraction, which are equally necessary, must save distance-love and in so doing they disturb morality. This results in an eternal swing of the pendulum backward and forward; and humanity had to wriggle through as best it could and still has to.

A powerful ally for a certain kind of public nudity arose in the form of art in the course of this quarrel over nakedness.

With the utmost energy as well as openmindedness, art claimed the naked human body for its own as a permanent æsthetic value. It was not concerned either with crude utility, which permanently covered the body with clothing for climatic reasons, or with the finer question of utility, which covered the body for reasons of erotic protection. To art the nude body in its utter nakedness extending even to the most critical nooks and crannies was simply a harmoniously beautiful object having infinite symbolic-artistic connections which it could not possibly suffer to have torn from its grasp. Nothing in the world ever pursued its straight way in such demon fashion into the highest civilization as did art. It did not bargain nor haggle nor engage in carefully weighing utilitarian reasons against one another. It broke through as the incarnation of a very profound cosmic sense of the importance of the harmonious element at any price, not to be stopped even in the face of all other instinctive reasons and all reasons born of consciousness, like one of those tremendous tidal waves which level the changing surface of an entire ocean and which absolutely go over the head of all the little cross-currents in the ordinary play of the waves.

If morality constantly tugged at the cloth and tried to pull it up higher and spring constantly haggled to have it a bit lower down, art calmly took away even the fig-leaf from its human being and laughed at any one who wanted to put it on again. At times it did have to stomach this at the point of the bayonet, but its laughter was so terrible in the long run every time that the guards fled: it was the cry of the great god Pan in humanity, coming out of the woods. Art bestowed a separate, quite incalculably great advantage on the erotic element by its unswerving direct action.

Let it be clearly understood once more that in its nature art was never erotic in the real sense of the word. It is true that the root of rhythmic feeling which is an element in individual sexual selection exists in art as well. Everything erotic has an æsthetic trait in this sense. But where art and not living love-selection springs from this root, art goes its entirely separate way beyond all eroticism. Where art once is, it tolerates no other gods beside it, not this giant Eros either. To be sure, it uses erotic material as well, just as it makes use of the naked body. How would it be possible for art not to do so? Everything, absolutely everything, belongs to it as material. The Girdle of Orion on the firmament as well as the bridal pair on love's rose-garlanded couch. It has the right to flash its electric

torch into every kind of darkness and to remove any and all garments. But all this is on the basis of the inward sacred covenant which provides that art has nothing to do with direct erotic excitation leading to love-selection, to sexual intercourse, to real love in flesh and blood; just as little as art seeks to excite and satisfy hunger when it paints a basket of fruit, or to keep you warm when it fashions a garment in marble. Whoever takes an artist for a cook or a tailor is just as much off the track as one who sees a procurer and white slave dealer in the artist, be his work never so nude.

The aim of all art is a higher, more universal world belonging to all and removed from the individual, the momentary, the temporal, the evanescent element. Art is a nature of its own, but at a higher stage; not merely the same thing as nature repeated once more. As erotic attraction, art would be committing plagiarism instead of creating new things.

These matters are commonplaces in themselves although there are still countless people to whom you first have to tell them. In our civilization, platitudes as a usual thing are truths which a definite, limited circle of people possess so firmly as to find their mere mention tiresome while round about there stands a crowd to whom they seem like a wonder conjured out of nothingness.

Though art is a total stranger to erotic attraction, it has from time immemorial proved of great indirect advantage to love-selection.

Occupation with art constantly sharpens, improves and intensifies the fundamental rhythmic sense, and since this sense in turn plays into love's corporal search for beauty and selection of beauty, art must indirectly prove a favourable factor. Eyes which have been brought up in an artistic sense must in the end prove their worth in rearing a humanity which is physically more beautiful. An artistic ideal which has become finer imparts its colour to procreation, as it were, without art itself sacrificing any of its dignity in so doing.

In this complication, which sought to banish all nakedness from public life because of its erotic connection but in so doing came into conflict with love's springtime of choosing, art's assistance assumed particular importance for the springtime of selection. By its nakedness, art gave exercise to and refined erotic vision at a time when real nakedness generally threatened to drop out of man's comparative field of vision.

The more morality became a protective measure which of abso-

lute necessity had to be respected along with the great spiritual tasks of humanity and therefore came to enjoy first rank in all public life ahead of every breath of love's springtime, no matter how hot, the more difficult was it made for eroticism, along with the eclipse of the naked human body, to have a deep fine feeling for a progressively perfected ideal of the naked body.

The more the body was generally and permanently packed up in clothes, and nakedness, as after all was extreme morality's wish, now appeared only in a dark chamber at night, the more was the sense for nuances of nakedness in connection with love's selection bound to become dulled. If the female breast or the line of the back or the line of the thighs could no longer be seen openly by bright sunlight and in the free play of muscles, the eye and the imagination in the end lost all power to grasp the characteristics of true beauty in choosing erotically. Love-selection became devoid of ideals, it lost its directions for seeking what was best and most harmonious. With this, the body's beauty itself declined according to simple natural law. Ignored, the nude could decay under its clothes like a poor neglected prisoner in a dark dungeon, without erotic selection being able to help out.

As the pendulum swings in the history of civilization, times keep on recurring when a low level in this respect really becomes menacing, when the rope drags along very close to the bottom and the body begins to degenerate inside its clothes.

In such times of danger it was art which again and again helped to save the ideal for the erotic element as well, without itself having to depart from its own straight and narrow way in so doing.

When we were head over heels in clothes and had happily succeeded in driving out the erotic element almost entirely in getting that way, art suddenly hurled stark naked man at us on all sides and at the same time placed the ideal of the naked human being before our eyes and drummed it into us at the very moment when we had almost lost it in life. Far from the reality of the nude, we were yet compulsorily and incessantly fed full with its ideal picture in a higher reality. Naked Adam began to be a total stranger to us, but in return art fed us with Praxiteles and Michelangelo. It was Hellenism above all which during two thousand years thus salvaged naked man in transfigured beauty for us in such a way that our erotic imagination could continue to satisfy its

hunger to a certain extent and remain functionally efficient, in fact even receiving a constant slight education of its taste.

You must not conceal the fact from yourself that the assistance rendered by art has its limits in the long run. All ability to choose æsthetic values will not help alone, if choice itself can no longer be practised and all comparison becomes impossible. There is a true sense to the stories in our humorous periodicals about the bride who until her wedding-night can be inferred almost entirely from suppositions only and whose real body then turns out to be such a tissue of mistakes and artificial expedients that hardly anything remains left of it.

Despite all our art and education in matters of art, we are emerging from the deepest imaginable trough of the waves to-day as far as the beauty show of the body goes, and all our artistic ideals could not always help us.

This very contrast between art's naked ideal and our clothing, which keeps being ever more tightly buttoned up, has led to a direct mistreatment of the body in individual cases among us.

If one undresses a considerable number of civilized women to-day, the naked body betrays the uncanny distorting effects of artificially constricting the waist by means of women's favourite clothing. The ideal of the female body, as all masters of the great artistic line see it, is maltreated and falsified in barbarous fashion thereby. And at the same time nature's original handwriting is spoiled to the point of insane unhealthfulness by the pressure on the internal organs. Schultze of Naumburg latterly demonstrated this with the most drastic figures which no friend of the female body's harmonious beauty (which at the same time signifies the harmony of health) can look at without being filled with horror. It is very easy to show what drove our women and girls to proceed against their own naked bodies in such a suicidal fashion.

A sly trick had slipped by from time immemorial. In luring springtime's desperate bargaining with concealing morality, wearing clothes was agreed to as a concession but at the same time they were put on by the erotic need for exhibition in such a way as to reproduce the plasticity of the naked foundation as distinctly as possible. The peak performance in this respect consists of the tights worn on the stage, which to me are one of the most atrocious things I know, since in reality this very contrast between the dead,

cold outer garment and the living human skin is carried to extremes under the guise of reproducing genuine nakedness (although the cold form is salvaged for the eye).

Possibly you know Vischer's pamphlet on "Fashion and Cynicism," in which this splendid old fellow, who otherwise cannot be praised highly enough, proclaims with alarm the discovery which he made very late in life: the simple fact that the need for the erotic ever silently endeavours to produce nakedness externally on the clothing again, as it were, as long as one cannot get along without clothes. In his fright, Vischer denounced this to morality as unheard of cheating. Had he remained true to his own æsthetics on this score he would have seen the sole really dangerous side of the principle, which in itself has absolutely nothing to do with morality.

This imitation of the nude by means of clothing has led to such unfortunate aberrations as the artificial disfigurement of the waist. In the living naked body which has not been deformed as well as in art's naked ideal of the Venus de Milo for instance, or a creation of Titian's, there is a very particular agreeable character about the lines of the breast, the sides of the body, the hips and the back. The effect of these lines is just as beautiful as erotically attractive. In order to produce something of this externally, even though only in caricature, the real naked body had to be put in the bed of Procrustes. The corset drove red-hot torturing irons into its flesh in order that the silhouette of the waist might acquire an approximate resemblance to the æsthetic-erotic ideal of the nude. Unspeakably crude as clothing materials are for such imitations, this at bottom did not amount to much more than a symbol of what was desired externally either, and this was soon exaggerated as a mathematical figure to the point of utter craziness, so that woman's outline finally came to look like an hour-glass, losing all threads and connections with anything whatever. The real foundation of skin and flesh and bone was flayed alive for the sake of this hour-glass. But not a soul said anything about that because nobody saw it. At least nobody saw it openly in the undimmed light of day.

A mene tekel shines out of cases such as this. Dress reform in individual cases does not get at the root of the evil.

What we really need is to see far more of the living naked body once more. The problem is how to attain this goal without wantonly destroying the justified protective walls of morality, an under-

taking which would be utopian anyway since humanity does not suffer anything to be destroyed which it needs.

Fortunately we still have very isolated cases where we can endure a great deal more nakedness without unleashing the erotic element, for instance in bathing, bathing in water as well as in the air. This is proof of the fact that we are really much stronger inwardly than we usually credit ourselves with being.

I believe that we could very well pass on from this point to regain a possession which was lost to us only at a very late stage of evolution—for the most part naked gymnastic exercises. If this practice were begun in early years, when the erotic element was still a matter of total indifference, we might very well spare ourselves the horrible sights which a bath-house full of those who have grown up in clothes offers in such multifarious forms—a menagerie of deformed, neglected, miserably kept, crooked, skinny or superfatted bodies. If one were accustomed to see one another naked on the floor of the gymnasium from an early age, and to criticize every change in one's naked body, and above all if each one at the same time regularly saw in himself and others the ideal of beauty and health, a great step forward would come about quite automatically, which would save us a lot of doctors' bills and which would improve the race by self-criticism and the criticism of others of the same sex, instead of our being on the road as now to develop our heads alone on degenerated bodies. Millions of years ago the Atlantosauri foundered on the diametrically opposite peak: they finally acquired bodies like peripatetic mountains with tiny little heads on them like the tip of a tail, in which a brain was lodged that looked like a grain of sand! In any event, this would prove a decisive elementary school for love-selection, particularly if the female sex would practise it among themselves.

Only after nuder gymnastics engaged in by both sexes separately had generally made our sight more and more "innocent" again in the face of partial nakedness could the problem be narrowed down to whether at times when both sexes are together much more might not be shed than protective morality considers necessary to-day.

No one with any sense can deny that a large part of our civilized covering up and concealment is sheer inconsistency. The ballroom suddenly bares an abundance of feminine beauty, the sport of rowing does the same to a large amount of beautiful masculine muscularity and everything passes off easily and smoothly without any

one rebelling. Simple caprices of fashion suddenly open up a bit more here or there and calmly get away with it, without bringing about the end of the world. The task obviously is not to abolish but to restrict clothing. Lastly we must at some time wring the neck of that atrocity, masculine garb as now worn in polite society, and every reform in this direction can only achieve a bit more of spring-time's demand in that sense, for we had already gone to the craziest extremes and the only thing we can do is to unbutton for the better and get some air.

Naturally you must not demand nonsense in the way of too much in this respect. You cannot with a mere demand suddenly argue out of existence the ancient connection between a very definite kind of nakedness and erotic excitement, which happens to be bred in us from time immemorial and forms a factor in our specifically human love-life.

That really would bury the whole matter again. A last relation between nakedness and eroticism and their mutually releasing one another must remain behind the veils which nature's great mystery must under all circumstances have recourse to, simply because it is the real harmony of the inseparable burning up in the selfsame flame.

We must not make ourselves artificially dull to and harden ourselves against this latter effect as we human beings happen to be to-day, with human senses and the human associations of our apparatus of love.

Because of this natural necessity, living nakedness must never become the mere nakedness of a statue; in some form or other we need the old direct sensory natural magic in it now as before.

And because this is so, a certain delicate fragrance of erotic enchantment will ever remain and must remain about all nakedness of the opposite sex in public as well; it cannot be otherwise. This applies even to the nakedness of the face which our northern civilization has been exhibiting so ingenuously to all the world from time out of mind. Where can this subtle magic at times dwell more seductively than in the beautiful eyes or on the red lips of a girl?

Be it well understood that very fine effects are involved here, which in the final analysis do not lack the erotic element but contain it in such a discreet form that morality need in no wise suffer thereby among healthy human beings who feel genuinely and have control over the degrees of their erotic feeling.

The task should be to draw a whole further field of nudity into the sphere of these discreet effects, without having to deny entirely that the effect itself does exist in this discreet sphere as well. There would still be plenty left over for the solitude of two individuals and the border-line between discreet and "all," impulsive, elemental, and boundless would be the real turning-point which first would separate things, the really decisive point where the feeling for public and for private erotic nakedness would be hermetically separated now as before. This border-line could be shifted very far in a material way.

In the end, everything would depend on man's proper adjustment to the fine, discreet, restrained element in the effect and the reception of greater public nudity without impairing—even necessarily so—certain permanent connections here with the erotic generally and above all with distance-love's selection.

In the final analysis the solution of this problem depends on the answer to the deeper question whether you believe in a progressive strengthening of the inner moral harmony in the human spirit, which is able to put its feelings in order and set its own limits. If you do not believe in this irresistible ascent in the "most human" element in the human being, then it is after all a matter of complete indifference whether humanity degenerates and whether it goes to ruin as a result of too much or too little nakedness.

But if this ascent does take place, the point must finally lie somewhere along the line where man will to a certain extent consciously achieve again by his mastery over himself and by the moral harmony that is within him what the naked savage with his naïve imagination already knew in so many different ways. He must feel the capability in himself by virtue of unswerving decision and unshakable self-limitation, of viewing the public display of a much broader field of nudity in the opposite sex with absolutely discreet eroticism; in fact once in a while in some occasional very markedly non-erotic connection practically entirely unerotically. In so doing, man can get along without a special symbol for this limitation, for it lies in the whole spiritual connection itself.

Art also can naturally help in an educational way to gain this standpoint by generally teaching us to look at things once in a while with an eye merely to their ideal beauty without any desire for them; to look at an absolutely nude man, an absolutely nude woman without the last fig-leaf even, in the naked purity of a

work of art. Something of the spirit of calm which the genuine artist has helped to disseminate in the world from time out of mind in this sense can certainly do no harm in life either. The artist occasionally reaches the point where under the spell of pure artistic desire freed from all other cravings he can behold and depict the real naked model, not merely marble but the warm naked human body with considerable calm even.

This again must not be carried to extremes, for if it must be the higher law of all human spiritual order that art shall not exert a direct erotic effect, conversely it must remain firm as a rock for the normal case in life that a beautiful bloom of young womanhood is not merely a work of art to us. A young woman has her additional sacred special purpose for humanity. To strip a human being naked, cover him with plaster of Paris and set him up as a statue is as much an act of violence as if some one conversely wanted to embrace and kiss the Venus de Medici. The naked human being and the marble Venus are both too good for that.

In a very similar manner, the purely scientific way of looking at nakedness, say the way the physician's eye regards nudity, can educate us only conditionally and in moderation.

It also teaches a standpoint beyond desire, a form of contemplation *sub specie æterni*: as there in the sight of the ideal which is already realized but yet is not conceivable in this artistic form with erotic organs, so here in the sight of abstract objectivity generally, of purely objective existence which likewise remains separated from our erotic desires by a mysterious diamond wall. Naturally this too must not go so far that it simply makes us cold toward nakedness.

From their standpoint those two roads point to the same thing: that there are growing forces in man as he ascends higher, forces which, to speak with Schopenhauer, in definite cases are able to concentrate us ever more powerfully on pure conception, on pure perception with a temporary submergence of the will that really desires.

The will to procreation as well as the will to love-selection are by no means to abandon us; we will not go any further with old Schopenhauer here. But cleverly curbing the will by means of an idea in our public intercourse is everywhere a decided gain of progressive intellectualization in our noble humanity in all fields, and therefore may it profit love as well by gradually making pos-

sible more public nakedness again . . . nakedness which just because of that mental curb does not injure morality and which yet fulfils the imperishable demand of spring and its love-selection in a far more genuine form.

Bright future world of a better Hellenism purged of its dross: where morality and nakedness, the pure consecration of art and the hot scent of love's springtime can lie down together on a common flowery mead without disturbing one another, while the white temple with its holy curtain drawn before the deepest mysteries of life as of thought still towered to the blue of heaven . . . when shall we emerge from the deep shadowy vale of our errors and reach your Island of the Blessed?

Meanwhile the greatest kind of a difficulty, which is by no means a matter of principle but as things are now is the one which is most dangerous to us and checks us the most in a practical way continues to stand in the way of any powerful rehabilitation of nakedness.

The harmony of the spirit which alone could confer those unswervable forces of the will requires a certain healthy balance in all directions, a harmonization of the instincts in man in the face of all things and therefore things erotic as well. I can consciously desist from something for some moments and can discreetly restrain desire for the present if I am sure that I shall have it wholly at my disposal at any time when the proper moment comes. On the other hand, if I am convulsively nervous and overwrought in seeking it, I shall flag in the face of that demand as being too heavy; it will continually cross my path and pursue me nervously just as I myself follow it in my over-excited condition. Seen from the standpoint of a proper harmony in my food conditions, I can enjoy the grapes in a painting without the idea of grabbing for them ever rising up in me. But some one who is starving to death will reach for them; and when he feels that a smooth canvas mocked him he will curse.

A vast number of civilized human beings are in a state of this very decided disharmony as far as things erotic are concerned, and this shifts sexual matters far beyond their moral power, be it never so strong. They cannot put the brakes on discreetly because a subjective instinct in them is too burning, too overpowering as a result of its non-gratification. In a vast number of cases civilized

man is not the healthy human being who says "everything in its time" and who tempers his eroticism accordingly, rejoicing in it but always having it in his power on the outside of the sacred veil; he is the involuntary ascetic, in whom desire roars to be allowed just once to live the erotic life to the limit and who stares through all cracks to see if it never is "time."

Gnashing his teeth, he bows beneath the yoke of morality because it makes him forget for many moments at least what he so passionately desires and never attains. And with the fiery eyes of the fanatic he curses not only the ingenuously erotic naked human being but even art as well as science, which unmindful of it from their pure viewpoint rehabilitate the entirely nude, and in the face of them he calls for the mantle of "morality," exactly as that poor starving individual covers over the painted grapes so that they may not continually excite him without really sating him physically.

This unfortunate individual cannot know the true rôle of morality which discreetly curbs, nor the true rôle of science and art.

Genuine morality is a wise diet for healthy human beings. Genuine art is a show beyond good and evil, which likewise postulates people who draw healthy distinctions. A sick man cannot do anything with either of them.

Whoever enters a museum full of nude statues and pictures suffering from chronic physical and mental congestion of the blood is lost for the "purpose" of this museum from the very start. How could he stand the moral test in the face of animate nakedness! It would be asking more than is humanly possible of him.

It was one of celibacy's fundamentally evil sources of error that it systematically created such unsatisfied individuals, such sufferers from an eternal thirst for the erotic in its extreme form, who did not become indifferent voluntarily but became intolerant because of their inner uncertainty. Every source of intolerance, however, is a fundamental and an arch danger to the ascent of humanity.

Infinitely worse than all religious celibacy which after all had at least an "idea" in it and always affected a tiny number of human beings is the celibacy which continues to be forced upon people in our social life to this day for social, economic, nakedly material or alleged moral reasons, and which weighs on thousands and thousands, not theoretically but in a practical way.

In the case of many people who to-day talk and write about nakedness, morality, science and art and who occasionally even

clamour for laws aimed against the freedom of science and art, against nudity and eroticism which allegedly is dangerous to morals, I again and again keep seeing this hollow-eyed spectre grinning over their shoulders, their life's unredeemed Bride of Corinth, who sucks out their healthy blood.

Only radical social reforms can help here. And a main part of the changes in what we call the morals of society in the narrow-minded provincial sense will depend on them in turn. Social progress is fortunately subject to its own very definite laws of evolution; it comes about with the might of an elemental force of nature when the cup is full to running over and all the fear and reactionary wisdom of the individual does not change it any. Here too it is the genius of humanity which breaks through, in all cases, as it always has broken through. It is the genius of nature itself at its stage of man, hence its force of a natural law.

The thing that we have so often touched upon in the earlier part of our conversation will be of decisive importance in this connection: serious education to gain respect for the erotic element itself. These wonderful processes upon which the continued existence of humanity rests must in the end and at the proper time come to be recognized, exactly like art and science, as something absolutely sacred, something which inwardly is absolutely clean, to which morality prescribes its time under the great division of labour in human work on earth but which in itself stands at the high level of a moral deed like every other very noble performance of man's.

The observer is seized with horror when he sees to what a pariah's life with all its ravages our sexual life is still delivered up to to-day.

The crown insignia of our earthly immortality are in the hands of ignorance which does not dare to ask questions because it is ashamed.

Do you know the picture of Psyche who goes in the night, lamp in hand, to sleeping Eros because they have talked her into believing that he was really a hideous dragon? The burning oil from the lamp drops on the beautiful naked shoulder of the sleeping god. When will our civilization cease to play the part of this deluded Psyche?

How long will man's inner harmony, his highest possession, continue ailing and suffering because this stone in the crown is not polished just as brightly as all the others. . . .

A dream of the future! But the future is not a dream.

§ 11

The old lamp in our cloister casts a sallow beam. Shadows pass over the wall in the corner. When you look at them, they seem to stand still. Then they wander on again. . . .

Once more you have dispersed a series of clouds with your Faustian brooding. But the witch's cauldron of humanity keeps on boiling and boiling. Bubbles rise up and burst. And the blue steam whirls above the rim and passes on in humanlike shapes, ever more of them.

One thing more comes wandering up out of this question of nakedness. A hand, which points to something else, something tremendous about primitive humanity in the process of coming into being . . . which once more refers you back to the very beginning of human things.

The mist condenses into a form.

It is a Mohammedan woman. She remains standing in front of you motionless, like a cloud.

The culminating point of covering up for reasons of shame is reached here: the face too is rendered invisible to the profane eye by the thick veil. A curtain that walks around, an animated heap of cloth in which the human form has finally gone down completely. What a tremendous contrast to the naked woman who wore only a shell as a symbol! How realistic must humanity have become which never rested until it had arrived at this other extreme; the extreme which enclosed the free butterfly of the female body entirely in a rigid chrysalis again. And all that as a protective measure, in order that the butterfly might now crawl out only at the proper time!

For you, this house has barred windows, locked doors, Herculean guards with drawn swords. For you are not . . . this butterfly's man.

You no longer belong at all in the place where this butterfly is allowed to crawl out and stir its naked human wings. For you are a man to be sure, but not *the* man. A double chrysalis envelops

this veiled woman: the one which separates erotic woman generally from everyday woman; and the other one, of very much greater importance here, which again separates the erotic woman from all the seven hundred and fifty million men on earth with the exception of the single one who is her man.

Here we have a case of the butterfly changing back into the chrysalis state and which cannot be understood with the general chrysalis state of shame alone, as we have hitherto followed and unravelled it.

Imagine a mad spooky phenomenon to occur this very minute. The mighty hocus-pocus of a magician is to break in on the entire unsuspecting civilized world. Perhaps this magician is a brooder as they all were, the Paracelsuses and Fausts of occult history. He carried his brooding to extremes about a thing which also appeared to us in the course of our simple talk. How natural selection was badly needed again for improving the breed of our bodies; a selection to produce a beautiful strong race in the physical sense. And how we ought all suddenly to have to see ourselves naked once in order to comprehend how poor, how gone to seed and ugly we had become underneath our civilized coverings, like potatoes sprouting in a dark cellar. With his magic power he materialized the idea. And suddenly, with a magical jerk, all the clothes were wafted away from all of us. What would be the result?

A vision, as artists' eyes have imagined the resurrection of the dead. But death's character of inaccessibility, of being beyond mortal ken would not lie over these souls. A huge white blossom would suddenly unfold; but simultaneously a red gleam would spread over this blossom. At first the glow of simple shame at standing on the street naked, appearing that way in profane public at the wrong time, in the sense of everything that was said before. But then in many cases there would be the further redness of a particular shock resulting from appearing naked before the eyes of others than merely one very definite, elect being which believes it possesses very definite privilege over us in this respect.

Simple shame, as was said, is a kind of indignation at heart. But you would see quite unambiguous indignation here in the case of many men, whose first action would be to cover up and conceal their woman from the sight of the other men. Their woman!

One more motive must have played into the growing demand for clothing from a very definite point in the history of civilization on.

This motive was the fact of two definite human individuals of different sex keeping together permanently and lawfully in a closer association within the great mass.

Man and woman symbolically or really covered over their sex not only to indicate that now was not the time to think of things erotic generally, but they also covered it over as a signal to tell the world that their body was permanently given away, erotically speaking, to one very definite individual.

All at once a whole series of new pictures arises here. Not only morality, general usage as an abstract or legal concept and the moral responsibility of the individual to himself watch over this matter of covering up for reasons of shame. Suddenly the eyes of that other choosing human being are watching too; the jealous eyes to which a second human being becomes an enemy as soon as he betrays any erotic thoughts about this man or this woman and which would like to rend this man or this woman in pieces as being unfaithful, as one cuts off a diseased member from one's own body, if he or she were to receive any other human being erotically than this particular one.

So far we have talked about the many physical possibilities of love, the methods of love, which gradually developed in Nature. A bulky circumstantial chronicle. Then we discussed individual love-selection, likewise a chronicle with diverse chapters. But now a matter suddenly arises out of a field which we obviously have not touched anywhere hitherto, a page out of a totally new code of laws, a chronicle which is totally different again.

The right of possession of another's love! Amorous property! How does this strange idea get into the big game?

Is it merely a human arabesque? Or does it also ascend from the animal?

Let us take a pregnant example which is not fictitious like the previous one but is taken from the actual history of civilization. It immediately affords a clear lightning-flash of insight into the special character of the whole matter.

On the basis of this individual property right, this jealousy of possession, the idea has from time to time arisen of making a real safety-lock on the genitals out of this symbolical closing device of shame—a safety-lock to keep out others!

You still encounter the strange tales of women's girdles of chastity at the summit of civilization. A knight goes on a crusade and

for its duration his wedded wife at home must wear a girdle of sheet-iron or silver which closes the door tightly except for a very narrow opening, and the crusading husband alone possesses the key to the lock. Many a bit of myth may have fluttered into these little stories on the wings of willing imagination. But from a very early stage a certain current in the interpretation placed upon the virginal membrane runs through peoples and races as a settled truth, which likewise springs from this source.

This little membrane, this little rudimentary natural bolt was swept into man's deliberately desired purpose of having a lock that would keep out "unauthorized" third parties. Out of the idea that the sexually mature female should belong erotically and permanently to only one man the retroactive idea developed that she was likewise destined for only one man from the day of her birth. But if he only gets to know her at her sexual maturity who is going to guarantee him her untouched past? At this point jealousy suddenly thought it recognized a piece of evidence, an invaluable document in this tiny bit of sail that barred the way and which simple sense had interpreted to be merely a hindrance and a superfluous complication. If no bleeding took place when the gateway was entered for the first time, this past was no longer pure.

Solemn customs surround this among a large number of peoples. The little drop of red on the linen of the bridal bed becomes a sacred token. It is so important and really so sacred that it no longer needs to shun the public light of day even. Among civilized oriental peoples a special council of honour is frequently called together, composed of friends and relatives, for the purpose of verifying the sign. Among the Zulus, if the little sail is not discovered the bride's brother or father has to pay the husband an ox as a penalty. Under the Mosaic law the unlocked bride is stoned to death.

With such customs in force, a mortal fear about this little membrane finally runs through the world of girlhood among entire races. Artificial operations to help it out and to replace it when it has already been lost take the place of the fear of its being too efficient a natural lock. In Persia, where the husband has the right of casting off his wife after the wedding-night if any doubt remains in his mind on this point, the willing surgeon helps out the deflowered maiden, who is to be married, by sewing together the labia with a few stitches that will tear easily. Or else a little sponge steeped in

blood is secretly introduced into the gateway. Such sham fighting likewise extends into our European civilization, as you know.

But what gives the whole matter a tinge of real tragedy is the certain fact that the hymen, uncertain and vacillating by-product of Nature as it is among us, does not deserve the confidence to the degree that is expected of it. Just as it often acts as a barrier when it should not, so conversely it frequently proves soft and negligent and simply lets itself be pushed aside in the act without tearing, arousing suspicion where there is not the slightest ground for it. It just happens to possess all the caprices and underhand tricks which the scientist knows otherwise in the case of rudimentary organs which are on the border-line of disappearing naturally. And humanity of the future may well bless the day when it can base its conclusions on good faith and moral logic, in so far as it still needs conclusions in this respect, definitely and finally taking no further account of this abortive ordeal of a little drop of blood.

Among the African negroes, where they undertake to improve on nature by circumcision with sword and knife they have not spared the most uncanny, radical means of being absolutely sure in this respect.

The so-called infibulation of girls was invented.

Girls are subjected to a frightful operation when they are still young children, or at least when the age of puberty approaches: the sexual gateway is sewn together, leaving only a tiny, most indispensable opening. Circumcision precedes this, leaving the raw edges of a wound. Then these edges are either tied together for a considerable length of time and allowed to heal on one another so that a natural scar unites them or else the crudest of surgical means are employed and regular stitches are put in, entailing barbarous torture. Years later when the wedding is actually impending this lock must first be artificially opened again, causing similar tortures. The male organ is naturally not equal to this work. Once more martyrdom must precede marriage. Old women of the tribe fashion a peg of wood or clay, a faithful copy of the male member and exactly made after the individual measurements of the bridegroom. An opening is made with this, just large enough for the husband-elect to consummate the marriage. The whole gateway is burst open only when confinement approaches. Immediately after childbirth, it is customarily sewed up again, restoring the state of virginity for the duration of nursing the child. A new opening is made by means of

an operation as soon as the husband comes into his rights again. And this can continue for years, provided the husband insists on it.

This uncanny custom extends over all of Central and North-East Africa. It holds good among the Gallas and the Somalis, in Massawa and among the Bedouins north of Khartoum as well as in Kordofan. It is one of the most frightful pictures in the history of woman's sufferings on earth. But fundamentally all that appears here is man's primitive tremendous struggle: the titanic struggle with himself, with his own nature, the attempt to carve his desires, his ideals, his moral precepts and his stock of beliefs into his own body as one tattoos the skin.

When one sees what means lower nature employes to gain its ends, wandering through convulsively jerking tortured bodies, crushed corpses, and millions of sperm-cells dying a wretched lingering death at every act of love, one must not demand too much of man in the matter of his choice of means, at least not at his lower, still crude blind stages, since man himself is only an act, a rôle, a disguise of nature generally. But nature keeps mounting higher and higher above its path. And in the case of man as well, the infinite longing, the incessant onward and upward of a purer, more harmonious moral law finally shines through all the smoke of blood and wounds.

Even those poor infibulated girls are stations on the road to this goal. They represent the extreme of the idea that the morality of erotic surrender can only be saved by keeping the body absolutely locked outside of individual erotic surrender. Absolute purity until marriage was demanded of woman. Morality had established itself here. But man's weakness was also apparent. How could this purity be preserved in a naked life amid constant contacts with the opposite sex in every form of intimacy? Poor man is crucified before the altar of this conflict; the road of love which is supposed to mount to a higher moral level comes under the knife once again.

But when one thinks of the millions of black girls, all of whom are subjected to this difficult, mortally painful and profoundly shameful operation, involuntarily the thought crowds in upon you what a colossal demonic force the human idea of virginity must have possessed in human brains. We feel the breath of this force even on such a fool's way, as we must call it, where the storm is madly bent on the wrong thing and as a matter of fact does not get any further.

Something that involved being carried away by passion in every respect came into love-life at this point.

In order to grasp it in its full greatness you must not stop with the one loose page; you must turn to a whole new book in humanity's old Bible of love.

Namely, the chronicle of human marriage.

PART IX

THE CHRONICLE OF MARRIAGE

Our hopes come to an end, belief becomes a show,
Dead languages speak not, and all we build below
Passes away with time: And love alone remains,
Then let us while we may with love take zealous pains.

ANGELUS SILESIUS

§ 1

MARRIAGE is not an invention of man's.

It is older than man.

The animal invented man. But long before it came to do so it had invented marriage.

Yonder is the limestone grotto again. The red light of the hearth's flame shines on naked human bodies. Outdoors the glaciers of the ice-age sparkle by the light of the stars, and the storm roars. Did something resembling our marriage already exist with this background?

In itself it matters nothing to us to-day if we imagine those diluvial human beings as still without marriage.

A silent, honest sense of modesty stirs in us when we hear high-sounding words about the "eternal institution" of marriage. For man has not existed from eternity; he was an animal once upon a time. He was fish, worm and original cell. What difference does it make if we throw marriage into the bargain somewhere along the rearward line? Let it too have evolved at some time.

Your vision does some measuring. These diluvial human beings are not yet the actual beginning of our history, but colossal disparities separate us from them. They had no domesticated animals, did not know how to till a field and had not the faintest idea about the use of metal implements. Should we actually credit them with something so unspeakably complex as "marriage"?

The naked band, men and women, are sitting around the fire in the belly of the cave. They have just captured some booty. A mammoth was caught in a pit and was shot to death with arrows from the safe edge of the pit. They have all become sated again after having gone hungry for a long while. Their blood glows with warmth and new strength. The mightiest of all instincts stirs in them. Many thousands of years separate this day from our oldest traditions of fixed human rules of love. How obvious for us to

imagine ourselves in their position and think that a catch as catch can style of free for all embracing took place! The spirit of no precept handed down by tradition blows through that hot enclosed space. Only the primeval commandment of love reigned. What barriers could there have been? No doubt they let the fullness of their strength have its fling like animals, indiscriminately, in haphazard fashion, just planting germs impelled by their dark instinct, in order that humanity might not die out now that it was finally on deck as an awakening civilized value, doing so like the day-flies and like the herrings in the quivering convulsion of their great mating night. . . .

Like animals! How extremely plausible that sounds.

However, there is a good story bearing on this, which I would not want to withhold from you.

Once upon a time there was a chief on the island of Ceylon. The action of the story takes place in modern times, and this man absolutely lived within the limits of certain conceptions about marriage. But he was a polygamist according to the custom of the country, and therefore had a number of wives. Now he happened to come among the Weddas, that remnant of a much more ancient, dwarf-like people which seemingly is still on the border-line of all civilization in the jungles of its island. He may no doubt have felt the way we would if we were to get among the marshes of the Schussen or among the Magdalenians at the border of the ice-age. He inquires into the marriage customs of these people and notes something that literally fills him with alarm. "These humans," he cries out, "live in a state of utter barbarism, for each one has only one wife from whom he is separated only by death. Who ever heard of such a thing? Why, they live exactly like the wanderu monkeys!"

This story is vouched for by two very excellent people, John Lubbock and Charles Darwin.

Its most important content is that this son of the beautiful paradisian island of Ceylon has formed a decidedly different opinion as to what it means to live like a monkey, in other words like an animal, on the score of love. To him that means living in marriage having a very definite, strictly monogamic character. When he thinks of his wanderu monkeys, those black fellows with the long, grey, patriarchal beards in the branches of his forest, he has a life-size picture of an animal couple which keeps together in its monogamous duality with striking consistency. And he measures the barbarism of a

human race by the fact of its closeness to this custom of the wanderus.

There is really no getting around it; this chief was right in his way.

If we want to say about our stone-age men of the Schussen marshes or the Dordogne that in the matter of love-life they still lived like "animals," we only need to make vividly clear to ourselves a number of actually observed animal illustrations in order to reach the conclusion: that can mean that they lived in a state of very decided, very fixed and very loyal marriage for life-and monogamic marriage by twos even. A large number of highly developed animals round about their cave lived strictly that way. They are still living to-day and still living exactly that way with the conservatism that holds good throughout in animals. We can therefore draw a direct conclusion on this point and say what was what, without merely having more or less probable deductions available. Not even the word "marriage," which tries to slip through our fingers in such protean fashion to-day, wavers here. In the case of these animals the most genuine meaning of the word, with guaranteed fast colours as it were, is involved; the very plain, simple meaning as ancestrally sanctioned in our whole western literature from the minister's manual to the code of civil marriage. I hear a minister speak. Henceforth you are to be husband and wife, says he. That means you are to have one table and one bed in common. You are to remain faithful to one another to your last breath. Whither the one goes, there will the other go too. You will stand by one another in danger as if you were one body. Children will spring from your marriage. You will care for them jointly to the point of self-sacrifice. You have each one in common, each one is equally dear to you and sacred to you. If you act thus, God's blessing, the blessing of the logic of the universe, will rest upon you.

This kind of marriage had long been bred in animals before man originated at all.

A very definite chain of occurrences, of animalistic necessities under the great simple spell of the old "Good Fairy Utility" was bound to lead to it.

Just put together the following little pictures, of which you already have all the characteristic features from an earlier part of the narrative so that for the present you do not need to think up anything in addition.

You know what feats nature performed from early times in order to separate the sexes. Here a male and there a female. On the whole each was fashioned just as individually as possible. Only in the matter of love was each of them merely a half. Both had to come close together for the act of love. For the moment during which the semen was poured out, each of the two individuals had voluntarily to abandon a bit of its haughtiness as an individual and both had again and again to melt together into a single higher individual for a matter of moments. For a matter of moments! That was the beginning. At this point, nature's machine soon reeled on and caught the whole hand by the little finger.

A male and a female come together for the act of mating once in their life. The eggs are immediately laid and fertilized. Then both animals die.

That is the original step along this line.

You know it well: it about corresponds to the day-fly. Since only two individuals are concerned when only a single act is involved we already seem to have something monogamic here, although every single act of love is invariably monogamic in this sense and there is no question of marriage as yet.

The second stage: male and female continue to live after the act and immediately or later on have the strength to consummate the act again and frequently. A he-goat in its prime has talents enough for a hundred she-goats! As matters stand in this case there is no reason why each freshly covered female could not be really a new one for the male and vice versa. There is no erotic memory, as it were, and therefore not a trace of anything resembling marriage.

But do not get flustered: the third stage starts at "immediately or later on." Though death from exhaustion no longer follows copulation, a certain lowering of energy does ensue which first has to be increased again, requiring time. Further, in the case of the female the process of having offspring becomes more complicated and interpolates another intermezzo. In short you see what is universally known happen: mating time does not extend over the entire year but becomes regulated with intermissions. Those fixed "breeding periods," frequently only one a year, make their appearance. Male and female unite during every breeding period. When it is over they separate, never to meet again. The game starts again at the next period, but how much has come in between. The old individuals are scattered in all directions and embark on new joys of love

with new partners. And so forth. Not a trace of marriage here either.

One addition seems noteworthy, however.

Certain complications which give the breeding partner a higher value, a sort of increased value as an individual possession, occasionally make their appearance at this stage.

The simplest and most frequent case is when a shortage of females or of males prevails. Then a male is happy if it has a female at all for its whole breeding period and will tenaciously hold fast to this particular one because of her rarity. The male will defend this female vigorously and will oppose other males with flaming jealousy.

Furthermore, all those starts in the direction of individual sexual selection already come into consideration at this point, in so far as you will grant its existence in the case of the animal. The strongest, most conspicuous, prettiest, in any way most attractive male or female will be given the preference and this also can result in those chosen tenaciously sticking together for the whole breeding period. The connoisseur's value, so to speak, is now added to sheer rarity.

Strictly speaking, these things already begin where breeding periods which recur frequently are not involved as yet. Among our nocturnal butterflies where there are fewer females than males, the numerical rarity is important, and the high degree of rhythmotropism which all butterflies possess would likewise make the æsthetic-erotic choice of particular individuals which were "most beautiful" a powerful factor in Darwin's and Weismann's sense.

This added phenomenon permits us to say that every time at the breeding period one male unites with one female, as if a marriage were to come out of it. But here the decisive thing still is that it just does not happen to develop into marriage; for as soon as the period of sexual excitement is over the long interregnum comes, during which nothing holds the two together, and when the new breeding period comes around it is a case of "My bonny lies over the ocean"; the old individuals have lost and forgotten each other and a new choice of partners must take place. At bottom, this is and remains merely individual choice within one grand mating, nothing more. The next line of heights appears behind the little phrase "the long interregnum, during which nothing holds the two together." One day this interregnum provides something that holds them together.

The fourth stage starts at a totally different angle from copulation.

We must now turn our attention to duration-love as represented by the child.

Recall the spider and the stickleback. The young require care! One of the two parents is drafted for this service during part of its non-breeding time or for its post-loving time generally. In the case of the spider it is the female. In the case of the stickleback the male. When the demands of the young become greater, both love-partners lend a hand. The male and the female which have consummated the act of copulation have to remain together long beyond this time. A nest has to be built, food has to be fetched, the brooding mother and the helpless young have to be defended. In part these things extend back into the breeding season itself. This can no longer be carried to an end otherwise than by one and the same couple. A whole complex of duties wraps itself around the mates in all directions. This stadium already decidedly resembles marriage. It is a kind of temporary marriage subject to revocation.

From here the step to the fifth stage is a mere logical trifle. The care of the young stretches out for such a length of time that male and female are still together as the next breeding season approaches. What will happen? They will simply stick together during that one too.

In the first place, force of habit makes this the obvious thing to do. During this time in common they have been drawn together not only by fidelity in love but by something decidedly more enduring, namely work in common. In the second place, the bird may "think": perhaps I won't get a better "he" or a "she" after all; maybe I shall be left high and dry without any mate at all if I let "him" or "her" go now. I shall leave it an open question for you whether the bird itself thinks that way or (according to your interpretation of instinct) whether "it" does the "thinking" for the bird, meaning that the logic of this thought is bred as an instinct in its brain. At any rate, the net result is that the marriage contract is tacitly renewed for the new breeding quarter. This quarter in turn furnishes young, and so the business continues. Temporary marriage is simply declared to be permanent marriage, without many scruples. If you want to picture a remnant of life extending beyond the period of procreation, when the periods of heat are extinguished, think of the little marmosets or the dear inseparables among the

parrots. There you have cases of married couples which outside of their common love and the care of the young have become so accustomed to being chummy together and embracing, squeezing, keeping one another warm and sleeping together that you could not break them of the habit unless you killed them.

With this fifth stage you have reached the peak—marriage in the most clear-cut sense. And yet you are still in the animal kingdom below man.

In order not to stop with mere assertion, I shall give you a few brief examples of the latter stages; we touched upon the earlier stages in sufficient detail before.

Birds afford the most beautiful general example of perfection reached in the last and highest stage.

The bird is a considerably lower animal compared to man and in many respects to the mammal generally. It represents the acme of the specialized reptilian type, the peak performance of the saurian which has become feathered, warm-blooded to the highest degree and extremely active mentally to a certain degree.

Among birds, strictly monogamic marriage is not the exception but the rule, which individual exceptions can no longer change.

You must not cloud the impression such animal marriages make on you by making extreme ideal demands on it, which absolutely would apply just as little to man, even most highly civilized man. Our western "marriage," girt round with all the spears of law, all the consecrations of religious transfiguration, all the flames of morality like Brunhild in her weave of flame is practically only a structure on piles in a vast sea of infidelity, disturbances, muddied ideals and violent rifts of all sorts. It is so and always was so. The little bird-wife too is correspondingly unfaithful in a certain number of individual cases, marriages tear to pieces after all, the feathered aviator's widow is comforted even faster than the famed widow of Ephesus. But all this is incidental, incident to the general frailty of all institutions. As far as the bulk goes, the bird's monogamic permanent marriage triumphs just as well as does ours.

The slightest reflection will show how the bird in particular had to get into this kind of marriage in the sense of that evolutionary scale.

The bird took over the custom of laying eggs from the lizard. The young developed in the egg which had been laid, under the thick chalky shell, outside the mother. But the bird mother pos-

sessed something special that no saurians had: heat. It had acquired the internal system of heating. But at this stage nature did not succeed in piping this heat into the egg in the sense of its being directly connected with the internal heating plant of the mother's blood as in the higher mammal. In the case of the bird, the egg still has to be warmed externally by the parental body, it has to be incubated. The old animal's need for sitting on its eggs and hatching them in turn produced the nest.

The ostrich still lays its eggs like the turtle in a hollow in the sand and during intermissions in brooding simply utilizes the heat of the sun in this sand as an incubator. Our little whirring goatsucker simply chooses a hidden nook on the ground covered with brushwood in the woods for its nesting site; it knows nothing about building nests as yet. But then you see progress mounting step by step.

One bird digs a little hollow in the ground, another one scratches some leaves and twigs together in it. The wild duck already lines it with some soft feathers. The eider-duck makes a regular downy bed. The penguin deepens the hollow and makes it a pipe, and finally a regular subterranean rabbit-burrow. The sand-martin, the beautiful kingfisher and the gay bee-eater drive passages yards deep into the walls of river-banks. But the bird can do more than worm its way like a snake into the depths. Its kingdom is the air. Therefore it seeks its spot high up in the fork of a tree and there it carries the twigs that filled the hollow in the ground by means of its splendid organ, the beak, and the next thing the ring-dove's and turtle-dove's crude platform hovers in its leafy hiding-place. The wind tries to tear the loose structure away, but a natural cement, bird-dung, has stuck it together. The magpie takes this up: it throws out the dung but carries along moist earth, and cements the nest firmly with this. Since it transports the earth in its beak, saliva pours on it and in this way a natural adhesive substance is added. The common thrush thoroughly mixes a crumbled mass of willow wood, that has been chewed to pieces, with its spittle and makes a substantial nest of this material. The salangane or Indian swallow carries the practice of spitting so far that in the end the entire nest is eructed together of mucus; and man has picked on this very nest as a great delicacy in the form of bird's nest soup! Meanwhile the other swallows have learned to be regular masons and build walls of clay, and the oven-bird in America even builds a little house con-

taining two chambers. The woodpeckers have driven pipes into the wood of the tree, as did the kingfisher into its river-bank. The female of the big hornbill broods in a hole in the tree, but in order that nothing may disturb it there, the male walls up the opening with clay except for a tiny little hole, through which it feeds the nun in her prison. The smallest of the small whose little beaks are the cleverest of all leave all boring and spitting and masonry work aside as being too crude. They build their nest in the form of a green ball with only one small entrance, like the wren. They plant it in the form of a structure on piles above the surface of the water among the reeds, like the reed-sparrow, so that no heavy climbing animal can get at it. They develop into the tailor-bird, which uses its beak as a needle and draws fine threads, which it has itself spun, through holes punctured in leaves, till the nest is finally in a sheath of leaves which are sewed together in regulation fashion and is borne by the living stems of the leaves. And finally they get to be the weaver-bird which weaves the daintiest little hanging baskets, pouches and flasks of wool and bast, hanging out over the water from the tip of a branch, likewise wonderfully protected against every foe.

The young crawl out of the eggs in this nest, in countless cases utterly helpless, screeching for food day and night. The old animal must now drag food along incessantly. And then the fledglings still have to be taught.

There is no doubt about it; all this involves an infinite amount of work. Building the nest already makes demands on both mates, even though the little wife mostly takes the lead. When the female is brooding the male must feed it or give the female time off for dinner and itself cover the eggs. When the young have arrived, both must unite in fetching food. It is no wonder that these two, which chose one another for mating purposes, get accustomed to each other like regular married people in this school of hard work.

Among the love-birds (to use Schomburgk's own words), "the most perfect harmony prevails in their mutual desires and doings: when the one eats the other does the same; when the ones bathes the other accompanies it; when the male screeches, the female immediately chimes in; if one is taken sick the other feeds it; and no matter how many are assembled on one tree, the little pairs that belong together never separate."

A hunter shot down a female of the most gigantic parrot variety,

the araras, and hung it on his saddle. The male followed the horseman to his house in the middle of town, threw itself on its dead mate there and could not be driven away for several days. It permitted itself to be seized and finally stayed with the people as a prisoner.

Audubon, the old incomparable delineator of character, narrates that when the golden-winged woodpeckers in North America are happily wedded each pair immediately begins to make a hollow in a tree-trunk in order to build a home adequate for themselves and their young. Both work with the utmost zeal and, as it seems, with the utmost pleasure. When the male is busily at work, its mate hangs close by and congratulates it on every chip which its beak sends flying through the air. When it stops to rest, it seems to talk with its mate in the prettiest fashion and when it is tired she helps him. In this manner and thanks to their mutual efforts the hole is soon chiseled out and finished. Now they fondle each other on the twigs, climb up the branches or around them with genuine pleasure, drum with their beaks against dead branches, chase away their cousins, the red-heads, defend their nest against the purple grackle, and chuckle and laugh in between times.

Whoever knows how powerfully instincts of solidarity generally can exist in birds will not be surprised for a minute that this marital community of life kindles them into a warming flame that lasts beyond the erotic element. One is reminded of the story about the robins which Brehm tells from his own experience. "Two robins which were kept in my home town and lived in one and the same cage lived in a state of constant bickering and quarrelling, they grudged each other every bite of food and apparently even the air they breathed, and bit each other violently and furiously chased each other around in the space granted them. Then one of them happened to break its leg by unlucky chance. The healthy male forgot its rancour, took a sympathetic interest in the sick robin which was suffering pain, carried food to it and nursed it most solicitously. The broken foot healed, the sick male was as strong again as before but the quarrel between it and its benefactor was ended for ever."

Or that other charming robin tale by Snell, about the male caught in the nest with its young, which first brings up its own brood in the room and then does the same thing for the brood in a second, strange nest.

Such instincts for rendering care and assistance are to-day

drummed in deeply in the higher animal on all sides and only wait to be aroused by a proper opportunity. I knew an old hunting dog which for years surrounded an invalid cat that had been run over by a railroad train and had lost a front leg and was only just wretchedly vegetating, with constant care, licking and helping and defending it.

Where such foundations exist, the fact of two individuals sharing joy and sorrow for life must gradually produce marriage with all its emotions beyond the merely erotic.

§ 2

A mysterious Eskimo structure lies completely concealed from profane eyes deep down in the ground under the old fence around the garden where you first observed the love-life of the spiders.

A black hermit, whom you know well from his working-time, lives there in his hours of leisure.

This is the mole.

Far from its hiding-place it throws up one hill after the other in the green meadow. This is its hunting ground where it incessantly stalks its game through rapidly burrowed subterranean passages. Once in a while it hurls up some superfluous material and at the same time lets fresh air into its catacombs. Whatever it encounters in making its rounds it seizes and crushes with its vicious teeth: earthworm and cricket and cockchafer's grub. Immutable of purpose it bites into the ring-snake's scaly coat and suddenly drags a poor frog down by its leg into oblivion. But when it has finished eating and hunting, it enters a specially prepared permanent passage which is pounded down hard and firm and may be anywhere up to fifty yards long. At the end of this great corridor is its real little house, the aforesaid Eskimo hut, its main part consisting of a roundish chamber, cozily upholstered like a soft warm little nest with young shoots of grain, moss and fibres of roots, with various special secondary corridors radiating from it.

This mole in its castle is a wonderful example taken from the lower mammalian world for our station number four in the genesis of marriage. It does not know permanent marriage as yet, but on the other hand it already knows everything below this: temporary marriage, individual ownership and maddest jealousy.

Not for nothing does it dwell under the spider fence. In its extra-marital time, male as well as female, it is the most hostile sort of a hermit to spiders and also a hater of its own race, quite immaterial whether male or female. When it sniffs its way through its passages and encounters another mole, a hot fight starts under all circumstances, sometimes a life and death grapple. If it can do so, it simply eats the other one up. The case here is exactly the

same as with the spider: the stronger Adam has no scruples about biting the weaker Eve and vice versa. But the mole is far superior to the spider in the fact that it knows the difference between eating and love perfectly well.

When love-time, the breeding period in the year, gets under its furry skin it knows exactly what the hour has struck. Adam as well as Eve (Eve with the sheath only just opened now on purpose for the expected male sword in the manner described before) leave their solitary homes and roam abroad with the express desire of meeting one another. This does not happen to be such a very easy matter. For there are more Adams than Eves. And when Adam meets Adam in these days the revulsion of feeling is much greater for they are rivals. But luck is with Adam and in the long corridor he runs against a real Eve. Rarity is the decisive factor: she is his wife or he will have none. She customarily does not take this as such a matter of course in advance. She goes along, but she expects a certain ordeal. Either she goes along to his hermitage or she lets him into hers. He is absolutely the stronger, so she cannot simply run away. But neither does she want to do so. For she wants a husband. Only, he must prove that he is a regular "husband," a model of his kind. And customarily there is no lack of opportunity for this.

Adam has no sooner driven Miss Eve into the nest with a certain amount of roughness (for his old hermit nature does not acquire polish that quickly) when he suddenly begins to dig a kind of special passage which differs from the others by ending in a blind alley, like a sack into which one expects to stuff something. And as a matter of fact the time for doing so comes very quickly in most cases.

Whether because of some delightful perfume which the bride exhales or whether from some other cause, the rumour as a rule spreads rapidly among the other errant male moles that a freshly acquired female is to be found in this particular edifice. Suddenly one of these moleskin knights makes an assault on love's citadel by appearing in the corridors outside and kicking up a rumpus. He will be in presently; what is there to do about it?

Insane jealousy awakens in Adam. Up and out to battle. But the architecture of the fortress provided so many emergency exits that one thing remains to be done. While he is fighting for his lady fair he cannot keep an eye on her. What if she runs away? Or sup-

pose a third knight invades the place just at that moment? In this extremity the bride is ungently crowded into one of the new blind alleys and the door into her living room barricaded tightly behind her, stopped up and made unrecognizable. Now bring on the rival! He comes, and the duel starts.

This duel furnishes an unmistakable ordeal of battle regarding individual physical strength. The victor is the bravest. Eve customarily does not practise watchful waiting in complete idleness while the tournament lasts. While the terrible combat rages in the darkness, she burrows through the far closed end of her dungeon and pushes slowly ahead on her own hook through a continuation passage which she digs herself. Perhaps she will experience a third adventure as a result. But the victor suddenly tears down the barricade behind and goes after her. That suits her too. Only, who is it? It is a matter of complete indifference to her whether it is the first one or the new one. She cannot see the difference in the dark anyway. The victor is absolutely the "stronger." A certain selection for improving the breed of the species has undoubtedly been carried out here, even though it is not "æsthetic" selection of any kind this time and no active selection on the female's part at all. It is simply a case of three cheers for the strong man! And now marriage really takes place for the ensuing period of time.

A new structure is built for the young. This mammalian female no longer lays eggs. Its real warm brooding nest is the warm womb. But for that very reason the mother who is with young must take care of herself. And the young come into the world mighty weak and helpless. They must be suckled and afterwards fed with food dragged to the spot. By reason of the instincts, the ethics of their species, that are bred and fixed in them, mole husband and mole wife care for the young solidarically and in the most touching fashion. And only when the youngsters have attained a certain degree of maturity does it suddenly seem as if the marriage of the old folks were now purposeless. The next breeding period has not come around as yet. The two are only in one another's way in their everyday work. The hermit's longing stirs anew and one fine day each of them is sitting in its own house again like the spider in the cobweb. They no longer know each other when next spring brings a new breeding period.

And yet how little would have been needed to transform this temporary marriage into permanent marriage! I shall tell you one

more mammalian story which will put you with almost mathematical exactness at the turn from the fourth to the fifth station in the midst of the hot pulsing love-life of an animal race that still exists to-day.

You will recall the herrings' wild voyage of love. How endless masses crowd to the coast and fill the sea far and wide with eggs and semen.

That was the fish. The evolution of vertebrate animals ascended to the mammal, far above and beyond the fish. On the whole, this line at the same time represented climbing out of the water and onto land. Like the bird, the mammal originally developed on land and for land. But just as the penguin subsequently climbed back from the bird into the briny flood again, almost in fish-form, with scale-like feathers and wings like fins, so too did the seal, the sea-cow and the whale from the mammalian race.

The fish mammal or aquatic mammal developed: it is not, as the layman may suppose, a transition form from fish to mammal which still survives, but a wonderful retrogressive adaptation of the mammalian hoofed animal and beast of prey to the moist element once more.

In primeval days when the higher groups of mammals were just separating, the sea-cow developed in that manner from some hoofed animal form, and the whale and the seal from two widely separated corners of the original branch of the beasts of prey.

This subsequent adaptation in turn conditioned very strange consequences for love-life.

The seal and the giant whale remained genuine mammals in their love-story, just as their organ of respiration, the lungs, remained instead of evolving backward and becoming gill-slits again. In their case too, as in the case of the mole and the human being, the first nest where the eggs were fertilized, laid and hatched out was the deeply concealed interior of the womb. The mammalian fish had to swim through the watery deep with this little nest in its womb. But further, when the young one or young ones as the case might be, came into the world they wanted to be suckled with warm milk at the female's udder. And copulation between male and female had to be consummated in that whole complicated fashion as we saw it develop with gateway, member and internal connection in the genuine higher mammal.

The whale and its tribe performed the extreme miracle: not only procreation but suckling the young takes place in its realm, the ocean. But where the aquatic mammal still clung a little bit more to land and at least at times still knew how to climb up on an island rock or shore with awkward fins, love-life exploited this as an auxiliary principle. And here is where the common seal's love-story starts.

If you look at a terrestrial globe with the Pacific Ocean bulging toward you, this earth appears like a blue ball, an aqueous planet. The home of the seal more specifically called the "sea-bear," extends over this whole face of water. It is closely related to the sea-lion, which is to be found in every zoological garden to-day; it is somewhat smaller but at any rate an older specimen is still a good three yards in length.

The first act of the sea-bear's love-life looks as if it were going to repeat the mad phantastic doings of the herrings.

Spring has awakened up there in the Bering Sea where America and Asia hurry to meet one another. The snow has melted on the islands and the sea is free from ice. It is about the middle of April.

Suddenly, as in the night of the Scandinavian storm, animals bob up swimming in from the high sea, big sea mammals that roar like oxen—old male sea-bears.

They appear as the advance guard of a mysterious caravan.

For eight months this seal tribe had been kicking around in the wide open spaces of the sea, this tremendous ocean which flows southward almost to the pole, past coral islands with waving palms and bread-fruit trees into the wild desolation where only black and white penguins still sailed on in long rows on a crystal-blue iceberg. They knew nothing about love, nothing about marriage there. At most, theirs was a general, harmless sociability. Suddenly an urge which nothing can check stirs in both sexes, exactly as it did in the herring.

On to land!

It is like a sudden recollection of the primeval home of the mammal. . . . Melusine suddenly remembering that she was once a human being. . . .

But further. Back to the scene of one's own youth! Each one was once upon a time on land in its early days, each one first saw the light of day there. This may darkly draw the younger ones in

particular. Something else, something very special, something even "livelier" works in the older experienced ones.

At first this is different in the male and the female; but just therein lies a genuine resemblance to the herring.

The seal male feels an amorous longing in the sense that the male herring did: its heat has awakened, its procreative cells want to start out on the great journey to immortality of the species.

The seal female on the other hand feels an urge which corresponds to the feelings of the female herring throughout and which in fact coincided there with the concept of love, but which here, in the mammal already points to a far higher chapter: namely, the necessity of marriage.

The herring female yearned to drop its eggs, before fertilization and for that very purpose. But Mrs. Seal has long been carrying a fertilized egg around in herself, and out of this a big young sea-bear has very gradually developed during the past eight months in the warm abdominal nest, and now it is knocking at the door and wants to get out. It wants to be born, then it wants to be suckled and protected. That requires a lying-in chamber, a cradle and a solicitous pair of parents. And that in first line is why the female sea-bear in her advanced state of pregnancy is striving toward the land after she had borne her slowly increasing pregnancy for many months without any trouble through the waves of the high sea. What may further happen in the way of love-life on land is meanwhile relegated to the dark background in the face of this purpose. Our she-seal is in exactly the same situation as the poor girl who, close to her confinement, says: I must get married now at any price. The only difference is that among the seal tribe there is nothing scandalous about the matter; it is the old tradition, a sacred thing as it were. Pregnancy, stretched endlessly over two-thirds of a year in mammalian fashion, needed no marriage. But now it is high time, therefore, home onto land.

The way is strictly prescribed.

For "land" is under all circumstances the land of their birth: for each individual it is the very definite little island, the particular rock on which it was born. Year after year it goes "home" there. On St. Paul's island in the Bering Sea the people were struck by one particular sea-bear, for it had one fore-fin missing. Next year, there it lay at the proper time on the identical rock. And that continued for seventeen years! Involuntarily your eyes rove over

the blue watery side of the terrestrial globe. That is their district . . . and yet for seventeen years the same rock in April!

The arrival of the seals takes place in the same solemn ceremonious fashion as the grand procession of the salmon in the green Rhine. That advance guard consisting of a few venerable old grumblers first inspect the terrain very minutely to see if everything is still in order. If they are satisfied by their examination, they bring on the swarm. First a regiment of males approaches. Older and younger males. The older ones have something more than a simple birthright here, you can tell that by their behaviour. Each one hunts up its own particular quarters on shore, to which none other may come. This is selected on a fairly large scale, about twenty-five square yards per capita. Only where a gap chances to remain, an old spot which no longer welcomes its lord and master of the previous year because he has departed this life, can the younger blades immediately get lodgings on land. In most cases, however, this younger set stays hanging around in the water, leading the life of vagabonds and watching out for all manner of chance happenings. Meanwhile the old ones turn on each other and roar and spit and barricade themselves until each one happily has its square yards of room to itself. What they want with it becomes very shortly clear.

For around the middle of June the second act starts. Hurray, the females are coming! They appear in troops, all extremely round to behold by reason of their hopeful burden, but all in extremely high spirits. They swim around the shore, indignantly repelling the advances of the young males which are kicking around in sight of the shore with infatuated eyes (for the females are still thinking of anything else but sensual love) and they appear to have only one desire, to look over and closely scrutinize the shore where the old boys have settled down. If in any way possible, they clamber up some projecting cliffs, make eyes in all directions, emit particular luring calls and listen if there is any answer from the quarter of the older males.

This behaviour is unambiguous. The females are looking for "their man." They want to find a very definite male again, the father of their dear burden, the "husband" of the summer before. Returned to the old spot after they had roamed around freely for such a long while, they individually seek this male in order to

notify him that it is now high time to resume their marriage which had been allowed to drag along in loose fashion for so long a time. For the child is coming and demands both parents!

The renewal of the old ties takes place in many cases. Here and there of course there has to be some new choosing. There is a certain complication in the fact that marriage is not monogamous here but polygamous. Each male sea-bear is greeted by a number of females. But according to the good old usage of all heads of polygamous families, each one feels the need of recruiting a few new beauties for his harem. Again and again a stronger one will try to take away the weaker one's females. And while they are both absorbed in fighting, a third one comes along and rolls one or another female out of the preserve of both and over to himself. For although the female sea-bears in general make it a point to get their old lord and master again (who had already proved himself the "stronger" before!) they keep quiet when a still stronger one comes along, just about as Mrs. Mole did. Better is even better, all-governing utility for the species says inside them.

However, everything gets straightened out in the end. Every male has its women folks together and quiet descends on the whole tribe. Only the young folks keep swimming around out there with lustful eyes. Now comes the big third act.

All the good females of the harem without exception give birth to a jolly young little sea-bear on the second or third day after landing.

And with this, station number four is clearly given on our marital ladder. The common care of the young now holds the male and its females firmly together in "marriage" for about four months.

But the ingenious thing about the matter is that this four months' marriage at the same time forms the basis for its continuation the following year. For a few days after the birth of their young, amorous desire stirs in the female breast, love meets love in both sexes and its peak is the procreation of a new scion of the family.

With this in her body, wife separates from husband after the four months have expired.

Both now lead their own lives in the wide ocean independently of one another, as if marriage had never existed, till after eight months when the new period of heat announces itself in the male

and the approaching birth of her young in the female, and now the return home to the old spot restores marriage just as if nothing had happened.

Their care of the young is touching and faithful beyond measure. In love, on the other hand, there are naturally all manner of further possibilities. In contrast to the suckling of the young, mating takes place more conveniently in the water with these huge clumsy bodies and is transferred there by preference. That in turn creates opportunities for erotic thieves: the young males which are hanging around now and then succeed in catching a wedded wife sporting around in the water and loving her on the side. And this time, in heat as she is, she seems to have less objection to it, particularly as her real lord and master is gradually slipping into patriarchal old age after all.

Reminiscent of the salmon is the fact that during this entire sojourn at the seashore for giving birth to the young and subsequently flirting, neither the males nor the females take any nourishment. Marriage here is voluntarily what it is frequently involuntarily among us: a regular fasting-cure. One notes how well life in the open ocean feeds them: these heavy rollers come in to marriage-land as perfect swimming sides of bacon, sufficiently provisioned to direct all their work for four months toward other goals than the idle belly.

If you survey this grotesque picture in its entirety I believe it will grip you and lead you into the midst of the further evolution of marriage. On the one hand, you have temporary marriage yet: a four months' marriage, in which all love, confinement and care of the young falls, and then an eight months' intermission without marriage. On the other hand, you have the ingenious improvement that mating with the one male and the confinement resulting from this intercourse together with the bringing up of the young is divided over two such marital periods. This in connection with the fact that the place is always the same one led quite as a matter of course to these marital periods becoming linked together, which is manifested in the choice of the same male (always the genuine father of the children which have to be brought up!) Thereby, the principle of permanent marriage, of marriage for life, is already injected into the whole matter here: the temporally separated marriage periods in the end practically melt together into a single one, since they keep on uniting the same pairs.

Probably this illustration would be even more graphic and to the point if something did not mix in which I hitherto purposely left out of the straight line of stages: namely, the polygamous form of marriage. We touch a second matter which is important generally with it.

§ 3

Man, whom we are aiming at, did not come out of the bird but out of the mammal. No argument is needed therefore, about the mammal in the end having developed to a higher plane than the bird. Nevertheless, it is an unmistakable fact that the great bulk of mammals did not reach such a clear-cut decision on the marriage question as did the bird. Mammals by no means reached stage five as a regular thing; you see the majority of their many different experiments in the mole sense at stage four or at most just on the border of stages four and five.

Temporary marriage still prevailed throughout. It is true, that one is compelled to say it invariably shows a sure tendency to pass over into permanent marriage if aided and abetted in the slightest way. Where the slightest compulsion exists for the same pair to meet again during the following breeding season there also exists the greatest probability of permanent marriage. If a pair is permanently locked up in captivity, permanent marriage becomes a matter of course entirely in the sense that it is among birds. The cute little American monkeys become wrapped up in one another in captivity exactly like those inseparables, the parrots. But during liberty too it is impossible to deny the rôle played by the best principles that urge toward the re-election of mates—rarity and individual fancy.

The symptoms of permanent marriage with great tenderness shown by the mates, which have been observed in the case of several giants of the mammalian world, such as the rhinoceros, may rest on rarity.

Individual inclination is particularly clear among dogs. Breeders of dogs know perfectly well that a bitch will by no means take on any and every male you please, but that she has her particular "taste." This taste as a permanent thing must absolutely lead in many cases to constant repetitions of marriage, and therefore to permanent marriage. A female fox-terrier, which Darwin mentions, was passionately in love with a water-spaniel, and when they were forcibly separated, she suffered no other dog to come to her and

continued to lead a life of celibacy. A staghound bitch lived with four males, all of fine breed. But she kept on favouring one and the same dog and during three love-periods she each time had puppies only by this one. Similar facts are known in the case of horses and cattle.

An observer reports about the orang-outang, which is of particular interest to us because of its proximity to man, that he met a male which had a female with one rather large and one very small young one. It is highly probable that in this case at least two breeding periods had fused to form a permanent marriage.

But the contrast to the bird is unmistakable after all. And from the case of the sea-bear one can understand the factor which was able to thwart permanent marriage among mammals unless special measures for its protection were concerted (such as the strict return of both parties to the same place in the case of the sea-bear!). This factor was the endlessly stretched out period of pregnancy in many cases. The length of pregnancy seems to stand in relation to size. The bigger the mammal, the more months it takes, up to twenty in the case of the elephant. A special need for protection of the female in many cases does not exist in view of the extraordinary vigour of female animals during this time. A couple lacks work in common. During long stretches of time, therefore, how obvious it is that they will lose each other, and the new necessity for marriage will at the same time condition a new choice of mates.

However, that second factor mixes in here with compelling force, as it seems to me, giving the whole marriage question generally a new and most interesting twist.

Let us recapitulate for a moment.

If it holds good, the line up to this point would prove that man sprang from an animal world which in part had already introduced permanent marriage as a fixed institution and in part maintained itself at the very least at the extreme point of equilibrium where the slightest furtherance would turn temporary marriage into permanent marriage.

When we see what man has become, we must credit him in his primitive state with a whole number of attributes, all of which could only serve to favour the transition to permanent marriage in his case as well in the sense of the conditions prevailing among animals. His general tendencies toward individual selection, his special rhythmotropism which led to individual-æsthetic choosing,

his sociable and altruistic disposition which even extended over into the actually erotic field, all this we shall certainly not want to think of as below the level of the bird. His cave, his hearth, his possession of implements made him a most decided nesting animal in the bird sense, with the very keenest localization in the sea-bear sense. In fact, it seems absolutely unthinkable that he should not have steered from the very beginning with all sail set into fast individual marriage and permanent marriage, when in addition the scattering incident to periods of heat, which checks the mammal, dropped out in his case and love declared itself in permanence, so to speak, for as long as the years of sexual maturity lasted, ever anew chaining man and woman together by the mightiest bond (with only insignificant interruptions) quite apart from the joint care of the children.

Involuntarily you for an instant feel the need of putting down the big Bible of love at this point and dreaming beyond its pages as to how any thinking human being, in view of this transparency in things, could ever have hit upon the idea that the chapter of humanity in the romance of love did not begin with marriage in this simple normal sense?

Those zoological facts are not exactly to be picked up on the street to be sure. And it must be admitted that to this day a considerable number of people have written books on the fundamental questions of marriage without ever discussing those facts. But all zoology is after all but a foundation here for something which, as it is, already seems to spring from all present-day human things as a matter of course.

Our older civilized human view as expressed in all legends, in ancient religious writings as well as in all earlier historical speculations invariably proceeded from marriage. Marriage was at the centre of things up above. Why should it not likewise have been already present down below? It was Darwin's idea of man's natural evolution from the animal which first shook this naïve standpoint.

But this very idea in turn furnishes us zoological details according to which marriage, rightly viewed, already does exist in the animal below man . . . one would think that everything was clear now.

But we go to the same animal once more and it teaches us something further.

In the case of the animal, that pretty, direct line of the evolution of marriage is crossed on all sides by a second line of evolution which likewise possessed a primevally powerful irresistible force of its own.

Now as before there is no more useful expression for it than the word "social," if we only want to understand it correctly.

Marriage, you understand, is itself a social deed. It fastens together two or even more individuals to form a higher community. There have been plenty of people from time out of mind who were of the opinion that all social union on earth was only an extension and development of this marital community. The family is the "original cell" of society, according to a pretty saying. But let us do here as it says in Luther's Bible, and go unto the chamois on their heights and the rabbits in their burrows. Their practice is after all somewhat older and more venerable than human doctrine.

If the mole were the absolute model example below man, you would have all the beginnings of the social element contained exclusively in marriage. It alone joins a couple of animals together there, and very imperfectly at that, for it takes place only temporarily. Once their "marriage subject to recall," "temporary marriage," is over, Mr. and Mrs. Mole live as grouchy, chronic individualists, each for itself. If you want to educate them in your imagination to be members of an association, of society, you must first picture them to yourself as passing from temporary marriage to permanent marriage, then a permanent bond between old and young would likewise remain and in this way a patriarchal super-family, a stock, a race whose internal bond would be blood relationship would develop in the end. Many such family associations might then in turn unite to form a people, a state, and thus you would finally get the socially ordered world of molekind.

For the race of its fellow mammals, however, the mole is not the shining example but the exception as regards its individualistic form of economic life outside of marriage. A tremendous number of mammals invented the social element specifically outside of marriage and just because marriage was not yet fixed permanent marriage.

Apart from its procreative purpose, marriage is a protective association which two animals enter into. It comes to an end one day. The male as well as the female is on its own again. For months, perhaps for a great part of the year. Think of the seals' eight

months of interregnum without marriage. Why not certain starts toward forming protective associations during this time as well?

The dual principle, "husband and wife," is naturally not involved for these. A dozen or more females can make common cause for the purpose of mutual protection; and so can a group of males, and without homosexuality developing on that account: for the sexual element is here relegated entirely to the background as it once was in the formation of associations among the sociable volvox balls.

You actually do find a large assortment of this first stage in the extra-marital social attempt among all manner of mammals.

Old Fechner once wrote a neat poem. A little mouse heard of heaven where one led the life of Riley as an angel. It happens to get on the cold top of the kitchen stove and looks upward. It thinks it sees heaven. For countless sides of bacon encircled by winged angel-mice are hanging up there in the chimney. The angels were bats!

If the mole could shoot out of its dark hole and wing its way up into the empyrean, it would be a bat. The bat, however, already possesses that conscious social union outside of marriage, and in the form of a most beautiful example.

Marriage among these jolly fluttering creatures is still at a very low level. A brief period of playing the love-game, embracing and tickling and teasing and tumbling down, and then copulation is consummated, during which husband and wife roll themselves up together in their flying skins as in a common sheet. We already discussed the fact that attracting scents of a musk character play a rôle here in connection with the story about the hair at our armpits; in any event the brief sport does not pass off without a certain amount of individual choice. But that is all.

In the case of our northern bats this temporary marriage takes place in late autumn; immediately afterwards ensues the deep winter sleep during which the male as well as the female in their hiding-place throttle down their whole machinery of life almost to a standstill, occasionally letting the heating plant in their bodies burn down to zero and nourishing themselves very scantily by slowly using up their own reserve stock of fat, which they had previously collected on their backs—by eating themselves alive, so to speak.

For a long time people racked their brains over what the young

in the womb, which really must have been procreated in the fall, did during this long intermission in the bat's art of living. The great and absolutely surprising final discovery in this respect was that something happened here which we were only able to discuss at length in our love-story in the case of the queen-bee. Like all mammals, the male bat pumps its semen into the female during copulation in regulation fashion and already does so in the fall. But at this time there is no egg on hand in the female's womb for counter-signature. The spermatozoa simply have to wait, which they frequently do for a time in the same place in other animals as well. The matter goes to enormous extremes in this particular case. In many cases a special cork of mucus carefully closes the gateway through which the living semen swarm held its entry. The spermatozoa which are locked in get together in the female nest which is still empty and form a thick mass and themselves fall into a sort of winter sleep, which lasts for several months, from the end of late autumn to spring. And only in the spring, when the grand general snooze is over, does a mature egg separate from the ovary, appearing among the hibernants and releasing at least one of these enchanted princes for the last rites of marriage, with mixed love and sequent new coming into bat-existence. Birth usually takes place around June.

More interesting for our purposes than this new and astonishing fairy-tale about the durable spermatozoon which continues to live over an entire winter in the female just like that sheer immortal drone semen in the queen-bee is the behaviour of the males and females of previous autumn's old guard of love at this time after they have finished their winter sleep. The moment they wake up in the spring, male and female go different ways in positively demonstrative fashion as if they had never known one another. The males flutter away singly and each seeks its own preserve where after winter's slim pickings it can again fatten its round little belly at the perpetually spread table of the insect world which has likewise freshly awakened. And so they persist in the mole stadium, as beetle-browed individualists averse to all communism. It is otherwise with the females in this case.

From the day they wake up, which at the same time rings in their actual motherhood, they stay together in big bands and form a social association of their own. A social association, you understand. Not an erotic one. They are wives and mothers, and

homosexuality has not been invented among them. These hordes of females live together in particular hollows of trees or fissures in rocks. A male which tries to break into one of these homes for females is mercilessly bitten and chased away. Finally the pregnant ex-wife's confinement takes place in June in these female lodgings. This is not wholly an easy proceeding. While otherwise when at home the bat clings to the ceiling with its free hind-legs, shuts up its wings like an umbrella and lets the body hang down, the pregnant bat does it just the other way around. She hooks the claws of her thumbs, that stick out on both sides like the handle of an umbrella, fast to the ceiling and then in most cases curves up the tail with its bit of flying membrane like a basin, about like a little projecting holy-water font, below the belly which is hanging downward. In this she catches her young on giving birth to it and immediately bites its navel-string through, whereupon it hooks itself fast to the mother's woolly belly with its claws and looks for the milk glands; the claws and milk-teeth which it has at birth render it valuable services as clinging implements. The variety of hats having tails that stick right out without any regular little sail have an even harder task: among these the marvel occurs of the infant bat while it is being born, so to say, biting with its little mouth into a provisional substitute tit on the maternal dam in order not to plunge head over heels into the deep; and as its strength increases it clambers up from there to the genuine tits at the breast. When it has properly bitten itself fast like a fish on a hook, the infant is now dragged along on the mother's bosom on evening flights for long weeks, until at length it lets go tentatively and under mother's careful direction flutters a little ways beside her. During this entire time the husband plays absolutely no helpful rôle, and everything that he still might be is replaced by the female association. It is just as if among us all women went into a convent immediately after their wedding. And only in autumn is this celibacy discontinued along with the dissolution of the co-operative association; the mothers, relieved of their burden, now scatter too, they go looking for males and more or less energetically they establish another very brief temporary marriage.

Now spin your thread of thought from the word "convent" again.

A convent: why not a monastery as well? Why cannot the males which are bachelors again after their temporary marriage likewise unite and form a non-erotic protective co-operative association?

The bats do not do so on the male side, but it certainly would be easily thinkable. You would then have two social associations on the outside of marriage, in fact despite it; here the grown-up males, which are not in heat now, forming a co-operative association, and there the grown-up females, which are likewise not in heat now, together with all the children from embryo to suckling, to the young of both sexes which were not yet mature for love, as an equally closed co-operative association.

When you think of a cloister, the words "abbot" and "abbess" quickly come to mind. A certain management within the group results quite automatically in the female association; the mothers manage the children. But these mothers are of various ages. And the same thing applies to the males in the other association. In the case of the animal as in the case of man older in general always signifies wiser as well. If animals were merely an instinctive machine functioning blindly, there would be no shaping and developing and learning anew among them and age would be immaterial. As a matter of fact animals learn a great deal. It will therefore come about automatically without any magic that in every group the oldest among the mature animals will assume a sort of highest leadership as being the most experienced. Naturally "old" must still coincide with being at the "peak of vigour" and not with senility. Geniuses, visibly occurring among animals in individual cases for their simpler purposes exactly as well as among us will not fail to play their part in the simple seniority list. The result in all cases will be that the monastery gets an abbot and the convent an abbess.

Let us pass at once from the metaphorical to concrete example for these stages as well. In so doing we shall come upon the particular group which is the most instructive, socially speaking, of all mammals—the ruminants. These animals teach you more about the irruption of separate social factors into that otherwise so beautifully closed line of the evolution of marriage than the most highly imaginative professor of political economy can hatch out at his lecturing-desk.

The group of ruminants is an extremely interesting one in every respect. Taken as a whole it represents one of the most brilliant adaptations in the mammalian world. Recall the dainty little foot of a deer, the leg of a he-goat as transferred from the ruminant and ascribed to Pan, or a toothsome calf's foot. Invariably you

find the split toe forming the simple dyad, the dual hoof. All mammals originally had five perfectly good toes on each foot as the duckbill and the mole have and you yourself still have. The hoofed animal, the greatest adaptation to running in contrast to digging, leaping, swimming, flying or climbing, abolished a few of these five toes as the case might be in order to unify the foot and point it: the horse abolished all but the middle toe (the third one counting from either side), the cloven-hoofed animal to which the ruminant more specifically belongs abolished all except this middle toe and the one next to it toward the little toe. The horse was the acme of adaptation for galloping on a hard surface. Conversely, the cloven-hoofed animal aimed at softer ground with a broader, easier-going tread. The pig and its much thicker adjacent branch, the hippopotamus, already headed toward this goal, but the victory was achieved by sheep and goat and ox, musk-deer, deer, antelope and giraffe and camel—the genuine ruminants. Wherever the earth was a planet rejoicing in vegetation, stocked with herbs and thickets and woods, this race increased and multiplied boundlessly from early Tertiary times. And the most wonderful examples of social associations came into the world along with its happiness and growth. For sociability was of paramount importance to these mighty grass-eaters. But marriage was very far from sufficing for their general social urge.

The ruminants too lead a double life—a brief temporary marriage and a long intermission. This is regulated exactly as in the case of the bats in its simplest form: the males roam around subject to no rules and regulations, as crusty, egoistic hermits during the time when they are not in heat; but the females with their young form great co-operative associations.

The conventlike element disappears from the external picture to be sure, since customarily there can no longer be any hiding-places in the sense of community houses for a race of such giants. Those that keep together in convent fashion appear in a long procession on the open grazing ground as the "herd."

You find the yak, the great wild ox with the flowing robe of hair that drags along the ground, living in this fashion on the cold grassy plains of the Tibetan highlands. Here the old steers, the old grouches that do not care a straw about anybody, graze entirely separated, each one for himself. But over yonder the earth quakes

under the jog-trot of a huge procession: hundreds of cows with their calves and fine young animals move on in perfect harmony, crowding close together when any danger threatens or when they stop to rest.

Another picture. The mountains of Spain instead of Tibet. A splendid game animal dwells there as well—the ibex.

In the case of the ibex marriage only lasts a little more than one month. Husband and wife live separated for all the rest of the year. But neither one renounces sociability and social protection during this long interregnum. You climb up into the rough Spanish highlands, say in the Sierra de Gredos, more than eight thousand feet above sea-level. And you frighten away (or rather, you used to, for this magnificent highland game is rapidly disappearing before man's mania for annihilation) whole herds of these ibexes. Here is one which is more than a hundred head strong: all bucks without exception. They are hardened to wind and weather, and clamber up into the wildest region of snow. Somewhat lower down you encounter a second herd which is not much smaller: but this time they are nothing but she-goats, all females.

The men's club is more daring than the feminine coterie, but both derive advantages from social life. More specifically, the greatest advantage to fraternity and the league of females consists in the fact that each band has a "leader" at its head. This is the craftiest animal in the herd. Quite naturally among the bucks it is an old hard-boiled buck. Among the she-goats it is the most venerable, most experienced she-goat. The confidence of the whole co-operative association in the intelligence of this female president is unbounded among the timorous she-goats. The leading animal always goes on ahead of the association, it keeps a sharp lookout, scents possible danger, tries out the ground, gives encouraging signals and warning signals in the form of a shrill whistle, in short, it proves itself an invaluable aid. When this one animal is not sufficient, several other comrades are sent out in different directions as scouts and guards. But ever a bond of security, of calm on the basis of these things, is twined round the whole herd: the sight and hearing of the one individual has risen to be the eye and the ear of society. And all this without Eros, in fact, expressly for the time during which Eros is renounced, the time when male and female are strangers to one another, as if different hostile species were involved.

On the whole the need for such associations is always greater in the case of the females, which is easily explicable. Among a considerable number of ruminants the male herd is only very loosely organized or not at all, while the females form a regular troop with an abbess at the head. This is the case with our German antelope, the chamois. During the non-breeding period the bucks sometimes roam around all alone, sometimes by twos or threes, but always in quite informal league. On the other hand, the female chamois with their offspring form regular herds of thirty or forty head, and each troop is led by a senior member, a particularly experienced chamoisette. The buck can get along alone, but the females are drawn together by the feeling of each single animal's greater defencelessness, particularly of the young. How obvious is a higher stage in turn from this one!

Why should not the attempt be made outside of marriage-time to enlist a vigorous male or several males, who would go along for purely leading and protective purposes, for the general benefit of the female herd? About in the sense that a convent would hire an armed man to guard the house at night or a lawyer to conduct its lawsuits? This makes the last step obvious enough: namely, that the males and the females simply get together in a herd, not in marital form but as an extra-marital co-operative association and that then they elect the oldest male as leading animal at their head.

Climb the mountains of Corsica and you will find this latter custom in full force among the beautiful wild sheep, the mouflons. Some fifty or a hundred rams and ewes form the extra-marital troop, with a tried old male at its head.

On the other hand, you have a vast number of examples of pure female co-operative associations with a single old male as leader. This is the case with the llamas of the South American Cordilleras and among many others. You do not need to stop with the ruminants either. The baboons live that way. Only in the latter case you must swerve a little to one side by way of a mental reservation.

You are now getting to the junction of social life outside of marriage and marriage itself, which alters the whole picture.

Up to this point you have experienced a new chain: social associations during non-breeding time which for the present have absolutely nothing to do with eroticism. Now the question is, what po-

sition do these associations take toward breeding time with its need for marriage when it does come?

The first answer seems very simple, and it was already given by our first example of the bats. Breeding time simply dissolves all larger associations again in favour of a new protective association by twos merely. Where the males live apart and the females in association, the males put in an appearance at the female herd at breeding time. Choosing takes place, perhaps questions of rivalry are fought out, but in the end each male goes away with a single female and establishes marital relations with her for a longer or shorter time. And only when the marriages are over does the association of females come together again.

The same thing happens where the males form their extra-marital monastery. Cloister comes to cloister and both mutually dissolve one another as during the Reformation, by one pair after the other passing out and getting married.

Lastly, in the association which is already mixed as it is much the same thing happens as at a dance: the music starts and pair after pair steps out.

The North American buffalo furnishes a splendid example of this logical course of events in zoological reality.

You know the black woolly monster with the glowing eyes which zoological gardens and game preserves still cherish laboriously today while its wild native prairie has already lost it for good by the process of extermination. These giants live in small herds in their extra-marital state, the ones consisting strictly of bulls and the others of cows with sucking calves. A small variation from the mixed association as represented by the Corsican wild sheep is already in practice here: these several herds customarily keep close together and so in turn form loose larger associations, much as if a number of different brotherhoods and sororities moved on together in a single big procession. But that is not important here.

Now the breeding season approaches. The bulls come along to the cows in the middle of summer. Individual selection takes place. One bull comes to terms with one cow. When there are several suitors for the same cow a mad single combat ensues, in the course of which the fat woolly heads charge against one another like the iron-clad knights in the tourney. But this comes to an end, and finally each pair toddles off happily by itself. The

general social association breaks up in strictly monogamic marriage here. And only when it is all over does this social union become organized again. This continues year in and year out in perfect harmony, without any conflict between the two lines.

However, this very simple regulation of affairs can very easily become clouded as soon as we look somewhat more closely at things in a practical way.

Imagine a case where the males rove around singly and the females in small herds. A strong male of this species encounters a troop of females. Its powers suffice for several females. The females are willing. Why should it choose only one female out of the line and not the whole herd? It simply places itself at their head for the duration of the breeding period and transforms the female association into . . . polygamous marriage!

This case can also result when a smaller troop of males encounters a larger herd of females at breeding time. The few males divide the females up among themselves, each male gets as many as like it and as it can take care of.

But the surest thinkable line to this stage must result from the custom of a vigorous male acting as leader of a herd of females during the non-breeding period. In this case no interruption is necessary: the male leader on coming into heat simply converts the female band into his collective wife.

Polygamous marriage is everywhere a product of extra-marital social organization here, most distinctly so in the latter case where the two simply merge into one another. In polygamy you for the first time see the influence of social associations lying outside of marriage on marriage itself.

And you can prove this road too by the most striking examples, in fact they are far more numerous than those simple monogamic cases like the buffalo. Our sea-bears already furnished us a polygamous example. But most of the ruminant stories are set to the same tune.

When amorous ardour grips them, the male chamois, which have been leading the life of hermits, suddenly appear among the troops of female chamois. What the he-chamois wants is a whole herd and not just a single she-chamois, and that is what the embittered battle is about when buck meets buck in front of the same herd. The victor goes off with the whole troop.

When breeding time comes among the mouflons, the big bi-sexual

band breaks up into as many smaller herds as there are full-grown rams; each one reserves its own share of ewes, in which connection the head ram, which is already on hand in a social capacity as leader of the whole association, hogs the lion's share.

Among the guanacos (llamas), the leading stallion always sees to chasing away the young male animals in its herd as soon as they reach marriageable age, proof positive that it considers the female band which it leads not merely from the social but also from the marital viewpoint, with the jealousy of a husband. Among the vikunjas, a different variety of llamas, the male captures its herd in the breeding season but then remains a faithful and circumspect leader beyond this period as well: here and in many similar cases it is no longer possible to distinguish clearly between polygamous marriage and female association with a male leading animal.

Let the monkey serve as a last illustration. And let Brehm talk here because any attempt to paraphrase it would weaken the force of the magnificent passage: "The strongest and oldest, and therefore the most capable male member of the herd rises to be the conductor or lead-monkey. This honour is not conferred upon it by unanimous vote but comes to it only after very stubborn fights and quarrels with other competitors, meaning all the rest of the old males. The longest teeth and the strongest arms are decisive. Those who do not voluntarily subordinate themselves are bitten and cuffed until they come to reason. The crown belongs to the strong; wisdom lies in its teeth. The leading monkey demands and enjoys complete obedience in every respect. It does not practise chivalry toward the weaker sex: it takes the reward of love by storm. The *jus primæ noctis* still holds good for it to-day. It becomes the tribal father and its race increases and multiplies like Abraham's, Isaac's and Jacob's—like the sands of the sea. No female member of the band may indulge in a foolish love affair with some young greenhorn. Its eyes are sharp and its discipline is strict; it does not know how to take a joke about matters of love. The female monkeys which might forget themselves or rather forget him have their ears boxed and are treated rough until they do not feel much like playing around with other heroes of the band. This sultan is proud of his rights, and a young male monkey which violates the laws of the harem gets even worse treatment. Jealousy makes it frightful. It is foolish, too, of a female monkey to arouse such jealousy; for the leading monkey

is man enough to take care of all the female monkeys in its herd. If it gets too big, a part separates from the main troop under the leadership of a fellow male which has meanwhile become strong enough and now starts the struggle for supremacy in the leadership of the herd and in love. Fighting always takes place where several are aiming at the same goal; it is certain that no day passes without fighting and bickering among monkeys. You only have to observe a herd for a very short time in order to find out the quarrel in its midst and the real reason. For the rest, the leading monkey discharges his office with dignity. The respect which it enjoys already give it a sense of certainty and independence which its subordinates lack; and they flatter it in every possible way. You see even the female monkeys showing it the highest favour which can be conferred on a monkey. They constantly endeavour to keep its hairy dress as free from vexatious parasites as possible and it accepts this homage with the airs of a pasha whose feet are being scratched gently by a favourite female slave. In return it most faithfully looks after the safety of the band and is in a constant state of unrest. Its gaze travels in all directions, it trusts no being, and so it almost always discovers possible danger in the nick of time."

This sudden change of monogamy into polygamy is only one example of how marriage and extra-marital social life keep crossing one another. There are more examples. There are further traits in which marriage experiences slight metamorphoses and is shifted around as a result of the social element; conversely there are further examples of this social element coming into conflict and straits as a result of marriage mixing in.

Keep to the last story about the monkey. Here you already see clearly indicated how the relation of the leading animal to the herd extends beyond simple polygamous marriage to the border where marriage generally begins to disappear again.

You have males and females in the herd. The leader, the ringleader, in turn stands over both of them and their relations to one another as a special sort of male, a "superman," which tolerates all these relations in so far as they do not cross its purpose, and which separately possesses the right to all the females of the tribe. Let there be as many marriages as you want in the group, monogamic or polygamous or for life, the chief embraces them all once more

by virtue of a higher collective right; for his part he lives with the whole female party of the race in a state of collective marriage, which as a higher marriage embraces all those associations and takes care of the leader's personal amorous desires.

No longer merely an extension of the concept of marriage but a start toward a dissolution of this concept in more complex social super-organizations is inherent in this principle. A property right in the female, which no longer coincides with simple marriage, makes its appearance.

This little word "property" is an extremely interesting one in the whole matter.

The concept of property in marriage is obviously exactly as old as those two ideas "rarity value" and "fancy value." Where the opposite sex was rare generally, so that it was a stroke of luck to find a supplemental love-half, or where some individual choice had selected a very definite individual of the opposite sex as the one to be most desired, a powerful concept of property was bound to develop just as permanent marriage had to develop.

One had a being of the other sex to live together with! The rare case succeeded. Or one had the very one which one considered dearest. What mattered now was to cling to this lucky achievement at any price.

Any dog which hides and defends its bones can teach you that the higher animal already has very strongly marked ideas about property.

This sense of property in love and marriage affords numerous possibilities.

It could be preserved in a pure state of mutuality, so to speak, without a trace of any violation of the one part, without compulsion, without any brutal form. For the purposes of marriage (and marriage did not emerge from the wide-open boundless game of love but developed slowly from a distinct utilitarian demand) the most logical form must have been a certain lucky balance on a basis of equality between the mates from very beginning. That corresponded to the best kind of peace for their joint work and the most ingenious division of labour between the mates, the most suitable exploitation of the great principle of individuality. The mad, monstrous differences between the sexes such as existed in the old bonellia stages and lower no longer existed in the genuine ascending line of marriage.

If you imagine an animal marriage built on the postulates of our bird of paradise story, you could work out such a picture very clearly there. The property value of the female was determined by rarity and that of the male in individual cases by some individual preference or other: we said in the case of the bird of paradise, by means of "beauty," at least tentatively and in the sense of a definite theory. In practice these two factors supplemented each other. In both there lay a good possibility of permanent value, to which when marriage actually made its appearance had to be added the fact of habit, of individually getting accustomed to one another which we found so very strong in the bird. It was impossible for the property right of the two parties to take on one-sidedly acute forms.

And the fact that the female's individual love-selection (our paradisians are the finest kind of an illustration in the sense of that theory) occasionally did permanently alter the males externally in very one-sided fashion and breed rhythmotropic forms in the males to which the females continued to remain strangers could not alter this. Even the male bird of paradise's most gorgeous colours are in themselves nothing that really violates the female; after all, they give the female an increased feeling of pleasure during the breeding season. And just as little is the female's Cinderella costume anything disdainful; it simply lives up to that other protective purpose which is equally as justified. But you will also recall that not all "birds of beauty" are one-sidedly decorated in this sense; among many of them rhythmotropic development has taken place equally in both sexes.

But it is clear that in many cases a different, coarser form of property right in the case of both mates was bound to take its place beside this ideal and noble form. Among the wilder fighting animals in the thick of the wild struggle for existence. In the case of beasts of prey with the beast of prey's attractions. In the case of many such animals the purposes of marriage already make more brutal demands on them, as in the defence of the young. A certain wilder tendency necessarily gets into selection thereby. Take the story about the mole again. Husband and wife meet. One can say that sheer rarity forms the league of love. Now the first male has competitors. Now real individual preferential selection begins for the female. But before it can get to it, the competitors have already staged their own sort of

compulsory selection. They battle and bite until the weaker one gives in and goes off. It is an ordeal to determine which is actually the stronger one. That the stronger one then takes home the bride promotes the species. You will recall that even in the bird of paradise females' æsthetic selection the other theory made its appearance that it might really involve only a selection of the strongest, since the strongest males were likewise the gayest and most luxurious, rhythmotropically speaking, for some separate reason. In any event the female still practised active selection there. In the case of the male you already have something essentially more passive on the female's part. One's own choosing desire and the result that the strongest one in the fight maintains the ground may coincide closely here (I indicated that in telling the story). We already saw this in the story of the salmon and we saw it among the sea-bears. There is a tendency now for the female absolutely to give in when the fight between the rivals has been decided.

If you imagine this method continuing to be bred for some time you might assume that by virtue of the constant selection of vigour the males would become robuster than the females. As the individually stronger physically, the male would "possess" the female more than the female the male. The power of possession would shift within property in this way.

Something else would work against this, to be sure. We are so accustomed to think of woman as the weaker sex that it sounds almost paradoxical to say that in many cases where marriage is just beginning the female was undoubtedly originally the robuster, the physically stronger part. And yet such was certainly the case, and we spoke of it seriously enough in another connection. The female was frequently the real worker, not in the sense of a slave but in the sense of noble, free power, in the beginning of marriage.

In the purely physical division of love's labour the female from the very beginning had the offspring factory under her management. It also had the further care of the offspring in its hands in the majority of cases. It had on the marital pants, so to speak, which was already indicated externally by its coarser working dress made more for protective purposes; recall the bird of paradise story again.

Conversely, the male in many cases of bird marriages, for example, appears rather to be the gay decoration of love. It does the parading in the radiant colours and flowing tails, it dances and sings and sets off all manner of amorous fireworks. But in mar-

riage itself it is much more the incidental wheel, the occasional reserve part, the mistress' assistant who is always in the service of her initiative. The luxury of love is embodied in the male, and the crude strength of the necessaries of love in the female.

You might well imagine therefore that this old plus disposition would for a long time or permanently have exerted a counter-pressure to matters developing in the other direction among armed, fighting animals which were less adjusted to luxury. If you look at a magnificently developed lioness beside a lion, it really is hard to decide which of them to award the prize for the sum-total of energy.

A special factor again mixed in here.

Where the tournament of strength between the rival males became more and more a fixed custom, it frequently bred special means for jousting, special weapons for the struggle of rivalry in love in addition to the rest of the armament for the struggle for existence.

I mentioned that these rhythmic matters of luxury in the males such as the paradisian's decorative plumes might be proof of vigorous health but they certainly did not always represent an increment of strength, in fact it was frequently the very opposite. It is interesting that certain male animals already begin very early in certain cases to encounter one another with such ornamental miracles and luxurious arabesques, and to box with them if the ornament affords any possibility in this direction. In the case of male beetles you frequently encounter the craziest humps, horns and excrescences in the region of the back and the throat, which undoubtedly belong in that rhythmic field and peaceful love-selection. But in the case of the tremendous Hercules beetle this has already reached the point where you keep on thinking that these hooked hard noses of grotesque masks placed on the back and the head must also be able to give rough blows, the longer they are individually. This has not been demonstrated. On the other hand, among other beetles you have similar rhythmic experiments directly extended to the male jaws which likewise assume a mad arabesque form. Here an organ which is a weapon chances to become enlarged and so one knows for a certainty that the rival stag-beetle males when in love already battle among themselves with this weapon in tournament fashion. From this point the line continues to quite undoubted "weapons of love," and this

plays into the field where genuine animal marriage makes itself noticeable.

The spur plays such a rôle in the rooster's amorous combats. The stag's antlers are probably the clearest case among mammals. Both sexes among deer were without antlers in their original evolutionary forms: the musk-deer is still that way. Antlers gradually made their appearance, first as simple horns, then with points that kept getting more and more complex. The males alone possess antlers to this day. They first make their appearance with sexual maturity, growing periodically bigger from rut to rut, but in between they are shed by a regular moulting process. In these respects they are entirely like the male bird of paradise's luxurious feathers. It is evident too that their development followed rhythmic ornamental laws. A distinct tendency to form arabesques which are almost a menacing hindrance is inherent in them, the more they take root, historically speaking. In the case of some extinct deer this went to such extremes as to make a paradisian sanctuary appear almost a necessity for the species to be able to maintain itself. These ornaments simultaneously became weapons. As such they everywhere serve the rival stags in their amorous combats to this day!

You at once see the necessary continuation at this point. The combat ornament gradually furnished a very serviceable new weapon to an animal which was defenceless before. But it furnished this only to the male sex. This sex henceforth acquired a considerable amount of power over the female with it. The stag over the doe which has no antlers. The male gained a very decided preponderance as the combat animal, the power animal, the possessor of power. Naturally this is gladly accepted as a general advantage for marriage as well in defence against the common foes of the family. But it simply intensifies the contrast. The male which alone was armed in that manner became the habitual defender of the female under division of labour in marriage. A position of power over the female was proclaimed therewith for all practical purposes.

Other special male characteristics in addition to the stag's antlers were bred with equal effectiveness, particularly the sharp male canine teeth as long projecting tusks. In very ancient days when they still had no antlers or no regular ones, the deer developed canine teeth, which the musk-deer and the muntjacs still show;

later, as the antlers developed, the canines were relegated to the background. These canines remained the main thing with other animals. Among many monkeys, sexual selection specialized in enlarging the male's canines, which were already powerfully developed in both sexes.

One must not exaggerate here. In individual cases, these male acquisitions were gradually transferred to the female as well by heredity and equilibrium was restored: the female reindeer has antlers, too. In numerous cases the whole principle did not develop beyond small beginnings. You will recall how in the human being, for example, we found only relatively tiny starts in this direction which hardly exceeded the fundamental difference between the sexes of man and woman; in any event the human male does not surpass the human female by having either antlers or fangs and the fine distinctions that do remain (like the beard and the female's long hair) fall in the sphere of peaceful ornament and not the one-sided specialized breeding of weapons.

But you see a possibility of how the female with all its enduring strength as a maternal worker could acquire a defenceless character in animal marriage alongside of the male, a factor which became equalized under division of labour to be sure (otherwise it could not have maintained itself in the wide open struggle for existence) but which continually tended to shift the balance of power toward the male.

But now evolution along the social line was bound to set in with all its might at this point.

The conception of the leading animal became of such tremendous importance for the herd that simple division of labour in marriage literally steps back in the face of it. By virtue of a male becoming the leading animal, the male moves into a position of preponderance which opens up a whole new order.

Marriage in many cases becomes adapted to this, it becomes polygamy, the leader becomes the collective husband of the whole herd of females. Thereby the possessive relation gradually becomes a totally different one again: one male counts as equivalent to say twenty females in strength, each of these twenty females being only one-twentieth of a male! In reality, there is a symbolical act, an initiative on the part of the female at the bottom of this social line: a certain number of females choose the most vigorous male as their leader. In part it is a measure of economy,

in part the cleverest sort of exploitation of the utmost available strength: better twenty trailing behind a real genius of strength, than for twenty pairs to go along with the chance that nineteen of them will have males which are less vigorous. But now this "leader" makes itself the husband as well by virtue of its strength and thereby the females get more and more into its "possession" in the end. And finally the climax is reached with that curious condition where the leading monkey of a double-sexed herd in turn possesses all the females over the heads of all genuine husbands.

With this we have reached a point where social life begins to swallow up marriage again. And the more "social" the whole thing becomes, the more actively is a second motive at work here. It concerns the care of the young.

You will recall that this was the real purpose on which marriage was founded. Simple love became "marriage" at this point. Wherever you find social associations becoming powerfully emphasized in the bird and mammalian world, you note the beginnings of socialization in the care of the offspring, which in turn makes this limited form of marriage superfluous. Whether the young has parents to care for it or not, it belongs to the race, to the stock, to the co-operative association as far as its welfare is concerned.

The diving birds brood jointly on their cliffs, in countless bands, the auk and the guillemot in the north and the penguin in the south. A tendency toward solidarity in the care of the young prevails among all of them, although individual marriage is not yet disturbed. When the breeding season comes around it seems as if the individual's own performance were no longer sufficient to satisfy its instinct. The penguin females literally start out to steal eggs from their comrades; wherever they can, they filch a few strange eggs and add them to their own. The difference in varieties makes no difference. Big varieties forcibly take the eggs of the little ones out of their nests, and afterwards young animals of very different appearance hatch out together. Among the guillemots it is not enough that the male and female of each married couple take turns in sitting on the eggs; all the supernumerary bachelors feel the urge to do so and consider it an honour to help out here and there as auxiliary brooders. Where such customs prevail it is clear that individual pairs of parents can easily get lost in the shuffle without

having their offspring perish as otherwise is the rule among birds. Brehm says of such a colony of diving birds that "incredible life stirs and yet perpetual peace prevails in the community which numerically is bigger than our biggest cities. In these cities it happens right along that men will coldly pass their starving fellow men: but in the communities of these birds ranking low in the scale there are hundreds merely waiting for the opportunity to practise altruism. The young which has lost its parents is not lost: the community sees to the well-being of the individual."

Your gaze sinks from the wild rocky islands and cliffs of these community birds with the ocean roaring round them to the deep green tropical forest. There is a dull sound of cracking twigs, a shrill trumpet tone, and a herd of elephants slowly lumbers on. These monsters live in a community of fifty, even a hundred head and more. A wise old leading elephant goes ahead. A small number of males with their much more numerous females form the herd. These females stand in a very curious relation to their young. They show just as much tenderness toward the offspring of every mother in the troop as toward their own. The female elephant offers her udder indiscriminately to any young that happens to be near her, for the whole herd is solidaric. The young belongs to society!

And so you already clearly have two poles of possibilities, as it were, in the animal kingdom: in the one case all the young are common property, maintained by the community amid ever slighter individualization of origin; and in the other case all the females accessible to one male; this male performs an invaluable service to the community as a leader and in return all the females are at its disposal.

One step further, and marriage no longer has any purpose. The privileges which the one leader enjoys, namely, the collective possession of all females and the collective bringing up of all the young, which it procreates, by the community, can in the end be claimed by every male as soon as it performs a fair amount of valuable services to the community under increasing division of labour. The result is that all males have a right to all the females of the tribe and all the children have the right to be brought up by the whole community. Free love and a state orphan asylum recognized by society; but marriage no longer having a purpose. Note that we are still talking about monkeys, penguins and ele-

phants and we are simply imagining for the present what could easily have developed among them. . . .

However, the converse effect also had to take its course, namely, the invading principle of marriage influencing the social element. The original non-erotic co-operative association in many cases became a co-operative association of marriages. The young animals stayed in the crowd, concluded marriages within the community and in this way kept supplementing it as older members died off. As animal marriage came to be more and more irregular in the foregoing sense, the general picture was bound to approximate that of one big family. And this not only for one generation, but continuously from generation to generation. The young animals kept on pairing within the community, and membership in the tribe became an ever closer actual blood relationship.

The elephant herd is once more coming through the Indian jungle. It has become somewhat scattered in joyously snapping off branches of trees. But when the native Indian takes one look at a single specimen, he knows at once to which old herd it belongs. How can he recognize that? He notes a particular fixed characteristic, a definite way in which the trunk tapers off or the position of the eyes or the profile of the forehead, and he knows with absolute certainty that all members of the same herd, even if there are twenty or more of them, will be of this express individual type.

The reason is that for generations the herd has been recruited solely out of its own midst. All its members, whether male or female, leader or led, married or unmarried, are without exception genuine blood relations. Hence the identical noses, foreheads and eyes in all of them: the family coat of arms intensified by continuous inbreeding.

By inbreeding! That means conjuring up the devil.

Inbreeding is the great danger which the principle of marriage and in fact the erotic element generally injects into the social element at this stage.

It is nice to keep the clan as closed as possible, once you happily have it together. To tolerate no alien intruders. And to keep on extending this practice over many generations. To save the young the effort of forming a new social union. Offspring are on hand. Young males and females. Why should they not mate in turn, for if not exactly brother and sister from the same womb, they at

least are children of the same clan? That was all very fine in the beginning. After a few generations all are as closely related by blood as the scions of a single marriage. And inbreeding on which nature has again and again put its hundredfold curse, is in sinful flower. If it does not extract itself from this nice arithmetical dilemma, the race must one day perish as a result of its own aristocratic purity, its blue blood turning to poison. . . .

At this point the intervention of the erotic element endangers the social principle by making that principle dangerous. Some sort of a regulation had to come about if both were perpetually to get along together. Nature was inexhaustible in finding ways out of the dilemma of inbreeding's menacing spectre.

How nature sets things right in the case of elephants has never been clearly explained. The existence of so-called "tramps" among them as among various other animals which live very socially together is a striking fact in any event. That is what one calls mature males which curiously do not belong to any association but customarily lead an absolutely solitary defiant bachelor's existence. It would be easily to imagine that this sect of rovers represented a constant reserve for occasionally freshening up the blood of the various herds. They may have become superfluous for mating purposes in their original clan and become separated from the association; and now, whenever they can overpower a female from another herd or seduce one, they form an unintentional but extremely useful league against inbreeding.

A much more tried and tested means of counteracting inbreeding exists wherever the leader or the body of old males in the clan as a regular thing forcibly ejects all the young males from the association as soon as ever they begin to monkey around with the females of the tribe.

You saw a youthful army of this kind, which had been kicked out and was hanging around watchfully waiting in the background, among the seals.

Similar conditions prevail to a great extent among monkeys which live sociably together. And the result is striking. The lusting young folks scatter and camp around the various associations as a standing temptation, always on their toes to steal a strange female. This does not always need to take place by force. There may be a surplus of young females, which voluntarily swarm out in one or another tribe. Occasional flirtations may start on

the quiet behind the back of the leader or other pasha of the herd; finally the lovers may take flight and start a new clan by marriage. This very effectively counteracts inbreeding.

With a little imagination you can easily carry this line somewhat further as a "possibility."

Think of a number of such monkey associations being organized somewhat more firmly and less crudely and forcibly. Every clan has its well regulated marriages within it, which are strictly protected. But the young are free. Only one law holds good among them: no love affairs may be started within one's own clan. As soon as the young males are seized with amorous desire they are told to try their luck with another clan. This is made possible by a very liberal attitude on the part of the young females there. Lavish love-selection may take place in a time of such flirting around. The result is that a girl from another clan is chosen in marriage. There are two possibilities for them. The young man can enter the girl's tribe on his marriage. Or he can bring her home as his wife to his paternal tribe. This will largely depend on what the relations are between the two tribes. If they are bad, the latter practice will be the more probable one and marriage will take the form of "robbery." Both ways guarantee that all inbreeding will come to an end without impairing the existence of firmly knit social associations and marriages. You understand that this is merely assumed as a thinkable forward step on the part of elephants or baboons.

And this brings us to the end of our animal illustrations of marriage.

What I assert is that we have at last caught man.

In his marriage problem as well, man merely catches all of the animal like a Winkelried catching all the spears in his one body, uniting all adaptations on earth in himself and living and experiencing all "ideas" of terrestrial evolution.

§ 4

Man was a sociable animal, an animal living socially from the beginning of his career.

As much probability speaks for this proposition as can properly be demanded for any of these fundamental evolutionary questions.

All sites of prehistoric culture back to the eolithic period point to it. During the long controversy over the bones of the famous pithecanthropus on Java, which is at least an echo of a transition form between man and the animal, a scar on the thigh-bone, indicating that a grave abscess had healed, played a part. Virchow reached the conclusion that it was a human leg because a bad business like that could only have healed as the result of mutual help within a clan of human beings. The social factor appeared to him a matter of course in the case of pithecanthropus. The Neanderthal men buried their dead, as you know. In Taubach, at the source of the Schussen, on the Vezère, you have larger settlements obviously swarming with human beings. The Swiss villages on piles and the giant dolmens, which could only be achieved by the joint labour of many men, fall within the neolithic period. The most important things that raise man above the animal have a social tendency throughout: human language, the greatest of all universal inventions of a socially binding character, and the implement, this real solution of the problem of separating the organ from the individual, so that it could be utilized by many individuals. My hand with its chance strength is grown fast on my body and dies with me, but a thousand men can use the same knife and it remains unchanged even if its first owner dies; it is transmitted by social heredity. The entire traditional history of humanity is social history. Savage peoples show social forms of astonishing complexity. The social element pervades all the heights and depths of the human element on earth. It stands on Tamerlane's pyramid of skulls as at the Last Supper where Christ initiates love of mankind. Its metamorphoses and its progress move us just as they shook things up thousands of years ago. The social element embraces our political problems and our daily bread.

The primitive history of human marriage must therefore make the human being appear on the scene as a social animal. This fact makes all the lines of development which I indicated to you become important for man: social beginnings beside marriage and lying outside of marriage; and marriage being crossed and displaced by social associations, and vice versa.

Let us briefly look for these animalistic tendencies in man as he is to-day.

The first undeniable fact is the continued existence of monogamous marriage to-day. We have examples of it from the naked Weddas on Ceylon to man at civilization's peak. Man therefore possesses and undoubtedly did possess this animal feature. Certain characteristics (such as the masculine beard) indicate that peaceable ornaments were bred in the case of man as well as the animal, during the time when the exterior of his body was still capable of being transformed by sexual selection, and in discussing the origin of nakedness we saw how long that process could last. Æsthetic selection in the narrower sense of the word continues to-day. On the other hand, man from the very beginning obviously had no tendency to go to extremes in breeding special weapons of male rivalry which the female lacked—a point we already discussed; for example, selection resulting from such rivalry has never succeeded in making the human male's canine teeth more powerful. Man's canines have remained conspicuously weak in contrast to all living monkeys.

Accordingly there is nothing to prevent us from picturing human marriage as having developed from conditions very similar to those prevailing among the birds of paradise. If you want to derive man from relatively small original animal forms, it is significant how strikingly the love customs of South American miniature monkeys, for example, really do approximate those of certain birds, such as the little parrots known as love-birds.

However, we must think of the breeding of external, ornamental characteristics in the bird of paradise sense as decreasing rapidly during the actual sanctuary period, which appeared so important and necessary to us for man's inner maturing. Rhythmotropism began to develop ever more strongly in man at that time along the same line as in the case of the bower-bird which adorned its nuptial bower. Man painted himself, garlanded himself and made himself

artificially gay and conspicuous at love-time. The implemental stage was reached in so doing.

From this quarter we shall expect to find a tendency toward marriage by peaceable selection in its pure form, so to speak, in all humanity, and this tendency exists and makes itself felt with increasing effectiveness in higher civilization. There invariably is a monogamous tendency about it.

. Beside this we also unmistakably see characteristics of those other worlds in man; in first line, the polygamous form alongside of monogamy.

Polygamy still prevails with impressive force in Africa and the greater part of Asia to-day; on the other hand, it is missing among many very primitive peoples at the bottom and, officially, among the highest civilized peoples at the top. In general, it makes the impression of being an intermediate phenomenon, as if it had intervened in monogamy, which was already in existence, at a certain stage of evolution, only to give way again to monogamy, which continued to exist steadfastly. On the basis of our illustrations from animal life we shall say that the social element crossed marriage in its polygamous form, resulting in the lowering of the female's status. And we shall suspect that this caused polygamy to be gradually eliminated again for reasons of higher utility in the highest branch of mankind's evolution.

We must seek the social element in man at this point.

When we civilized human beings think of a social order among us, the first picture that rises up is invariably an order of which marriage is an integral part, without suffering thereby. Among us, the state embraces marriage as a fixed institution in its proper place, carefully guarded and consecrated by the state.

But then we consider those animal associations which we formed outside of marriage—herds of males or females, each living sociably together during the period of non-heat. And your attention is directed to certain intermediate social arrangements which are in a certain opposition to marriage in the case of man as well.

Let us take as trite an illustration as possible. I go to a small town in the provinces to visit a married couple who are friends of mine. They have been living together in model married fashion for many years. But I do not find them at home. She is gossip-

ing at a tea-party next door. He is sitting with his cronies around their regular table in the "Red Stag" inn. Their son is at an educational institution for boys in the metropolis. Their daughter is at a girls' boarding-school in Switzerland.

In this trivial illustration you have four small social attempts outside of marriage with comrades of the same sex, women, men, boys and girls, markedly keeping together. The two latter attempts are taking place before marriage; the first two are already interpolated in marriage. You will reasonably object that in the primeval days of Tertiary forests there were no card parties and no girls' boarding-schools as yet. However, let us exchange our nest in the provinces with the bank of a Central Brazilian river, on which those aforesaid Bakairi Indians live. They are still in the stone-age, as you know, and run around stark naked, with merely a very tiny sexual symbol.

You find two very fixed institutions side by side among these Indians.

Marriage, the family, the family home, where husband and wife and little children dwell. And beside it, the league of men—an extra-marital association of men, or rather one existing alongside of marriage.

The men's club has its own particular clubhouse, its "men's house." In general, it is completely closed to women. The men lead a free and easy life by and for themselves here, as if no other sex existed in the world from the moment they passed through its door. They dance and sing and make music, feast and imbibe here, festivals are celebrated, carnival with its gay masks runs riot, councils are held, arms are put in shape, and here they talk about their ancestors and keep alive their small tradition. The young sexually mature but still unmarried men live here all the time. Whoever has a wife and children at home simply drops in for a visit, but he always finds a second home here.

It is easy to understand how this men's club could develop in such a distinct form among these tribes. It happens to be a preliminary substitute for marriage for the bachelors who are still looking for wives. But that is only the one root of the matter. The other is that among these tribes marriage suffers powerful interruptions by reason of certain factors resulting from division of labour. The woman stays at home, looks after the children, tends the field, makes pots and cooks. The men go hunting to-

gether. A particular purely male form of sociability develops. Hunting feasts are arranged. And as this perpetually recurs, it takes on the character of a fixed institution. In a certain sense, the men's house is the improvised leafy hunting lodge which stays permanently in one place.

Women do not belong in this house for good and sufficient reasons. In order that marriage may continue to exist in a genuine form! The men's clubhouse swarms with bachelors in search of wives. There is no use bringing wives into proximity with this society in particularly facile situations, when drinking and nocturnal dancing are being indulged in. Guests from other tribes, whom one has met when hunting, frequent the clubhouse; the stranger and the traveller are quartered here; it is the tribe's big hotel, to which one does not like to entrust a married woman's reputation.

The relations of the men's league to the young unmarried girls of the tribe are somewhat laxer. Exceptions are permitted in order that erotic selection may take its course. The men's club is not intended to combat marriage; since new marriages must constantly be brought about, it is not meant to keep the sexes entirely apart during the time when they are free and must seek one another. Where girls get into the bachelor houses permanently, a certain initial stage of prostitution develops on the line from free intercourse to selection for marriage. These girls no longer marry, they are clubhouse courtesans (viewed quite harmlessly, for the rest), and their children are provided for by the tribe because no one man exists with any certainty as their father.

But leaving aside these more complicated developments, the core of the matter is a firm union of men, which does not exist in opposition to marriage but alongside it, a league of men for which woman does not exist within its four walls, at least in theory. How strictly women are officially excluded was experienced by the preaching padres among the tribes of "tame" Bakairi which had been converted by the missionaries. To their great satisfaction they discovered the big "loafing house," the club-quarters of the men's league, in every village. That seemed to be the ideal church for housing the new religious community. But when it was tried out for the first time the pious father suddenly found himself face to face with a strictness which he had not foreseen in following out the old dictum: *Mulier taceat in ecclesia.* Only the men had

come; the women did not dare to cross the threshold because it was the men's clubhouse!

You do not find such clubhouses with all manner of complicated customs among the Bakairi alone. Semon, the splendid explorer of the mud-fish and the duckbill, has described them in New Guinea.

The savages there still build their houses on piles to-day as did our prehistoric ancestors in the Swiss lakes, so that the whole matter acquires a prehistoric character from this fact. As a great social centre, the men's club is a structure standing high up out of the water on stilts. It is called *marea.* All the bachelors regularly live and sleep in the *marea;* husbands do so for at least a part of their time. No woman may enter it except on peril of life and limb. The men's weapons and trophies lie around and are hung around, the posts in the house are carved with loving care and skill, and in front of the door there is a platform on which high jinx take place at times, pigs and dogs are slaughtered according to the custom of the country and a banquet is held as in Homer's hall of suitors.

It is easy to draw the comparison. Do your thoughts not involuntarily fly back to the men's table in Penelope's house? The history of our whole civilization is full of echoes in Hellenism, in Germanic and Hindu civilization, of men's houses, men's leagues of this sort, from Ithaca to the Germanic mead-hall. When it is not hunting, it is war that unites the men; the clubhouse takes on a barracklike character. Hard drinking invariably plays a big rôle as well, persisting unabated to our students' drinking-bouts and our favourite bars.

But what is this whole business at bottom but the extension and development of the ancient line which you saw starting among the buffaloes and the ibexes: social associations before and during intermissions in marriage, during which time the sexes organize themselves each for itself?

The custom of having a separate women's house, a women's club, can be demonstrated less frequently in the life of present-day savage peoples, because woman is chained more firmly to home and family. In many cases the picture becomes merged with polygamy: in the harem you have a kind of women's house with very similar traits, but already incorporated in marriage. What took place here was simply what happened among the llamas and other ruminants: the

female club acquired a male protector and he developed into a marital pasha, finally putting his personal seal on the women's house and calling it his private property. However, you do occasionally find distinct female companion pieces to the men's club in association of the young: clubs of adolescent young girls. You unambiguously find something of the kind among various negro tribes, with a regular "girls' house." And lastly the tendency in this direction takes a thousand different forms among us in the friendships, secrets and solidarities of flapper existence, already casting furtive glances at the male in the distance and toying with the idea of marriage but for the present expending their social feelings in a connection with others of the same sex. Naturally here as everywhere I leave the actual homosexual element out of consideration because it constitutes a complete displacement in social arrangement and was never a matter that affected the great mass.

With the existence of such extra-marital social associations you see all the consequences making their appearance in the case of man which we had already in part found among animals and in part recognized as possible logical gradations.

Man simply seems to be the logical intensification of the animal everywhere!

Consider the dangers of inbreeding.

Increasing inbreeding became a grave menace to man living socially together at exactly the same point that it did in the case of the elephant. Namely, as soon as small associations, which included a number of marriages within them, kept together as closed associations during a series of successive generations.

From the second generation on, the members of the clan did nothing but intermarry and the clan got deeper and deeper into inbreeding with each new generation. Organization into smaller clans, tribes, and races was the foundation of all human organization above and beyond marriage. You encounter this everywhere in the history of peoples.

It was extremely natural. Take our old cave picture of the ice-age. The cave is a precious possession. But it affords room for more than two human beings. It makes life possible for a little co-operative association. You are still far removed from the days of pure love of mankind, although values of the heart such as give

warmth to all higher animal sociability were naturally not lacking in the cave. But plain, simple, practical points of view are decisive for the social element here. A little band of human beings unites in every cave; it is in agreement about this particular cave. As many clans, each one strictly for itself, develop as there are caves in the chalky mountain range. Each clan satisfies and exhausts the social needs of its members.

Beyond this fulfilment the older, hostile principle comes into force. Clan is to clan as spider to spider and mole to mole in everyday life. The clans have simply become higher individuals to one another, with all the individual's defiance: I am it, and I shall eat up whoever else wants to be "I."

What existed at a lower stage ever keeps recurring at a higher stage in certain characteristic phases, even though the later result remains a higher one on the whole.

In this case, nature's primeval game of attraction and repulsion is being organized anew. The members of the clan enter into a relation of attraction among themselves, like the cells in a single individual, but each clan turns all its porcupine quills of repulsion toward all the others. Progress happens ever to need both forces. It is of incalculable advantage to the clan to keep peace within itself and engage in mutual help and division of labour. But it is also an advantage for it to remain a small unified body having a place in common in the cave and delimiting a certain field to which it can adjust its growth and its strength.

However, higher things likewise keep on moving, exactly as in the case of the spider and the mole. Spider and mole would both go to ruin if they permanently fertilized themselves. They must abandon their inflexible principle at times after all, and surrender their individuality conditionally to a second one for the purpose of love. Even if it is only one cell of their body which they give up to be fused with an alien cell from another body, they cannot get around this one cell, and in order to bring it to the right spot something more is necessary in the case of the higher animal, for which the premium of sensual pleasure is offered by nature.

Leave the visionary picture of the cave and go out into sunlight that smiles much nearer to us. Dream that you are on North America's green prairie at the Leather-stocking stage, among the Iroquois.

In these Indians you have, or rather you did have, a splendidly

preserved illustration of a whole people being split up into a number of individual clans.

Their clans are no longer like the individual moles, on a footing of "eating each other alive"; they are already too high up in the social scale generally and the human scale for that. But nevertheless they continue to constitute certain small tribes within the tribe. Each clan chooses its chiefs from its own ranks, buries its members and keeps the inheritance within itself and makes common cause for revenge. It has its special and quite individual coat of arms or symbol, to which the clansmen have sworn an oath of allegiance, as it were: it is their "totem," as they call it, some animal, wolf or bear or buffalo; the picture of this armorial monster is employed everywhere and its name is the sign of freemasonry by which one makes oneself known.

You have a fixed law there as regards marriage. Every clan consists of many marriages under the protection of its sacred totem. And all these marriages came about in the following curious manner from hoary days of antiquity.

Never does a youth or a maiden marry into its own clan, into the sacred circle of its own totem.

According to the old hallowed custom which has become consolidated into "morality" never can a wolf male of the Iroquois having the wolf in his clan's coat of arms marry a wolf female, never a buffalo maiden a buffalo youth. Marriages may only be concluded between members of two different clans. Bear may marry wolf or buffalo and vice versa as much as they choose; in this one respect of mixing in love the sacred totem is not a signal of separation, but it specifically demands getting together, supplementing one another, playing the game of "puss in the corner."

You here note the same fundamental law for avoiding inbreeding elevated to sacred morality which we had already thought out logically as a necessary demand for saving the elephant herd.

Every marriage involves freshening up the totem clan's blood, since one partner actually comes from a different totem.

Things become somewhat complicated in this Indian code of marriage and social usage by the entrance of a second problem.

Once this fundamental law of crossing in marriage between clans existed, a second question remained which was not solved by it: namely, to which totem clan the new married couple with its children should belong?

A bear man marries a buffalo girl. Does he belong to the buffalo totem from now on together with his children, in other words to the wife's clan, or does the buffalo girl enter the sacred preserve of the bear totem by virtue of her marriage? The totems are to remain, they may not become mixed as such: what is to be done about it?

The Gordian knot has to be cut; there has to be some law of society which decides the question one way or the other.

To our civilized sensibilities the matter of course thing would be for the buffalo maiden to become a bear with all her progeny. Miss Meyer who marries one Schultze is from now on called Schultze among us and her children become Schultzes *in dulce infinitum*. But the Iroquois decides in almost the diametrically opposite way. Bear remains bear, as far as membership in the clan is concerned, as Schultze remains Schultze. Mrs. Buffalo likewise remains what she is in the totem sense, namely, a buffalo. But the decisive factor is that the children of the bear-buffalo line become, not bears like the father, but buffaloes like the mother.

They belong to the mother's totem. They grow up in its rights and customs and not in those of the paternal totem. In fact, they receive a special clan guardian in their clan in addition to their father; mostly a brother of the mother.

You have a splendid example of what sociology calls by the somewhat high-sounding name of "matriarchy" in this curious custom.

Just as totemism can be shown to run through the entire natural history of man in part by still living examples and in part by all manner of remnants and historical traditions, so, too, can this curious prerogative of the mother incorporating her children in her tribe, instead of the father's. The North American Indians are nothing but a small ruin, dying off at civilization's hands like the buffaloes of their prairie and the beavers of their waters. And their totem system is dying out with them. It died out within historical tradition among other peoples as a result of progressive social evolution or the complete metamorphosis of entire peoples.

The clan of the Iroquois is so strikingly repeated in European history by the gens of the Romans that the genius of the modern historian of these Indian customs, Morgan, could literally lift the Latin word and apply it to them. There are other parallel stages in ancient Hellenism as well as in old Germanic civilization. One that is very familiar to us is the Scottish clan. Totemistic reminiscences further lurk in the animals in our coats of arms, and in our Christian

names such as Wolfgang (wolf) and Bernhard (bear). Petrified to mummies and religion, they lie in the sacred animals, the cats, sparrow hawks, hippopotamuses and crocodiles of old Egypt. Along with the idea of the totem, that of "matriarchy" wanders around man's earth and through all human ages.

On the African Gold Coast the child belongs to the mother's station in life from birth: if the mother is free it, too, is free, if the mother is a slave it, too, is a slave from birth. In the case of the Australian negro, the Fiji Islander and the Maori in New Zealand, the child inherits its caste and name from the mother and not from the father. Among the Dyaks in Borneo as well as the Bororo Indians of Central Brazil the young husband literally moves to the house of his parents in law, and himself enters the mother's family. Far up in the north the same thing happens as at the equator: the husband as well as the children belong to the wife's totem among the Itelmenians in Kamchatka.

Among civilized peoples connected with us, say at the time when Strabo (about at the birth of Christ) wrote one of the finest works of late antiquity, his beautiful geography, this law had already become obnoxious, in fact it had become unthinkable. But Herodotus was still able to relate of the old Lycians that they named the child after the mother and rated it socially according to her; this struck him as a mad arabesque of foolish barbarism. As a matter of fact, this custom must have been the prevailing one for a long time in Hellenism itself and been only gradually transformed in favour of the father.

The old struggle between "father's rights" and "mother's rights" still sounds mysteriously in the profoundest tragedy of the Hellenic spirit, as the poetic power of Æschylus shapes it from the old legend: in the tragedy of Orestes in Æschylus' "Eumenides."

Clytæmnestra, Agamemnon's unfaithful wife, is a party to the murder of her husband. Orestes, the son of both, has killed his own mother in order to avenge his father. Is that "an eye for an eye" in the sense of ancient justice?

The personified symbols of vengeance, the Erinyes, say "no!"

They pursue Orestes on the ground that the vengeance taken by murdering his mother was frightfully excessive. The argument was that despite marriage, the wife was not related by family to the husband. But the son stands in an absolute blood relationship to the mother. The murder he committed was therefore infinitely

worse than the one she committed: the son cut into his own blood.

We would judge quite differently to-day. Father and mother would be on a footing of absolute equality relative to the son. The Furies of the drama, however, judge from the standpoint of totemism with matriarchy!

The fact is extremely interesting that in Æschylus' poetic tragedy the Furies do not prove to be right in the end. Apollo and Athene take a hand in Orestes' favour. They argue that the mother is by no means more than the father! And the upshot is that Orestes is really cleared of the sin: "father's rights" triumphs. The new order, civilization and progress in the mighty legend of the race itself, throws its vote into the scales.

If you want to track matriarchy to its last civilized lair among us you will still find it in the conventional picture or caricature of the "mother-in-law," who views the husband as an interloper in her family and who wants to arrogate to herself a closer relation to her daughter, even when she is married, than the husband is himself supposed to possess. It is the last little weak wave of totemism with matriarchy, more gurgling than thundering, which here beats against our otherwise totally changed shore of civilization.

Since the facts have been laboriously gathered and sifted, attempts have been tireless to explain why totemism so frequently showed a preference specifically for matriarchy.

The easily misunderstood word "matriarchy" first kicked up all manner of bubbles, as if one were everywhere looking into ancient Amazonian states which were really constructed on the spider model: the male admitted only for purposes of procreation, then flogged in public and everything from now on exclusively in the hands of the "woman ruler." That is only a frontier fairy-tale of science.

I believe that you can read the correct answer very easily out of that affair involving the Furies.

After the plot has thickened to the climax, it passes beyond all totemism and social and legal questions into a debate, which I should like to characterize by way of contrast as an embryological one. The whole case actually does come to a climax in a decision which only the scientist to-day could solve, assuming that he already has reached the point where he is able to do so.

The Furies tell Orestes that he has sinned against his blood. For his mother had once carried him under her heart as her own blood. Question: was not the murdered father also his own blood, which he

therefore had to avenge? Here Apollo takes the floor as Orestes' trial lawyer and makes a plea which is based on sounder embryology. He says literally:

> "*To this I say, harken to my just speech:*
> *The mother is not the begetter of*
> *Her child; she only cherishes and bears*
> *The awakened life; the father procreates;*
> *She keeps the pledge, if no god intervenes.*"

The Furies utter a warning against this:

> *Thou hurlest down the powers of grey Time,*
> *The young god seeks to run us grey-heads down.*

The human judges are unable to reach a decision: there is a tie vote. Then Athene jumps in and takes the part of Orestes and Apollo. She injects a decisive argument into the case, again taken from embryology—parthenogenesis out of a man and without a mother.

> *For me it is to give a final verdict,*
> *And for Orestes I put in this stone:*
> *For mother had I none who gave me birth.*
> *With all my heart I praise all manly things.*

According to the well-known legend, Athene had sprung directly from the forehead of Father Zeus. Naturally, the age of Æschylus had no inkling of the real parthenogenesis of the plant-lice, for instance, or the bees.

But as far as the main thing goes the whole story in my opinion has really convincing force. The reason for "matriarchy" lay in a very particular, older embryology! It rose and fell with it, quite independent of all other marital evolution!

In the totem case, as was said, there was a dilemma consisting of only two possibilities.

Either the children springing from a totem marriage came to the totem of the father or to the totem of the mother. The logic which in this case decided for the mother was by no means an imaginary, Amazonian rôle of the woman as ruler in the totems but it was simply dictated by the idea that the mother's share in the generation of the child was the decisive one and by far the preponderating one.

Only since the nineteenth century, thanks to successful microscopic research, do we know what actually occurs in procreation, that just one male cell burdened with the entire paternal inheritance mixes physically with one maternal cell which is similarly burdened. All former views as to the respective share of the man and the woman were suppositions. The most violent controversy still raged through all of the eighteenth century between the leaders of exact science as to whether the female or the male had any share in the matter at all.

According to the doctrine of preformation, all human germs were already created by God as microscopically tiny models in the first human body. But in whom were these billions and billions of future homunculi created: in Adam's testicles or in Eve's ovaries? Did every new son of Adam merely plant his homunculus in the womb of the woman like a little plant in a hot-bed; or vice versa, did the son of Adam each time merely dig up the hard ground in Eve's daughter, as it were, moisten it, so that the homunculus lying in the female might spring up like the germ of a plant in the warm rain of springtime and develop? A whole library was written about these questions at the time. Is it any wonder that still earlier or particularly among very unscientific primitive peoples opinions were even more one-sided and paradoxical?

Simple reason, weighing nine months against one minute, could not help hitting upon the idea that the mother was the decisive factor. It was universally believed that the blood was actual life. "Related by blood" was a phrase to conjure with. When they concluded blood brotherhood, two mixed their blood at least symbolically. The red blood poured out of the mortal wound, then the corpse lay rigid and dead: blood was life!

The father lost no genuine red blood in the act of procreation. But when the wailing child struggled free from the mother in the act of birth, whole streams of precious life-blood shot out with it. This maternal blood had nourished the infant during the whole previous nine months, as it seemed. If the woman was not with child, the blood dripped down of its own accord every month as if it were crying out to be made use of. Once the child, the little blood-sucker in there, was generated, this spring suddenly dried up. In old India, according to the teachings of the physician Susruta, the little embryo rises up like a lotus blossom directly out of the menstrual blood as a result of the impact of the man's semen. This

idea recurs in Aristotle and from there it passes into the wisdom of the Arabian physicians.

According to Aristotle, the female menstrual blood is the "material," the male's semen merely the impetus. Their relation is that of milk and rennet: the milk furnishes the "substance," the rennet the impulse which curdles the milk. Under the spell of such views, logic becomes extremely sharp when it comes to cutting the Gordian knot of the totem question: the child was considered to be really related by blood only with the mother and according to that it belonged to her totem without question.

"Matriarchy" in itself did not necessarily have to result from totemism with its hostility to inbreeding. The converse principle, the transfer of the wife and children by marriage to the husband's totem, could attain validity just as well for this purpose. Where marriage maintained itself economically in as firm a form as possible despite all higher social organization and at the same time kept a slight shift of power toward the husband, it was more obvious for practical reasons that the family would attach itself to its protector, the man, in the blood sense as well, and would therefore pass into his totem as well as into his marital power. And so, if not among the conservative Iroquois, you do frequently see matriarchy separating from totemism; "patriarchy" replaces it as in that passage from Æschylus.

This transition once more furnishes us a striking illustration for the correctness of the assumption that "matriarchy" did not rest on a special original social position of woman, but merely on a one-sided interpretation of embryology which favoured the mother.

This embryology was very much more tenacious during long ages than the poet leads us to expect with the judgments rendered by his gods.

Apollo's notion of embryology as expressed in Æschylus:

> *The mother is not the begetter of*
> *Her child; she only cherishes and bears*
> *The awakened life. . . .*

corresponded to a new revolutionary current in contemporary medicine in Æschylus' day: a very little later Hippocrates enthusiastically championed the assertion that the female menstrual blood actually had nothing to do with real generation. Hippocrates came very close to our scientific knowledge to-day; according to his view,

the female made a semen-like contribution to procreation just as did the male, both contributions meet in the act and both are able to transmit resemblances to the child, since each contains an extract of all parts of the parental body; in our day, Darwin embodied this last feature in his famous and widely attacked theory of pangenesis, about which we have already spoken. Æschylus' Apollo already had some wind of these new ideas when he made his embryological plea.

But elsewhere, where medical science did not meet the problem halfway in such friendly fashion, a totally different and much more complicated way out of the dilemma was tried from the moment that patriarchy seemed more to be desired for practical reasons. As in the case of those uncanny feats of sewing and cutting, the attempt was made to force the matter on nature late in the day.

Could not the father be artificially made a blood relation of the child's?

The simplest expedient would have been a mere legal act: for a father to adopt his own child on behalf of his totem. You still find clearly visible historical remnants of such ceremonies among the highest civilized peoples, as the Romans for example. But the realistic imagination of the human being who was closer to nature was not satisfied with an act of reason. He had to have something injected that was actually "flesh and blood" to a certain extent. How about bringing the father into a physical connection with the child after its birth, which would make it physically related to him despite the father's alleged small share in its original production?

Here begins the amazing chapter about the "men's childbed."

At first sight, nothing could be crazier than the idea that a man should undergo confinement. A man cannot give birth to a child at all, because a man cannot become pregnant.

At this point it is necessary for you to inform yourself somewhat below the example of man as to all that is possible in nature. In the evolution of higher animals there was one unambiguous point at which nature seriously concerned itself with the problem whether it would not be really better permanently to impose the burden of pregnancy on the father instead of the mother.

§ 5

The ice-age cave with our naked Magdalenian men becomes transformed into a cool modern grotto, spectrally illuminated by bluish glass eyes. You are in an aquarium.

The layman's knowledge of zoology comes to the end of its rope in an aquarium. Plants and animals grow in confusion there. You are supposed to get accustomed to an animal which (like the sea-anemone) has the symmetry of a flower or the structure of a star. Behind and before—the old original ideas—are missing. The cuttle-fish has its legs on its head and the jelly-fish has no head. And then the names. The cuttle-fish is not a fish at all and the sea-cucumber is not a cucumber but an animal. On the other hand the sea-horse is a fish.

The visitor will probably risk getting into an argument about the latter case, despite his sense of being a mere layman. The horse's head may get by. But when did a fish ever move through the water holding its whole body perpendicular and rigid, and merely sticking a little wheel of a fin out of its back which revolves uncannily fast and propels it through the water like a ship's screw. And when did a regular fish, on assuming a resting position, ever twist its body around a twig like a worm? These abnormalities leave the scientist quite cold. To the scientist, the idea "fish" is such a broad one that very different capers in the way of external shape fit into it. Our little sea-horse has an Australian relative called the "rag-fish," because its skin drags behind it in shreds like a tatterdemalion's pants; for protective purposes (concealment) this fish happens to have an interest in looking like a ragged piece of sea-weed and it looks the part so successfully that the layman simply takes it for sea-weed—a marvel of fishy buffoonery in the matter of extreme forms, compared to which the little sea-horse is harmless. But the real reason why the animal philosopher regards the little hippocampus with his whole-souled love as a zoological-philosophical freak of fortune lies in something absolutely special which the layman's gaze does not notice.

A show starts here in the comedy of the animal kingdom which

ought to be called "The Father." And this in a totally different sense from what you experienced in the case of the stickleback.

The little sea-horse offers a fully developed example of male pregnancy.

You recall how pregnancy originated among the vetebrate animals: the eggs were no longer laid externally but were retained and matured in the interior of the body until birth.

At an early stage and by way of exception, the little sea-horse fish, instead of laying its eggs in a nest in the open, shows a preference for a halfway internal form, which in part reminds one of genuine pregnancy (this already occurs in the case of certain fishes) and in part of the "marsupial"—an animal of the class of mammals characterized by having a pouch in which to carry their young, born imperfect.

The special feat in this connection is that the mother produces the eggs but the father has to take over this kind of pregnancy.

The skin on the lower part of the little sea-stallion's belly grows luxuriantly and forms a roomy pocket around love-time. The act of transference consists of both sea-ponies wrapping themselves around one another by virtue of their splendid coiling capability and the mother then laying her eggs directly on the father's body. The protecting pocket of skin is stretched up and takes them in, and the mother is happy, for her troubles are over; but from now on the father is literally saddled with the whole burden of motherhood. He must carry the burden around until each egg has developed into a dainty sea-foal; these then leave the pouch through a small opening on trial trips and finally when they have grown daring they take to their heels for good.

Pregnancy or pouch-hood, call it what you will, in this case naturally signifies a genuine period of being burdened for the father, exactly as it otherwise does for the mother. And there are other animals, ranking somewhat higher in the scale, on which the same duty of fatherhood is imposed and which are actually condemned to a regular period of exile and asceticism as a result of the profession of paternity being made harder in this unheard of fashion.

The trick that the sea-horse performs halfway is practised on a larger scale by certain toads, and the consequences grow to be uncanny with the greater dimensions.

A little batrachian which is probably the most comical of its entire race in Europe, the so-called accoucheur-toad, flourishes on the red

soil of Westphalia. The name is connected with the male's mission in life. These little grey male toads are hot-headed fellows in love-time and indulge in fierce fights for the possession of a toad princess. When an alliance is finally concluded, the father proffers his back as "belly" with the most loyal devotion. He does not grow any pocket like the sea-horse, however. According to toad custom, the eggs have come into the world in the form of a long string. The toad father wraps this string around his thighs in a highly artistic manner and then goes off with his burden. Strict natural history makes no secret of the fact that when there is a shortage of fathers, one and the same toad prince sometimes drags away the love-gifts of three princesses at the same time.

But dragging the eggs along is not all there is to the matter. The eggs must be kept moist, for they are amphibian eggs needing water. The most advisable course would be to hop right into the water with them. But these toads' mode of life seems already to contain an adaptation to temporary periods of water shortage. Therefore, the toad father first digs himself into the moist ground with his dear burden for one and a half weeks or else he hops through wet grass from time to time. Meanwhile the little tadpoles mature in the eggs. And one day the wanderer finds a puddle, dives in and the little tailed tadpole tribe leave their cradle in order to complete the rest of their development in the water in ordinary frog fashion. The finished little toad sheds its rowing tail and it climbs definitely onto land like its father.

You feel that this is a very ancient travelling adaptation. Love took place far from water. A journey became necessary. Without the father's service as expressman carrying the precious parcel, the eggs would have remained lying in the desert and would have dried up. To-day the descendants automatically imitate what was acquired in primeval times, even though there are puddles right in their vicinity. This toad is a bit of petrified primordial necessity, the monument to anxious moments far from a saving pond for the children. But how strange that the father became the saviour, the expressman, and not the mother!

Our good accoucheur-toad is a mere beginner compared to the "nose-toad" of Chile, named *Rhinoderma darwinii* after Darwin.

It is a very small monster, varying greatly in colour and unusually ugly even according to the toad ideal of beauty, owing to the folds of skin at its nose. A naturalist picks up a specimen and finds its

belly curiously swollen. He slits it open and a dozen completely developed young toads pour out of a hollow drum which has squeezed all the entrails upward and fills almost all the room in the belly. He supposes it is a female and believes he has ascertained the extremely singular case of an amphibian giving birth to live young. But in reality this toad is a male, and the mysterious drum is nothing but the pouch of its throat, swollen and extended under the entire belly, in other words what according to conventional frog custom is the lovely sounding-board for the agreeable vocal performances of these nightingales of the swamp.

The history of the toad father's strange case is finally made out with some difficulty as follows. After the mother has happily got rid of her eggs, the father slowly swallows up to fourteen of them, one after another. That is to say, he does not swallow them into his stomach but merely to the actual opening of the gullet. They roll sideways to right and left into the gular sac, which gradually swells up almost to the bursting point under the load, like a knapsack which is stuffed too full. But it does not burst, and soon there is life inside. Little tadpoles develop in the eggs and these finally become real live young toads (water being entirely eliminated here). These infant toads press and stick so tight with their backs to the inner wall of the father's sac, that at length nutritive materials can pass through the taut membrane of the sac from the father's thick red blood-vessels to their own network through which the pulsing blood is shimmering.

In this case the father does not merely drag the brood around with him but feeds them with his own blood as long as they are living in him. The thing has already been accomplished here, which the mammal above the duckbill later elevated to a fixed principle in the formation of the maternal placenta, and which from there on holds good to the human being to-day. That is to say, what the mother does there. But in this case the father does it! The toad father takes care of an unambiguous case of pregnancy including the unborn young by means of its blood, so that this case ought to satisfy even Æschylus' Furies.

There is no doubt that carrying this menagerie around signifies a real time of trial for him. Since the drum with its living contents presses together the stomach above it to a minimum, a starvation diet is prescribed for the father while he is nourishing the young in his interior. This develops into complete asceticism for a certain

length of time; the father starves for the sake of his paternal duties and is reduced to a mere skeleton, despite the thick drum.

Only after a considerable while does he finally get rid of the spirits whom he conjured up by his daring swallowing feat, as the nestlings, having become daring one day, leap out of his throat—not a particularly agreeable situation to be in either. But nature has once more saved the species and that is the main thing.

Those were amphibian experiments. The mammal no longer knows anything about these attempts at fatherhood. The kangaroo's pouch which harbours the young is fixed on the maternal belly, and the mother alone carries the young in her belly. Then along comes man from a totally new angle.

Let us go to our naked friends the Bakairi in the Brazilian jungle once more.

As genuine Indians, even though they are on the south side of the world, they also are still stuck in totemism to a certain extent, even though no longer very markedly so. Every village has its armorial animal of which a living specimen is kept if possible, as Bern cherishes its bears and Rome its Capitoline wolves. In the middle of a village square travellers found a cage that was higher than a house, made of long poles running together in a peak like a tent. There was a harpy-eagle in this tent as a substitute for the sparrow hawk after which the colony was named "sparrow-hawk village."

In the island-like isolation of this world, where so much human antiquity continues to live on in the mortal frame of beautiful naked human bodies to-day, you encounter a custom which made observers' sides split with laughter from the very first day.

An Indian baby has been born. You know how little difference this act makes to a healthy Indian mother. The woman kneels down on the floor and clings to a post. That is how she comes down. It would be too bad to use her real couch, the hammock, for this matter which, after all, is not quite clean. The child's navel-string is cut through, and shortly thereafter the Indian woman is up and about her work. And yet there is a very circumstantial childbed in the hut.

The husband has to lie down in the hammock and has to fast or at least go on a very strict "childbed" diet. He is nursed as if he were gravely ill, sometimes by his wife. The infant lies beside him, as if he had just given birth to it in travail. He blows on it if it is

weak. He looks to see if the remnant of the navel-string is healing properly. The eight days this takes are his hardest time. He is not permitted to leave his hammock except to relieve nature. If the wife should become unwell during this time after all, wife and husband "lately confined" hang side by side in their hammocks in all seriousness. The classic delineator of Bakairi civilization, Karl von den Steinen, found a lying-in chamber in one hut with four hammocks, two containing females and two males. The sole food which these poor husbands were permitted to eat was a very thin tapioca broth.

That was favouritism, for among other Indian tribes the sorry husband is not permitted to eat anything at all for the first five days. Then for the next four days the menu is some soup made of flour, and then by degrees he gets more to eat. He is forbidden to eat meat for a number of months, however. And during this time of tribulation the man who has "undergone confinement" colours himself black as a chimney-sweep.

Things are made still harder for father in one way or another according to the customs of the particular tribe. Where lying still and dieting lasts for months, the poor fellow gets up out of "male childbed" reduced to a skeleton. Some of these South American tribes try to play the game still further in deadly earnest. The father must not only lie still and fast; he must bleed and writhe in pain like the mother. The old reliable standby, cutting and burning, is resorted to.

At the end of the first forty days the unlucky husband is obligated to give a dinner. Relatives gather around him, and first they ceremoniously eat up all the crusts of bread which have become heaped up beside him during the forty days, since during that time he was only allowed to eat the crumbs. They treat him like veritable devils by way of thanks. They scratch open the skin on his entire body with a sharp tooth of the native rodent aguti, as if to skin him alive. After that, they cook up a thick pulpy mass out of sixty or eighty red peppercorns of the hottest kind, and this is put on the native Marsyas' wounds as a plaster. Being burned alive on a real griddle is said to be nothing in comparison. But the victim must not utter a sound, or the father is not worthy of honour. Only when he is wallowing in blood and pepper is it considered that he has earned the child, and then he is left to his diet in the hammock again, lasting several months more, while the dear relatives, male and female,

along with his own wife, celebrate a grand childbed festival with a luxurious banquet at his expense.

The seemingly unsurpassable craziness of this custom makes one suspect at first that it is only a local form of insanity in a small nook of mankind's madhouse. But this nook is almost all of South America. Old Marco Polo enlightens you about the fact that the very same thing was the regular practice in China 600 years ago, and it still flourishes to-day among the mountain-tribes of the Miaotsze. In Africa it was encountered among the negroes of the Congo. The wisdom of antiquity jotted down by Diodor and Strabo then brings it in sight historically close to the doors of our civilization: according to Strabo, the male childbed practice existed in the land of the mouflon, on Corsica. Reliable old Strabo found it among the Iberians in Spain. And to cap the climax, this custom happily persists in the midst of our civilization, among peasant people who wear clothes and are duly registered by the state in modern fashion, in a Spanish-French border nook among the remnants of the old Basques continuing to vegetate in the Pyrenees. We obtained the official civilized name for the custom, the French word "couvade," from there. The Basque peasant woman gets up as soon as the first attack is over: the male peasant goes to bed in her place with the newborn baby in his arms and in all seriousness receives the neighbours' visits and congratulations.

In view of this tidal-wave of folly around the entire earth it is a real life to be able to say to oneself that there is at least method in this madness. It incorporates nothing else but a bit of man's primeval world.

Wherever the "right of the father" to the name, possession and tribal membership of the child rose up and triumphed and in so doing came into conflict with the old embryological notions which credited the mother with the lion's share in the child, this male childbed intervened as a sort of mystical equalization and adjustment.

It artificially rehabilitated the father.

It attempted to bring about a subsequent connection between father and child which would approximately correspond to the act of birth, since the act of procreation itself was not deemed to be sufficient.

Imagination and reality are mixed up here in strange fashion. It was only a masquerade. But you must think yourself into these processes taking place in the soul of a people. All things

medical had something of magic about them from the beginning. Fasting, lying in the hammock, and blood and pepper all the more so, all this had a magic power, extending into the demonic connections behind things and persons. A witch puts a wisp of straw in the fire and lets it become charred, and in so doing she thinks of a man against whom she has a grudge and who is a hundred miles away; at that same moment an inexplicable burning fever grips him and carries him off. The male childbed also grows on trains of ideas like that. It is magic adoption. Only when its conditions are fulfilled can the father regard himself as the owner of the child in the sight of God and man, only then does it belong body and soul to him, his race, his tribe. It is transferred by magic, by a miracle, to his totem and henceforth it is blood of his blood although a mother from another totem gave physical birth to it. Here again it is man's tremendous desire that breaks through, the desire to master nature and mould it to his wish. It is the selfsame desire that in the end has bored tunnels through mountains and tamed the lightning, that to-day rides on dirigible airships and looks through walls with radium rays. The only difference is that the first, older way thought it could compel the world to its will with the club of a magic formula, while we begin to understand the real subtle language of nature's spirits, the law of natural forces, and begin to know how to carry on a polite, educated conversation with them, which really gets us to our goal. But the longing of to-day is the same as thousands of years ago. Man is inherent in this longing. It was longing, infinitely split up, which came up through all life: the longing to become the master of things. The millions of adaptations spring out of it. Until all this one day becomes the human spirit, Prometheus, who at last unites all the confused swarming longing of many-headed animality in his hand and who stretches out this hand to steal fire from heaven, the fire in which the sword of domination over the earth is forged.

§ 6

Clan therefore stood opposed to clan, like males and females when the sexes first became separated, as the two halves of a higher love-individual. Each clan had become a many-headed individual with a hermaphroditic structure like the vineyard snails, with male and female sexual parts in one and the same body. As in the case of the snails, so here too the hermaphrodite might not fertilize itself but it was necessary for the organs of two individuals to come into contact and cross. And so the clans exchange their young people crosswise.

At this stage all the old antitheses were bound to be repeated which you encountered below in the simple hooking up of the love-individual. Clan could live in a state of savage hostility to clan as simple individuals, like the spiders and moles. The amorous individual would have to obtain what it wanted by defiant pertinacity and brute force. Or clan could live in a state of reasonable peace with clan, a still larger co-operative association of clans or tribes could form a "people," in which things were regulated by law throughout. In that case the exchange of young people was a peaceable matter, merely necessitating certain totemistic rules and regulations and economic ones connected with these.

Something "real," which has played a comprehensive rôle in sociology, again comes into the simple logical line of evolution at this point. Namely, the custom of stealing wives and buying wives.

If you want to lose yourself in dreams of lovely romance, you think of the feudal castle perched on a high rock where the beautiful daughter is closely guarded by her malicious old father. During a wild and stormy night the strong young knight clambers up the perpendicular wall of rock and carries off the amorous and happy maiden on his swift steed. Or the robber band break out of the black forest and kidnap the village girl to be their robber queen. As a schoolboy, in between much boredom you likewise learn the spicy little stories about the rape of the Sabine women, about Proserpina being violently tricked into Hades, and nervy

Paris who carries Helen off to the strange Trojan people, and that wild woman Brunhild who has to be conquered by force, and who jeers at the king who is too weak to do so.

The same magic formula turns the trick in all these pictures: the bridegroom steals the bride!

There is a touch of wild and woolly rape about it all. But that would not be really romantic. Romance requires burning love in both parties, it also requires marriage as the goal. But in between the wild, tangible, violent element is injected like a special spice: the robbery which with one jerk breaks all the strands in which the bride had been spun until then, which delivers her symbolically naked into the hands of her lover, as the only one henceforth who will be father and mother and everything to her at the same time, as it says in Andromache's wonderful speech to Hector in Homer.

It is an old spice out of a primeval kitchen. Once more you unroll the mighty panorama which this newer romanticism did not know at all: the tropical jungle, the steaming volcanic island, the coral island with waving palms in the blue South Sea. And there also you encounter an abundance of cases in which a jolly robber romance still precedes marriage as the usual thing to-day, as if it had to be so, even though mostly confined to a half playful form which shows us that softened customs mostly preserve only a shadow-picture of what was once deadly earnest.

On the mainland of Australia and in New Guinea, on the Fiji Islands in the coral sea and again on the Kuriles and among the Samoyeds and Lapps far up in the north, among the Fuegians far down in the polar south, the bridegroom plucks his sweetheart out of the alien clan secretly, by night, by means of burglary and trickery and, when necessary, amid skirmishes with the girl's relatives. Robbery is no longer a matter of life and death in most of these "living" examples. The big idea is for the young folks to get married after all.

Among the Australians really brutal robbery is merely an expedient when no deal results between clan and clan by the ordinary legal procedure. The soul of a peaceable legal business arrangement would be for each clan to exchange its available youths and maidens with the other on an exact fifty-fifty basis. But in cases where the youths of one clan cannot bring along enough sisters as presents in the fair exchange, might must supersede right: the young man gets himself a girl by trickery without any agreement

whatever, and though the girl may go along willingly, the matter can entail a serious fight with her relatives for the abductor.

Elsewhere, because of ever bettered customs, the whole "robbery" has become a comedy, merely calculated to help out the act of tearing away the bride from her family with a dash of storm and stress. Stealing the bride has become transformed into all manner of pranks on the eve of the wedding or turning the wedding into a rude comedy for those not directly participating in it. You still find this among the German peasants in the Bavarian nuptial game of "bridal tag," where the bride has to be chased and caught by the bridegroom or in similar local jests, where the bridegroom gets a sound beating on his marriage at the hands of the relatives, without this being taken in any worse part than as a traditional joke. And yet the original reason is undoubtedly that old one dating from a really rough age when clan was hostile to clan as the female spider to the male spider and despite this, the necessity arose of exchanging girls between clans. "Stealing wives" was the old compromise, as the male spider gets his marital right by might at a favourable moment.

Where customs became improved, peaceable exchange by agreement or, where that was not possible, by simple purchase made its appearance generally as a higher stage, as a stage of benevolence. A young man of one clan appeared in the other and bought the girl who pleased him. That sounds very bitter to us, even worse than the little word "robbery." Brigandage still has a taste of romance about it; barter produces the disgusting effect of sordid commercialism. Woman suddenly appears tremendously degraded. Her value, for which the suitor's blood was just sufficient in the former case, seems to sink to a level with the value of cattle. And livestock is actually involved in the deal. The negro comes along and brings his oxen with him. There is a regular tariff. For a certain number of head (about five in the case of the cheapest bargain among the Bechuanans) he gets the girl.

And yet it is not so terrible if you reduce it to its genuine old complexion. The girl is taken away from an alien clan. This gap really ought to be filled by a corresponding human accession, by a male member of the bride's clan marrying a girl from the bridegroom's clan. That would be the mathematical regulation of the matter, as it were, by which neither party would get the worse of the bargain. This can no longer be carried out under complex

conditions however. What is to be done about it? Robbery is no longer consistent with morals and customs either. Therefore a compromise is again sought. The suitor must give the other clan some sort of a substitute. It is very easy to calculate the value of a human being in terms of oxen on this naïve basis. No particular contempt of womanhood is needed for that. A man who was allowed to go over to the other clan as a strong helper could likewise have a value placed on him in exactly the same manner if necessary, without a real slave trade being involved. The duty to make reparation in payment form can hold good even when the person involved leaves the clan absolutely voluntarily.

Marriage by barter is called ukulobola among the Zulus. Everything is strictly regulated. The average price of a wife varies from four to six head of cattle, but a chief's daughter is worth at least 25 and often 100. Ratzel well says: "The deepest root of this custom is not in the hearts of the men but rather of the women, in whom the feeling of their own value is increased with the number of oxen for which they are bought. As a rule a man would be just as little inclined to take a wife for nothing; he would feel humiliated by that. The marriage bond first gains the strength of mutual recognition by this purchase and the husband as well as the wife would not consider that they were regularly united if he had not given something for her or at least promised something." If the woman proves to be particularly efficient in marriage, as regards working and having children, her relatives not infrequently come along with a demand for further payment. Conversely, cases happen where the husband sends the daughter back to his father-in-law on the ground that she is unserviceable, and demands repayment of the purchase price. If her old man does not agree to this, the husband degrades her to the position of a slave; as long as the purchase was recognized as legal and binding by both parties it confirmed her position as not a slave, as a free woman!

On the other hand you must not confuse the purchase of a wife with our concept of dowry. The marriage-portion goes to the young people themselves and is intended to form a material basis for their marriage. The purchase price is received by the father-in-law and in him by the clan from which the girl was obtained; it represents atonement for the imaginary "robbery."

The melodies of the old pastoral pictures in the Old Testament mix in here in charming fashion. You have barter in its most idyllic form in the legend of Jacob who sues for the hand of Rachel. All the capital which the suitor can offer lies in the strength of his hands. For seven years he places this strength at the service of his father-in-law, then his atonement is paid off and the daughter is his. We are far removed from fighting and robbery in this case. The suitor buys the bride not with his blood but with his labour. But here too it is still work for the strange clan, not for his own home. Whoever reads the Old Testament love-stories with an eye to these things will everywhere find the old trails which these primitive love affairs wore in humanity's soul. The morning sun of civilization already shines into it and makes the outlines dissolve. But the fact that it really does still stand with one foot in the great grey mist out of which this savage and tender, crude and self-developing human animal crawled up, makes this book so wonderful.

Far north in the neighbourhood of Kamchatka you have a related picture which at the same time carries you further. The time is just before the middle of the eighteenth century. An expedition comes to grief there. Its members are shipwrecked and are marooned on the wild shore of an island for almost a year. This region is also the scene of the sea-bear's love-story. That expedition became famous for two different things. In their extremity the shipwrecked members discovered a source of food there in a giant sea-cow. At that time it was still living there; a little later it had been exterminated to the last cow and eaten up by these and subsequent visitors. We know the details about this sea-cow because one of the members of the expedition was that great observing scientist, Georg Wilhelm Steller of Windsheim in Franconia. Steller not only told us about the life and love of sea-bears and sea-cows. He also described the customs of the Kamchadals, the Itelmenians, the hyperboreans of the Bering Strait in their monotonous existence at the border of the polar waste.

And the same simple picture of the suitor who wants to earn his bride by working for the father-in-law appears. Listen to Steller:

"When one of the Itelmenians wants to marry he cannot get a wife in any other way than to pay for her on the installment plan

by his services to her father. When he has picked out a maiden, he goes to her home and does not say a word but acts as if he had long been known there. He pitches in and does all manner of household chores in common with them, and tries to make himself agreeable to his prospective parents-in-law and the bride by the magnitude and efficiency of his agreeable and hard services. Though the parents as well as the prospective bride may smell a rat right the very first day and see what and whom he is driving at, because of the fact that he pays particular attention all the time to one person and endeavours to be of all manner of assistance to her and tries to lie down to sleep as close as possible to her at night, nevertheless nobody asks him a thing until he has reached the point after one, two, three or four years of menial service where he is agreeable not only to the parents-in-law but to the bride. If he does not make a hit with her, all his services are lost and in vain and he must pack up and leave without any payment or other form of satisfaction. If the bride shows him any signs of her favour, he asks the father for his daughter's hand and declares what his intentions were in serving him, or else the parents themselves say to him: you're a pretty good and industrious fellow, go ahead and see how soon you can trick and overcome your bride. The father never refuses his daughter to the suitor but he likewise never does anything more than say: gwaitei, catch her, grab her, then the wedding will take place immediately. From the moment the prospective bridegroom works and serves in the home he has at all times a perfect right to lie in wait for his intended bride and try and take her by surprise and overpower her. On the other hand, the bride at all times keeps a sharp watch to see that she is not left alone with him inside or outside the house."

However, one fine day he succeeds in triumphing after all. We are in a naïvely brutal world. The surprise attack is meant to be crudely violent. It must reach a definite objective at least symbolically. The conqueror must take off the girl's clothes forcibly and indicate love's sanctuary with his hand. If he fails, he is beaten up by the girl's relatives into the bargain. "But," Steller adds, "if the bride was very favourably disposed toward the bridegroom she soon surrendered and let him have his way, she did not entrench herself so strongly and she even gave him an opportunity to attain his objective, but all the while she had to simulate refusal for honour's sake and for the sake of household economy."

Now note how a second factor grows perfectly clear here on the side.

Ever since people have been hearing about "buying a bride," the fact has aroused no end of horror that a woman could simply be given away like an ox, regardless of any wish of her own in the matter. And the suitor who came without any preliminaries and bought on sight likewise appeared in a strange light. Where was there any "love" to all this, or to put it zoologically, where was there any free selection of the best, any individual choice? Did man hit upon forms of love-life which at times entirely eliminated this tremendous factor which grows more and more powerful in the higher animal kingdom?

One might answer that a single look at the physical beauty of the girl could be enough to make the suitor close the bargain and buy her, and that would then be æsthetic selection. The girl might think that he who pays best with the result that her father concludes the deal will likewise be the best suitor. But this last excuse has a dangerous hitch to it. For man as well as mole there is an immortal meaning in the idea that the best man is he who can get the girl, for the very reason that he can do so. Brunhild can confidently lie in her bower of flame, for whoever surmounts the burning barrier must necessarily be a Siegfried. But if the waving flames can be paid off with money, a strange feeling does come over one. And here is where the little tale about the Itelmenians proves extremely instructive. It clearly shows how nature with its law of selection achieved its purpose here as well with the resultant advantage of the incessant improvement of the race.

In addition to the money sense, the practice of earning the bride by service in her home has the sense of coming to know one another; it introduces an interregnum of considerable length for the girl during which she enjoys freedom of choice. A rough and ready trial of strength must crown the whole courtship, but the girl's feelings which sum up the results of living in unmarried propinquity during those years have a say in the matter.

The practice of serving the father-in-law does not take place everywhere; what then if the suitor really comes quite unexpectedly to the maiden's father and wants to buy her?

What good would it do if the father asked his daughter whether she agreed to the transaction? Where things are not more or less in a state of degeneration, say with polygamy already having de-

graded the woman far below the normal degree as it is, you will see in the case of the naked savage as well that this question will be put and that the woman's veto holds good. It is clear that a rich suitor will make a favourable impression on the girl in advance. Why not? In man's implemental sense, wealth at a certain stage is at bottom only an organ transferred to the outside; it represents a reserve stock of life-blood and nerve force deposited on the outside and therefore accessible to the wife as well. But if wealth is supposed to be a substitute for the suitor being hump-backed, the healthy natural sense of every normal girl from the naked child of savagery to civilization's most fashionable young lady has ever rebelled. Conversely, the girls of all the millenniums have ever played a plus quantity of spiritual and physical charm as an equivalent for their poverty in sounding treasures. And you always find the girl strongly asserting this healthy instinct in all the real and legendary love-stories of all peoples. The beautiful young swineherd gets the princess and the doddering senile suitor who comes along with the money-bags is left holding the bag. But for all that and just because of all that, the question arises how the suitor and the girl are to have an opportunity of coming to know each other before the case comes up before the father-in-law?

Here another line in the love-life of natural man becomes clear at this point.

The more firmly and securely marriage itself develops both legally and morally, and the higher it mounts and the more it becomes a great, fundamentally important matter between two clans with binding social, racial and legal provisions, the more is intercourse permitted between the young people of both sexes who are still unmarried.

§ 7

This also is a tendency that comes up through the whole history of humanity, from the naked savage, where the young folks frequently from a kind of association among themselves with the freest sort of customs at which nobody takes offence, to our rough peasant dances and our ceremonious ballroom dancing.

Observers have always racked their brains desperately over the fact that side by side, among all possible peoples of the big terrestrial ark, they encountered the most ingenious means of making marriage firm and secure, as if it were absolutely the only genuine and sacred thing for sexual intercourse, and then again an unrestraint of intercourse between unmarried youths and girls which seemed to mock all marriage. Among the negroes of Africa you frequently find the very keenest conception of the married woman's virtue and faithfulness, and alongside of this not the shadow of comprehension for the cloisterlike chastity of the girl who is still unmarried. Among the Malays in Lambok the adulteress is bound together with her seducer and thrown to the crocodiles; the unmarried young girl can have as much intercourse with men as she pleases. The men's clubhouse may be never so strictly closed to all married women, yet threads are spun from it unabashed to the unmarried girls, as related.

To a certain degree this tendency is everywhere still crossed in a hostile way by that other tendency that the bride must be physically pure at her marriage. Where this latter becomes a clause in the purchase contract, naturally a limit must be set to the free intercourse of girls far below the real erotic objective. But elsewhere no importance is attached to this, and then nothing stands in the way of the most diverse trial relations preceding genuine marriage.

Whoever regards this superficially will miss any standpoint of morality in it and talk about the unchastity of the young people crying to heaven. And yet these things had their crude natural morality as well. There is a profound causal connection between the interregnum of free love before marriage and marriage itself. It again constitutes a compromise on the part of darkly groping intention: the compromise of marriage which cannot be dissolved again and

which is legally important, with that very principle of the selection of the best possible couple and the one best fittted for the fundamental purpose of marriage.

The tighter clan shut itself off from clan in primitive times but the more necessary intermarriage between clans nevertheless became, with all the attendant phenomena such as stealing the bride and buying the bride, the more necessary did it become to cut the Gordian knot at one point, namely, the relations between the young still unmarried people of different clans. For their benefit the clan as such had to be abolished at times, as it were; a certain loose interplay had to be tolerated by both clans until the right pairs had found each other for the purpose of getting married.

There could no longer be any "trying out" in marriage itself, nor was there supposed to be. Once it was concluded the trap-door was down. There was something final about it. It was natural enough therefore that these pre-marital tryouts reached over gropingly into the practical field of marriage. Would the man be erotically strong enough? Would the girl have children? Better determine that by a trial rather than see the marriage wrecked on this rock afterwards. Among those Kamchadals, the man may nearly rape the girl before marriage, in fact, it is demanded of him that he at least show the necessary physical strength to do so. But he goes to the ultimate goal only symbolically, not actually. When he has symbolically touched the spot where new life is to bloom during marriage with his hand he has passed the test. In the midst of our civilized world, however, you have customs that really go very much further.

One has to participate in all the solemnity of a peasant wedding in order to get an idea in what high esteem the moral and legal viewpoint of marriage is held among our genuine, old landed peasantry. And yet in peasant circles, quite quietly alongside of marriage, you find the widely prevalent "custom" of the engagement period before marriage developing into a regular "trial marriage."

"Trial marriage" is by no means a sexual monstrosity, as superficial moralizing leads one to believe, but there is a very sound idea back of it. The engaged couple does not enter genuine matrimony at once but for one year or a few years carries on free sexual intercourse which goes all the way to its goal, to be sure. What is put to the test (and that is the very object of it) is whether the man's virility and the girl's natural disposition are really such that the

great and absolutely essential pledge of real marriage, namely, children, may be expected. If all this trial intercourse produces no pregnancy the couple part, and this intercourse involves no blemish on the girl's character. On the other hand, if pregnancy does result it is now the verdict of the supreme court of public opinion that marriage must be concluded on moral grounds. If the betrothed were now to abandon his girl he would be considered a seducer devoid of honour, making light of the end which alone justified and consecrated the means.

This "trial marriage" is obviously a very ancient institution among all civilized peoples of Europe. The English peasant in Yorkshire has a definite formula for betrothal: "If thee take me, I take thee." The peasants in the Black Forest make a distinction between "come-on nights" and "trial nights." A young fellow clambers through the window into the girl's bedroom, but just for chatting at first. That is the "come-on" night, the first stage of getting to know one another. Only after a while does the trial night with all liberties develop out of this. But that can quietly pass, too, and the girl can change her betrothed without any damage to her good reputation. He simply did not happen to be the right one! Only when the change takes place too often does the odium become attached to it that the young fellows were the parties who occasioned the change and that the girl must have a "marital defect."

You can infer remnants of similar customs in the background wherever the cult of the wet-nurse blooms. Economic life has simply seized upon the matter. The condition of the girl who is pregnant before marriage has become a means of earning a livelihood, which causes marriage to be postponed until long after the birth of the first child. But in the majority of cases this child is not an illegitimate one in the crude sense of the word on that account. The wet-nurse returns home and marries her trial husband. If he abandons her after all, he is a scoundrel who has broken "faith"!

In all these changing arabesques of human love-life you still have hardly departed from the main line as already drawn in the animal kingdom.

One stage is left over which likewise already existed in the animal kingdom. That is the disintegrating effect of the social element on marriage generally. And this tendency is noticeable in humanity's love-story even though nowhere really fully developed.

We noted that the social element was not able to do anything against the ever growing might of marriage, at least not in the evolutionary sequence of chapters so far. But as an undercurrent it did tend to undermine marriage, and it is important to get this tendency clearly in mind since it can easily become a source of the strangest misunderstandings. What would not be misunderstood in this field as soon as we threw the simple compass of conditions among animals overboard! It is useless to want to steer the little bark of humanity directly toward the sun. It can only sail to the sun because it is attached to the earth. At this earth's pole the voyage has to be discontinued for the present; but in the great concatenation of things it is a journey to the sun after all.

Among the Bakairi Indians you had the case of young girls not only keeping up relations with the bachelor club for the sake of love-selection with marriage as its object, but a certain number of them permanently adapting their love-life to the bachelor clubhouse.

A courtesan class, in which marriage is eliminated, develops here. The existence of these unmarried bachelor girls in turn brings with it the possibility that the clubhouse will not merely remain a club of men who are not yet married but that it will become a regular confirmed old bachelor club whose members do not care a straw about marriage. The clubhouse girl takes the place of a wife as far as a man's erotic requirements are concerned. The clubhouse offers a substitute for all the comforts of home. The question of children can be regulated socially. "All men with whom she has had intercourse count as the fathers of any children the girl may have," says Steinen. The club, and behind the club the tribe, are responsible for these children just as among the penguins. When one observes how late in life the young men among these Indians marry one has the feeling that something of the kind actually has come about there. Things are almost in a state of equilibrium. Marriage exists and holds good. But one can get along for a whole joyously amorous lifetime without marriage too.

You find approximations to this state of affairs everywhere, all along the serpentine line of peoples. Turn at once to us. You have men's clubs which constitute a force against marriage among us. The simple public house is a beginning. All student life has a tendency in this direction. What of those who might keep something of the "eternal student" about them! Concubinage and prostitution with their many gradations abundantly replace the clubhouse girl

for us. A man does not need to be bothered with jealousy. He has no responsibility for this woman. He can spite all prevailing marital customs of his civilization and dispose as to whether he wants to be a monogamist or a polygamist. Oh, yes, the children. But in the first place there do not need to be any. And if there are, let them be put in an orphan asylum or be farmed out otherwise. In taxes—society's great conduit which empties everywhere—one is paying a percentage for the maintenance of public institutions, one is paying for the support of orphan children of married parents and for public schools generally and so on. Who does not know this line of talk *pro domo* of the dyed-in-the-wool old bachelor who does not want to be an ascetic by any means? It also is a melody that has been running through the millenniums of mankind.

There is a point in this which at once reveals a profound contradiction in glaring fashion. There do not need to be any children! Where that were to become the slogan, the social element would put an end to itself instead of merely menacing marriage.

Here you have a specifically human, separate matter mixing in, and one which did not come into consideration for the animal. Undoubtedly at a very early stage primitive man hit upon something which was bound to prove an important factor in all these things, clubhouse life, unrestrained intercourse between young people, trial marriage, etc. Man discovered the ways and means of preventing impregnation even when the act is consummated to a far-going degree. Our conversation must come back to this problem here.

Taking the broadest view of it, man is merely taking up with his consciousness, will and implement something which was long an occasional organic principle in nature, serving the highest purposes like all other principles. In the vegetable kingdom you find the most ingenious devices for preventing fertilization if it is not supposed to take place for some reason or other. Stamens and pistils are frequently so close together in the same flower that the existence of this flower really represents a permanent sexual act as far as external conditions go. And yet no flower is really supposed to fertilize itself, because of the dangers of inbreeding. Special ingenious means are therefore employed for preventing it, for preventing true conception in the midst of the act which spacially is constantly consummated. We spoke of this once before. You likewise recall that the same thing held good in the case of animals having hermaph-

roditic organs. There, also, metaphorically speaking, you had an abundance of nature's rubber articles for getting around conception despite the literal compulsion to sexual acts.

Between totally different animal and plant species there are further, more direct hindrances in the love products themselves. You can pour as much mammalian semen on fish eggs as you please and no fish-man will originate, for the germ substance happens to have its own law within it which prevents true innermost mixing, genuine conception despite all external contact.

All this, however, is developed in plants and animals as an inborn physical capacity having the character of an organ.

As man begins to unify all nature's ability otherwise in his mind in order henceforth to continue it consciously with his means from a higher basis toward the great cosmic goal it is in itself a pure and necessary matter for him also to get this reserve means for preventing possible incongruities consciously in his hands. If, in the face of powerful erotic instincts (which as such are just as necessary as the hermaphroditic structure of flowers was in itself necessary for other reasons) man was sometimes unable to check the external course of the sexual act, it is of the very gravest importance that he should be able to prevent the true union of the ovum-cell with the sperm-cell, from which the new human being springs, in very definite cases. I called that the sacred side of the situation before, and every sensible physician will agree with me.

The more we begin to realize the frightful harm done by the hereditary transmission of pathological dispositions at random, and the more we comprehend that we have to cope with a law of heredity which visits all sins past salvation to the seven times seventh generation, the more strongly must we become imbued with a sense of duty to counteract this to the best of every one's ability.

The individual human being does not necessarily have to keep in contact with humanity and the future by means of physical children. He is a human being after all, and man has other ways of doing so. I can sow love, self-sacrificing love of mankind, which will continue to work on. I can write books which will draw vibrant circles infinitely farther. Man possesses possibilities of having mental children. If his brain is sound but his lungs are sick, let him procreate with his brain and posterity will thank him for it; but he should not procreate physical cripples who inherit his lungs to their own great misery. In these cases there is a moral sense to preventing concep-

tion as an act of man's will, just as the preventive means against self-fertilization in the flower had an appropriate sense.

But it immediately becomes apparent where the decision as to the use of this two-edged sword belongs: in the hands of mature people who have experienced the great inward moment of illumination when the conception of humanity rose before them as a religious factor. In addition to their negative duty, these people will invariably see the other, positive one: namely, that it is the duty of every healthy man and every healthy woman to go the whole distance along nature's love-way to the actual procreation of children, and that this is just as great, just as sacred and just as unavoidable a duty. In the hands of these people you can confidently place the arcanum which our science to-day does not possess at all: namely an absolutely sure means of preventing conception in all cases. And you have the certainty that such people will not misuse it.

That is the view as seen from a high watch-tower. But this watch-tower is an end of humanity and not a beginning. The beginning had to take the form of more or less wild experimenting, with all manner of possibilities and dangers.

The one side of human endeavour to reason out the problem was fairly harmless. It had something of the search for the philosopher's stone about it. Men sought for a medicament which would render the user absolutely proof against conception, just as a secret means was sought which would confer absolute immunity in battle. These attempts, with infinite variations, proceeded essentially without result. Philosophy mixed in. The pollen of unfruitful trees, willows or poplars, brewed like tea was supposed to produce unfecundity, on the principle of like curing like. To this day one cannot talk popular superstition out of this idea about willow tea, of which the ancient Greeks and Romans already wrote. Another popular theory believed in the infallibility of pears and medlars grafted on hawthorn. All in vain. Tincture of cinnamon and English balsam, gentle honey and the most violent purgative drugs such as aloes and myrrh did not help any. Nature snapped its fingers at all this. It would not be interfered with that easily.

The campaign first became dangerous when the fundamental fact of all love-life was happily grasped: namely the rôle of the male semen as an absolutely necessary prerequisite in all cases.

The methods which aimed simply at damming up the source of life and keeping it from reaching the place of conception attained

their goal in principle, little as people still suspected what was really being dammed up. This achievement was the result of daring experimentation thousands of years before the microscope showed the first real spermatozoon, the little fish of life in the sacred spring. You have an official legendary figure for it in the Old Testament—old Onan. Onan suffered the world historical fate of having his name get over a totally wrong chapter in the book of human love: it was called onanism after him. In reality he perpetuates the memory of the custom of drawing back as a primeval possibility for humanity.

This custom is by no means an ingenious invention of civilization's: the negroes and other primitive peoples occasionally practise it exactly as does civilized man. Among various tribes, particularly in India and on Java, the womb is displaced by artificial means so that the inner gateway is temporarily closed. If a final hindrance is to be created, the Australian woman knows ways and means of destroying the ovaries, somewhat more crudely but almost as well as light-minded Parisian doctors perform it for willing women patients to-day. We already spoke about the gruesome *mika* operation by which the male member is tapped all along the side in order to destroy the transmission.

The sum-total of all this is clearly that this "possibility" was bound to intervene powerfully in all the social processes which I last described. It must have played a rôle in all youth's trials and tests from a very early stage. It was less dangerous here since marriage always towered up as the goal of these attempts. It limited the number of pre-marital children while affording the greatest possible scope for selection by trial, without touching marriage itself. But when the "clubhouse" began to menace marriage, the real danger was suddenly on deck.

How plenty of opportunity is at first given in natural evolution for everything to develop keeps on being an extremely interesting spectacle. The crazy lines of development are then gradually carried *ad absurdum* in actual practice, and in the end perish by their own illogical ridiculousness, so to speak. From the standpoint of the victims of the experiments this practice may have its cruel side. But one gets the impression that it was necessary, as things were. The absurd element might not be passed over in silence or suppressed; it had to see the light of day and bring about its own destruction by living in the open. Only in this way could an absurd-

ity be drummed out forever. It is strange but true that whoever has had occasion to work with men even on a small scale, even though it was only in a tiny association, some insignificant political or other party nook, has had the same experience. What is necessary is not to suppress the stupid members with authority but to let them blunder on; they must find themselves out and experience their own stupidity. It is true that much harm is done to others, to innocent persons, and it is cruel with one's own seeing eyes to let others rush into destruction. But in the end you reach the conclusion that there is no other way, if the cause or the association as a whole is to be advanced through the stupid individuals as well: their sole salvation is finally to become wise on their own cross; though to make this consolation complete some further and somewhat profounder thoughts on individuality and its training by fate would be required.

Enough: in our line, too, much has worked out well but much has run itself into the ground. Out of the clubhouse girl whose children were taken over by the tribe there grew up the prostitute, who represents something like a sexually stunted ant in the picture of the human animal's varieties. The idea of the child is entirely eliminated in her case. With it, marriage in every form went by the board. But love-selection as such has thereby become illusory as well; in the end the whole principle of individual selection is eliminated: nothing stands in the way of the prostitute having intercourse with any and every man if it only brings in some small advantage or other. A line started with this small advantage which touched social and economic elements along a new road. The prostitute tries to enter into a protective community with all men, she demands a little support from each one: she tries to make a place for herself in the social element as the property of society.

The line of development can be carried very prettily to this point and attempts have constantly been made to draw it and maintain it logically in the evolution of humanity. The breeding of these sterile amusement-ants, having the right to levy a sort of social tax in every case when made use of, seemed time and again to have been crowned with success to the point where it could begin to be sanctioned by logic. And yet the fact kept on being comprehended instinctively and with telling effect that the calculation contained an absolute mistake, an absurdity which could not be eliminated.

By eliminating the concept "child," the prostitute, created as a

social institution, is a negation of this social element, she is a perpetual menace to the social idea "man," which needs a succession of generations, an "immortal mankind" extending beyond the individual. The social element puts an end to itself here like the sausage in the picture book which swallows itself. Moreover, as a social institution the prostitute actually does break up individual love-selection and thereby cuts off a root of continuous further evolution in society as a whole. There remains no way out of any kind for her to have individual preferences if she does not want to destroy her economic relation to society as a whole. Every one who wants to make use of her is obligated to pay his share of her cost of maintenance, he must pay the tax, as it were, which makes possible the existence of a sterile pleasure ant in society. But with the payment of this tax the man in question acquires the full right of occupation for the act of love, and the prostitute logically has no power to withhold herself from such legal possession. What was only seemingly possible in even the crudest form of marriage by purchase or was possible only in already degenerating aberrations, makes its appearance here as an absolutely logical compulsion: the annihilation of the whole principle of individual selection, in other words the entire gigantic line running from the bird of paradise up to us.

The principle of prostitution has ever been wrecked on the rocks of this doubly mistaken sense and ever will be, as far as being a genuine factor in humanity is concerned.

The true reason why the prostitute has increasingly met with such annihilating moral contempt lies in her illogicality.

We are in agreement, are we not, that never in the history of the world has any kind of "morality" rained down from a supernatural heaven. The simple logical laws which created your arms and legs hold sway in all views of morality as well, even though elevated to a higher stage of consciousness. More or less conscious groping after logic in the positive and illogicality in the negative sense lies at the bottom of every moral law. With the more certainty consciousness already went ahead, the greater is the world historical force of such a moral law, in which connection free scope naturally remains for evolution, temporal illogicality does not need to last forever and therewith morality, too, must occasionally change; but in general, the history of humanity during its few clear thousands of years is still so extraordinarily short that a great change in the lines at their principal points is not probable; hence the fact of the relative

tenaciousness, the old venerable character in our most important moral tenets, which only the very superficial person who wants to bring about innovations at any price can overlook.

To us, who in many cases have already had the matter somewhat automatically drilled into us to-day, it seems a matter of course that the prostitute plays an "immoral" rôle. But there would originally have been no occasion whatever for such a verdict without her illogicality.

There was in itself nothing immoral about a woman having intercourse with a number of men, for humanity as it began to develop. This was not exactly favourable to permanent marriage, but we have seen that permanent marriage crystallized only slowly and experimentally out of temporary marriage, and we are merely talking about possibilities where the social element crossed marriage again in the case of human beings. There was nothing immoral either about a woman's material value being appraised and the suitor paying a herd of oxen to gain her; this principle dominates marriage in all its human beginnings and was by no means hatched out by prostitution. Lastly it was in itself not immoral to squander the wave of life to no purpose at times, and let the instinct have free reign without fulfilling its deepest sense. Where would the critique of marriage get to if it wanted rigorously to put through the demand that the erotic act might be done only for the express purpose of procreation and each time after this fulfilment not at all for a certain length of time.

More powerful natural factors are involved here than we are.

Man from the very beginning existed for us with these strange facts—a long period of carrying and nourishing the young in the case of the female and breeding-time being an almost permanent possibility for many years. Those are established facts which nothing shook, and with which humanity had to come to terms as best it could as the supreme logic of reality. Do not forget either that strictly monogamic permanent marriage was only possible because of this postulate of countless acts of which it was certain that they were senseless in the sense of real procreation. In polygamy a man, whose preparedness for love continued during many years without any very long automatically imposed intermissions, could theoretically change women, if necessary, three hundred and sixty-five times in a year and each time theoretically for the purpose of a genuine act of procreation. To live with one woman permanently demanded

uncounted compromises with this figure. To say nothing of the desires of the woman herself, whose erotic instinct also was absolutely not transmitted to her in a form that would be satisfied with a single act of conception to two years of pregnancy and nourishing her child. In further agreement with these facts are those medical viewpoints which under certain assumptions relating to health would rather have conception precluded entirely in individual cases without being able to shut off the erotic instinct itself in these individuals with a fish bladder or a pessary.

Present-day life of prostitution contains a whole series of disagreeable phenomena which to our mind enter into the idea of immorality, in fact frequently serve to bring it to the fore, such as the brutalization of these girls as individuals and the way they are spoiled mentally and spiritually by neglect, customarily uniting in themselves as they do all the phenomena of degeneration in our civilization in the most horrible caricature of womanhood, further the system of pimps, panders and bawds and other things; but all these phenomena are not the reason for moral contempt; they are the consequences of this contempt as it has been expressed in practice for many hundreds of years. They are the poisonous flowers of a life continued amid public contempt; in them lies the frightful human tragedy of prostitution. This touches a chapter in which the martyrdom of illogicality mentioned above continually and painfully wounds an intellect which is more finely organized. Every criminal is a martyr to his own utter lack of logic. His struggle, too, has a very profound sense: the sense of carrying a false principle *ad absurdum*. But in individual cases it does remain a tragedy after all that a negative factor of progress has to be fought out to the finish and paid for with one's head. Civilization has tortured the prostitute and degraded her to a savage and a criminal with a cruelty devoid of mercy. All the world sees the consequences, but only as consequences. Morality itself is older than she, and by no means her product. By no means is there anything in the original picture of the prostitute to indicate that she is a semi-imbecile, drunk, culturally crude and the comrade of a bandit to whom she has attached herself in her need incident to an existence without rights. But this original picture does show the fact that she represents an illogical principle. A principle which inwardly causes the disintegration of humanity's love-life. And the instinct of humanity developing along moral lines grasped this from a very early stage.

But let us leave the prostitute out of our picture. Let the poor sterile pleasure ant with her botched course quietly fall throughout humanity. Throw after her everything that is merely reminiscent of her. There is more of that in our civilization than one generally likes to admit. I am thinking of traits of prostitution in the midst of our marriages. I see those female slaves of fashion again, who do not want to have any children in marriage either because of their frankly declared levity and lightmindedness and because of the amenities and pleasures of the fashionable woman's life of luxury, leading only a more or less covert prostitute's existence whose nakedness is scantily covered over and which in most cases does not lack other very tangible similarities as well. Then you have natural love-selection displaced and checked by wrong ways in education and upbringing, which frequently do not make a young girl capable of making a genuine individual love-choice and which suddenly toss her into marriage with her eyes opened only afterwards as to how she should have chosen according to her nature. Whoever takes an earnest look into our life without letting himself be deceived by words will see a mass of these and kindred traits which the word marriage only veneers very poorly and on all of which the curse of prostitution weighs a thousandfold.

But there is still a second and much more interesting line which starts with those free clubhouse girls in the jungle.

That social form of love which skips over marriage does not need to include the evils of prostitution. The clubhouse girl could have children just as well as a married woman, which actually appears to be the case among the Bakairi. The clubhouse girl did not need to give herself indiscriminately and compulsorily to every man who wanted her; she could keep a certain freedom of choice despite the utmost liberality in scattering her gifts of love among many different men. And protected by logic here, she by no means needed to be subject to general moral contempt, another point that seems to be really fulfilled among the Bakairi.

At this place in the great dream of humanity's soul during thousands of years the grotesque faces and painted death masks of the poor victims of prostitution do not arise but on the contrary, phantasmagorias of fascinating beauty interpose themselves—wonderful, longing pictures of ecstatic vision into the supreme happiness of the universe.

Here is painted the paradisian bliss of heaven into which the

brave shall enter after earthly death. The Mohammedan pictures waking upon a flowery mead where beautiful girls surround him, the girls of paradise who do not belong as wife to any one individual and who yet let him finally taste all the sweetest harmony and delight of supreme love to the absolute limit. The orient painted that in glowing sensual colours. But Goethe too dreamed of the houri in whose arms he would wake up and who would say to her poet: "Sing me the songs to Suleika, for you will do no more in paradise." And it is again clubhouse girls idealized to the ultimate who catch up the brave warrior bleeding to death and bear him to eternal free sunny love in the eternal mead-hall of Valhalla in the dream of the old Teutons.

We no longer like to project such pictures of desire into metaphysics. We throw their luminous band of colours into the actual future of humanity, into the mighty immortality of the species and its progress. But there too the houri and Valkyrie ideal appears. Woman, freed from the turbidity of all that savours of prostitution but likewise liberated from all the limitations of marriage, all houri, all Valkyrie, the clubhouse girl intensified to the colossal proportions of an ideal. She belongs to every one to whom she wants to make a gift of her love and for as long as she will. The free children of her free love grow up in the sunlight of human community which pours out endlessly, happier than the children born in wedlock to-day who are so unequally looked after.

Only when you behold such pictures does the question become acute whether in the case of man the constant growth, the incessant improvement and perfection of the social element on a large scale would not be bound to suck up the old small private attempt of marriage to form a union, and make it superfluous as an intermediate stage in evolution which had done its duty and can go now?

If there is one thing sure about this it is the continued progress which nothing can stop in the matter of social organization, with humanity becoming ever more happily and successfully ordered and arranged. The logic which holds sway here is just as plain and simple as that between the bits of glass in a kaleidoscope which may roll around in confusion for a while but which must then inexorably fall into a definite harmonious pattern. In countless cases humanity on its planet is still in the stadium of kaleidoscopic rolling, and out of the brutal collisions blood spouts and the voice of oppression and

need laments. But the great lines of the harmonious pattern already hover over us like a tremendous mathematical net, the runes of a mathematical social ethics which are legible only to the initiated.

The gay bits of glass will arrange themselves in their proper order.

The cave in the chalk rock, in which the band of mammoth hunters got together, was a thrust in the human kaleidoscope in this direction. Christ was another. What we call the social question to-day is again only another one. And in the same way the millenniums after us will find more words for the great stations on this line. But there can be no doubt in my opinion as to the result. Here too a law of nature goes along its course. And what built Milky Ways harmoniously will in the end also be able to bring a few hundred million human beings on a tiny star into social harmony.

But is it at the same time the horoscope of the decline and fall of marriage that shines in these beautiful stars? Must it set, this primeval flaming star of love-life, when that constellation of a peaceably united humanity in which need and violation have died, slowly rises higher and higher on the other side of the heavens?

This question touches a second one.

§ 8

An old tendency runs through the thinking soul of humanity to projects its ideals of the future into the historical past at the same time.

At an important place in our conversation we established the fact that a slight contact exists between modern hypothesis regarding the higher origin of man and an old dream of humanity's: namely, the idea of paradise. But in the end our scientifically supposed sanctuary epoch had nothing to do with the idea that in the beginning of things everything was already fulfilled there which we only expect of the future. Legend on the other hand, has again and again tried to read out this very idea, and in this sense legends of paradise lived and live not merely on religious ground alone. In the most widely varied fields, a wholly ideal picture of paradise which, as a matter of fact, could only be the result of ceaseless struggling to obtain a very distant luminous ideal of the future, is dreamed back to the beginning of all earthly things and all human things.

Thus Rousseau does not behold the magic land of his immaculate "nature" at the end of days, in a nature conquered and purged by the supreme spirit of human love, but he seeks it at the foundation, below all civilization, thousands of years beyond human love among naked savages.

In our time it was particularly the idea of the dissolution of marriage in a social ideal which sought to capture the ancient past in addition to the future.

The future looked so sky-blue. A realistic epoch preferred to support itself on the hard bottom of tangible facts in the past. As a value of the future, the social dissolution of marriage, it was said, is only a case of returning home to things at the beginning of humanity. When man crystallized out of the animal he did not know marriage. What brought marriage about was a more or less extended social organization: larger and smaller co-operative associations made common cause. At that time, in the beginning, absolutely free sexual intercourse ruled in these associations. Every

woman had intercourse with every man at pleasure, and the children belonged to the whole clan.

Note that the idea of prostitution was completely lacking in this marriage-less non-society. Freedom of sexual intercourse neither embraced compulsion for the woman, which would have killed amorous choice nor checked the natural production of children.

Nothing could, therefore, have been more unhappily chosen than the word which an important explorer of this field, Lubbock, sought to inject into the subject: namely, the characterization of this primitive condition as "hetærism," as if it had been a stage of general prostitution. It was not easy to coin a word that would hit the nail on the head. "Communal marriage," which came to be used a good deal, is also bad, for at least in the picture of the beginning this theory does not recognize any marriage at all and it is just herein that its very singular character lies, which the word marriage would only cloud.

But let us drop the word. The little plant of human marriage was supposed to have sprouted out of this free primitive soil. And only within the history of civilization, getting sunshine and being watered by things having only a temporary importance, which in the long run proved nil again in the great ascent of humanity. The most graphic continuation of the theory sounds about as follows:

One cannot get to marriage at all from pure general promiscuous intercourse as the original condition, unless some totally new factor is added. Let strict totemism develop. At first there is free love within each totem clan. That leads to the dangers of inbreeding, and so the clans exchange their women. But still marriage does not develop, even if the law were to develop that one might no longer love within one's own clan. The relation of clan to clan would be the simple stadium of communal property in the matter of love: all the sisters of the one clan would belong in common to all the brothers of the other clan, say all the she-bears to all the male buffaloes. And yet marriage is supposed to have gotten into the game in this vicinity. It came about through stealing women!

All the women in the clan belonged to all the men, there was no marital monopoly here, there were no beginnings of private property. Every woman did what she pleased and had intercourse with whom she wanted to without any single man having the right to possess her love for himself. But the men went out to fight strange clans. There were wild doings. Booty was made, treasure and

weapons and likewise women. The booty was divided. Each brave fighter received his woman or women exactly as he got a sword or a golden ornament as his share. From now on he really "possessed" them; they were his slaves and his women at the same time. Whoever touched them broke the legal contract binding the comrades of battle. Just as formerly each one received his piece of meat of the mammoth which they had killed jointly so now each one had legally received his piece of living, human flesh and nobody else might monkey with it. This woman, as the spoils of war, was the first "wife," so the theory concludes. Private property, a piece of inventory, the slave belonging to a single man. The more that unbounded sexual intercourse of all with all within the clan receded because of the danger of inbreeding, the more did each man transfer his erotic desires to the captured women who had to follow him and him alone. Only now, with the slave of marriage, of woman wholly in the power of one man did the idea of adultery arise, the idea of the breach of law of which the seducer had been guilty against the property of another and the rebellion of which the adulteress had been guilty as a slave.

Thus did the freedom of woman end with marriage. Thousands of years of helpless slavery ensued for her. Until at length social life again gets the strength to burst the chains of private property here as generally. The old traces of robbery disappear. Woman returns to her place there as everything dissolves again into society, into the social union at a higher stage. She becomes a free being again, recognizing only herself and society but not a private owner who places himself forcibly between her and society. And so the flower-laden branches of this paradise of the future again rustle over the old spring and find their reflection down below there again.

There was very much that sounded significant in this modern story of paradise and its counter-part. The proud confidence in the finally awakening social spirit generally, bringing universal happiness. And then the voice of woman's longing to-day, wanting to stand beside the man as an equal enjoying equal rights in this budding social springtime. Achieving all this seemed much easier if one might say to oneself that one was only recapturing the golden balls with which humanity had already played once as an innocent child.

It is hard to polish off theories, in which there is the hearts' blood of a profound, great, sacredly struggling age, with the cold critical

words of the scientist. Whether the form falls, a spirit ever rises again in them.

But if you compare the line of this theory, as given here in the form of a very rough sketch, with the broad foundation for marriage as well as the social element which I built for you out of materials from the higher animal kingdom, the core of the matter, which alone is involved in the question as to the reality of the theory, will become clear to you.

Marriage already existed before man: this proposition is certain and whoever wants to deny it must throw all zoology overboard—the great Book of Genesis in our modern Bible of man. In addition to marriage, the social element already existed in the animal below man.

On the basis of these axioms the first thesis in the theory amounts to the only discussible question: are we to think that man on his appearance was already so very social an animal that the social element had already completely dissolved marriage in his case?

Primitive man of that theory would have been at a stage which the penguins are already approaching; but he would have progressed a good bit further.

In this formulation the matter is capable of being discussed at all only if one does not want to act in defiance of all zoology, in whose text-book the origin of man belongs after all. Now the question is what proofs can be submitted for the supposition, since the first beginning of the human animal already intensified socially to the utmost is not clear according to animal analogies otherwise.

The proofs are weak throughout.

There was something dumbfounding about them when they first came along, because a large number of interesting things which we have already discussed, such as matriarchy, stealing women, totemism with cross-marriages and so forth for the first time came to light in the proper light as facts on the occasion of this attempted demonstration. But it is a question whether these very facts were interpreted correctly in the theory.

For a time it was said that all the ends of the earth were still full of peoples to-day living in the state of indiscriminate sexual intercourse without marriage and therefore giving us a living exhibition of the original state. This line of talk has grown silent again.

This alleged free love has been confused in fatal fashion with the very widespread free flirtation and free loving among those who

were still unmarried, and this mistake in particular was injected into the subject. You saw that this latter practice represents a concession to the most intensive love-selection possible, which is made for the very reason that marriage does exist and is meant to exist in as firm a form as possible.

Then again different phases of free love were confused with the original phase, phases which according to that theory had to be very late ones, coming after marriage—cases where woman was held in great disdain, such as the disintegrating effect of polygamy and a superfluity of females bring with it. In such cases men have no interest in exchanging women with one another, they feel themselves to be the possessors of gigantic herds of cattle with one sheep more or less making no difference to them. But woman is decidedly "property" here; she lacks all freedom of disposal over herself. We are looking into garlands of arabesques entirely branched off from the main line instead of looking at the simple fundamental cause.

The contrary of this has caused confusion: conditions among savage peoples where the "rarity" of women was the decisive factor. The fact that there are customs in the Australian-Polynesian region which permit a married man to place his wife at the disposal of his still unmarried brothers was supposed to be the significant last red sunset band of a custom of brothers having their wives in common and this in turn was supposed to go back to communal possession of all the women of the clan or it might also go back to two clans with all the brothers of the one clan visiting all the sisters of the other clan and vice versa in free love. But wherever such traces have made their appearance they can be explained again and again by the reasonable suspicion of rarity (quite apart from the indistinctness resulting from transmission by tradition, which has rapidly evaporated these important documentary proofs to the point of unrecognizability). In this case woman is a rare and valuable article, too precious for one man to be able to own alone. Several men must share in her, and the most natural thing is for brothers to do so. Compulsory multiple husbandhood (polyandry) got into marriage here instead of polygamy, but marriage itself remains untouched; it is the older institution and it merely went in for a compromise in this manner.

Lastly, some strange things have been mobilized as arguments in favour of the theory, things which have been stalking here and there like ghosts in the natural history of the human animal and in which

certain phenomena of marriage being dissolved and eaten into by the social element become noticeable. But the proof is always lacking that these facts involve remnants and survivals of a victory that was already won in primeval days as a result of fighting it out to a finish, and not simply small starts in that direction and occasional attempts to gain such a victory.

There is the justly famous *jus primæ noctis*, for instance. So many legends and myths are woven around this that it is not possible to tell its true story at present. I shall merely explain the heart of the matter. Let us go at it with a modern picture instead of narrating a chapter from the old tales when knighthood was rampant. In one of the big modern cities of the world there is a department store with a manager and a certain number of saleswomen, handpicked, pretty girls. These girls may have their private love affairs. But it is an old established practice, an unwritten law of custom for the head of the business to have seduced them and had them first. It is his right as the "chief," which is also maintained in this case. This case is unfortunately not pure fiction. In this loose form the "right to the first night" (*jus primæ noctis*) has undoubtedly kept on arising and been practised in humanity for as long as there have been "chiefs"; simply substitute any one of a dozen obvious words for department store and you will see that this holds good.

To what extent this unwritten right of might was an actual legal "right" in more modern days or in hoary days of antiquity, say that the lord of the manor or the feudal knight could officially demand of his peasants that the bride's maidenhead be sacrificed to him on pain of his refusing his sanction to the marriage of the subordinate couple, constitutes a historical controversy whose fat bundle of documents we do not want to open up and run through at this time.

It is certain, however, that here too we are only dealing with something breaking through in the case of man which was already clearly delineated in the case of the animal. You saw the leader of the monkeys, who could go over the heads of all married monkey couples and to whom as "chief" all female monkeys belonged collectively, as often as it wanted to have them. Here the social right of the leader of the clan does actually cross individual marriage, but it does so subsequently. I emphasized that a "possibility" of marriage being really shaken to its very foundations as a result of

continued social development was inherent in this fact. If the tendency to such things already existed in the higher animal, man will have gotten it along with all the rest and therefore man also possessed this "possibility" of disturbing or destroying marriage on occasion according to the circumstances of the case. But all the existing "actuality" of human love-life is a brilliant proof that this "possibility" has remained a possibility without the principle underlying it acquiring any particular domination, to say nothing of having had any original predominance.

Genuine marriage triumphed, and the *jus primæ noctis* in all its forms has been felt to this day to be an extremely fatal matter of compulsion. What worked against it is easily explainable. This "right" injected a social compulsion into individual love-selection; in other words it brought something of the one big element of harm inherent in prostitution into the matter. Under this "right," woman was again transformed from a voluntary social co-worker into a "slave to the social element." She was supposed to compensate the leader's social service by sacrificing her right of free erotic choice; she had to serve and please him when he came. Therefore if at any time it was able to establish itself, the *jus primæ noctis* was dammed up and turned back with all the might of morality's logic, instead of becoming a germ of genuine social dissolution of marriage. But how differently that sounds from the dictum of the theory, to the effect that the *jus primæ noctis* is to be regarded as the remnant of an original right of possession which all the men of the clan had to all the women, and which finally became symbolically concentrated in the chief: in letting herself be deflowered by him she was supposed to have symbolically bought herself off from general communal possession for the freedom to enter into a private marriage. What do you suppose the chief of that modern department store knows about symbolically salvaging conditions of prehistoric society? All he does is to try out the old baboon principle anew because the power he has gives him the possibility of doing so, just as it has been tried out a thousand times whenever the power to do so existed. Occasionally, when this power existed and was consistently exercised for a long while, it may really have taken the form of something like a temporary "right" at times. But every time it did so, that current running counter to it eliminated it again and in the end it will keep on eliminating this "right" at all such "positions of power" to-day. As in so many cases, live human possibilities, not symbols and relics,

continue to be involved here. This possibility extends from the baboon in the jungle to the bright lights of the big city. But that it was once absolutely fulfilled along the line of this evolution and then was crowded back again is a pure hypothesis without any basis whatever.

Then the religious sacrifice of virginity has been played as a variant of the despot's *jus primæ noctis*. The pet example comes from old Babylon. Before a girl may marry she must go to the temple of Venus Melytta and give herself to an unknown man. A proof dating from very ancient society was supposed to lie in this fundamental form. By this act in the temple, a woman was supposed to have bought herself off from her original condition in which she had belonged to all men. And that again sounds so very plausible. But this is the sort of explanation which an age that has no suspicion of the terrific force of the religious element in humanity reads into things.

In reality something incomparably more complex than the master's and the baboon's right of the *jus primæ noctis* is involved here.

The act in the temple of the Goddess of Love in Babylon is a sacrifice to a deity. There is not a thing which is not offered to the gods at some time: to-day it is the first fruits of the field that smell sweetly to their nostrils as a burnt offering, to-morrow it is a ram, and then a human being that bleeds on the altar—whose smoking heart is cut out of the breast with a sharp blade of stone as in old Mexico or who is broiled in the hollow belly of a brazen image of Moloch.

The innocence of womanhood—virginity—belongs in this line of intensification.

It is true that an intensified social idea lies very deep down below this: the god is the supreme, absolute ruler to whom everything that the individual has belongs and belongs first. But then this idea wormed its way through the whole labyrinth of human imagination and experienced all the infinite complexities of the religious element.

The gods are not merely symbols of social and economic things magnified to gigantic proportions. They are mad dream figures, hallucinations, spectres that wander bodily through the excited imagination. Just as a ghost in the woods really does throw stones or steal the peasants' milk and drink it up so does a nightmare steal

into the virgin's bed and rob her of her maidenhead. You must first put yourself in the place of such very realistic pictures of the religious imagination. Fantastic dreams, nightmares, fever, madness, imagination incalculably creating from within, the whole border-line where the world wavers between something given to me from the outside and my idea which is itself creating cosmically, this tremendous field of the overpowering element that poured out of man whether he kept his eyes shut or not, even if he lay there like dead and saw nothing of all that was visible otherwise . . . that is the one deep fundamental root of religious meditating, which has absolutely nothing at all to do in first line with the social or economic element or marriage. Everything that comes from here has to be booked in a special account of its own.

If one follows the purely religious line, one will obtain much more distinct pictures for the fundamental phenomenon than that of Babylon wearing the paint of legend on its face. In India it is still the god himself who robs the virgin of her virginity, a god, to be sure, who is a god in the sense that the incalculable element is already incarnated and banned in a tangible idol. The idol is a stage on the way out of the dilemma. The totally incommensurable element of the ghost is caught in a concrete material image; imagination has liberated itself, has given birth and created something. With this idol, life is already more tolerable now. The cult surrounds it and the priest places himself beside it as guardian and spokesman. In this way the incalculable element becomes to a certain extent calculable after all!

And so the idol does the deflowering on demand. In the Hindu service called *lingam,* the bride sits down on the lap of the idol which is equipped with a replica of the male member and that is the way she is deflowered before she gets married.

But at a still higher stage of religion, the more the priest as being a human being of flesh and blood takes the place of the petrified idol, the more he becomes the executive organ of the god's will and the one who exorcises spirits, and the more he becomes a medium between man and the demonic element, the closer he comes to taking on all that the demon himself and then the idol originally performed. Just as the priest in the end comes calmly to eat the roasted meat of the sacrificial offering which was brought into the temple to propitiate deity, so he plucks the flower of maidenhood with which the bride ransoms herself from the demon. In Nicaragua the high priest

used to deflower the bride very conscientiously, and you still find something similar among the brahmins of India.

Again it is only a small step from here to the further practice of a human expedient—helping out by means of demonized man. From time immemorial one of the factors in which the demonic element has automatically given birth to itself out of the human soul has been intoxication. It plays a tremendous rôle as a sacred orgy and a demonic drunk in all phases of low and cruder religious life. The community of the faithful becomes intoxicated: each one is filled with the demon now, for an hour he is dissolved in the deity and God acts through him. The young girl who is deflowered by him in this demonic orgy does not fall to him as a human being and within the limitations of human social rules and regulations and statutes about marriage: she has become God's through him, she has made her sacrifice to the deity after which she can return purged and demonically saved to the chosen man of her heart without having God demand anything more of her there.

Only from this point do you really get to that Babylonian state of affairs where any one who pleases can deflower the bride in the temple provided only that it happens during a sacred orgy and is done by one who is demonically intoxicated. Through the history of all systems of religion runs the tenacious belief, often branded as heresy but just as often rising again, that such moments of sacred ecstasy which overcome the assembled community were permitted to break through all moral barriers and for a consecrated hour establish a kingdom of free love whose action would not be subject to any moral criticism afterwards. Proof of this is afforded by the erotic orgies of countless sects among savage as well as tame peoples. Soberly and physically speaking there are two different kinds of things in this: the dull recognition of the demonic element in the state of intoxication, the sudden awakening of the incalculable forces of the imagination under the influence of narcotics; and the experience of the sudden, equally incalculable awakening of stormy erotic desires by means of the same narcotic stimulant. When the religious ecstasy is over, none of the participants can conceive how they could possibly do anything like that. Therefore it must have been the demon. The demon makes everything sacred, and therefore erotic excess as well, which otherwise would have the bitterest social penalties inflicted on it. From this point it is easy to understand that not merely was the sacrifice of virginity to the deity

transferred to this orgy but also that orgies recurring periodically could create little interpolated realms of free ecstatic love with everybody belonging to everybody else without distinction, and this within married life which otherwise was so very firm and secure. Recall the ancient festivals of Aphrodite, the saturnalia and the whole comet's tail of carnivalistic "times of license" trailing behind this whole cult until the present day.

It is quite enough to unroll this religious line which in itself is so infinitely complicated this far; more would carry us beyond the framework of our conversation. But I think that you do see the same thing in this line: nothing about all these things points to an original realm of social free love with the complete elimination of marriage having once existed. This love compromise with the gods makes marriage appear as the original thing, which let itself in for compromises and nothing more. Wherever the existence of virginity was a moral prerequisite for marriage all these religious matters obviously did not have the power even to compel these concessions.

What happens to these props of the theory happens to all of them.

Matriarchy was supposed to point directly to a time when one could only specify who the child's mother was while the father remained uncertain because the mother had had free intercourse with any number of men in the clan. But just as the religious angle is overlooked there, so here the medical and embryological side. You yourself followed along and saw how easily and completely matriarchy, mothers' rights, fits into a train of thought, which neither needs nor finds an original state of free sexual intercourse without marriage.

Complicated relationships among the Hindus, Australians and Polynesians, strange designations there which strike us as being incomprehensible were trotted out and had to serve as fossils and remnants of a primitive kinship resulting from the communal possession by all the men of all the women of their own or a second clan. But it is all in vain to try and invade their labyrinth with any kind of a fixed theory. A dozen hypotheses of the most diverse sorts can all be based on these facts, all of them full of sophistical subtleties and all without any guarantee that not free love, but the vivid imagination and the legal hair-splitting of the savages will not snap their fingers at the subsequent logic of these theories.

Our scientists who are influenced by the modern spirit of the age, who have underestimated the religious element with its tremendous

force as a root throughout, have just as deliberately neglected the imagination of peoples as it endlessly keeps on hatching out things and manifesting itself in the maddest arabesques of manners and customs; the theories of this age have suffered accordingly. They too frequently have something about them of the mathematician who has determined that a straight line is the shortest distance between two points and who now considers it to be absolutely a matter of course that every wanderer who comes from the one point and arrives at the other one has gone along this straight line. Humanity had plenty of time and took it. Humanity fell in love and loved the time away, it dreamed and gambled the time away, it was drunk, it was and did a thousand things and all the ups and downs of these feelings lay on its road. This way of the imagination was like the knight's move in chess; it was no mathematical line!

§ 9

But if original love without marriage falls down completely, the auxiliary theory which seeks to distil the beginning of all human marriage out of the practice of stealing women becomes pretty much a matter of indifference.

I gladly admit that stealing women and buying wives has ever kept on strengthening the institution of marriage which was always gently attacked by the social element and certainly so in primeval days. It made woman "rarer," "more precious," because of the fact of the woman having to be acquired from a strange clan by the man's own work instead of her being comfortably and conveniently offered to him within his own clan.

But it seems utterly impossible to me to derive the man's one-sided "property right" to woman in the bad sense of the word, the right to hold women as slaves, from this condition of robbery or purchase. In no wise did this need to result. Brunhild is not Siegfried's slave because he has captured her. She is a slave only if some special additional situation is injected into marriage.

Human relations have frequently and quite obviously led to such a situation and then to be sure woman became thought-provokingly enslaved within marriage compared to the man.

This line persists to the present day. But the fact that women in the stadium when women were obtained by robbery gained in value can never belong in this line. The more precious a possession is, the less it is trampled upon and in the higher esteem it is held. You can see that in the case of an owner of thoroughbred racehorses and the way he treats his animals. One could almost get into a controversy as to which one was the slave—the horse or the owner.

But it is a fatal false conclusion generally to try and derive slavery from marriage.

Just as surely as slavery to a certain degree runs through the history of our civilization as a phenomenon, just as unthinkable is primitive human marriage as its origin.

All the facts are rather in favour of this actual displacement which took place at a certain latitude of civilization's evolution and sub-

sequently among us as well having been the distinct work of the social principle.

And proceeding from here, with the growing power of the social element over marriage which had existed long before, this in the end became a factor in marriage as well.

You have a tremendous social preponderance of the man over the woman in the midst of the highest civilization down to our enlightened present day. Socially, the man plays the leader throughout (and independent of all marriage now). The large-scale life of the state, politics, legislation, higher officialdom, decisive economic activity, the army and war lie almost without exception in men's hands.

The man is the real "state animal," keeping the centres of society occupied, and sitting in the president's chair everywhere, ideally and materially. This extends endlessly beyond the old leading papa of the herd of baboons, in whom a bit of socialized super-family right is inherent even so, while here we come upon roots that are entirely social for the sake of the social element.

Social division of labour lies at the bottom of beginning civilization. Extremely harmless at first.

Human co-operative associations (men and women in optional marriages) had entered the stadium of the implement. For the individual human being the implement creates that important new possibility of division of labour consisting of being able to use it at times and then put it aside again. In the case of two human beings this proves to be even more effective; one can work with the implement while the other takes a rest or both can work simultaneously with *different implements*. Originally equal in physical strength and skill, men and women may still have alternated in that manner. But in a more complex social association, this gradually was bound to lead to a more general regulation of things.

Defensive weapons and implements for obtaining food and many other things had to be subject to an ordered division in society in the long run. Social animals when attacked already arrange themselves with the most competent performers on the outside and the weaker ones in the middle, inside the ring. In the social arrangement within a human co-operative association in the implement stage, the young who for the time being are not able to wield weapons so well as yet will no doubt be kept more fenced in, at first actually

and later more ideally, when defence becomes necessary. Then one will come to distinguish between the outermost, front rank and reserve members. The question comes up who is to enter this reserve. All of them, the men as well as the women, are essentially equal in strength yet. But even when that is the case, there is a purpose to a reserve, to a more protected section on the inside. And there could have been numerous different reasons for entrusting the women to the inside of the social square. The closer relations of the woman to the child might lead to that. Likewise no doubt the idea of particular preciousness, just as later this idea resulted in placing the duke and the king behind the exposed front in order that the others might sacrifice themselves first.

If the worst came to the worst, the woman now as before had enough fire in her to reach for arms and use them; the lioness still stood beside the lion. But there is something so eminently practical about division of labour sweeping things away with it that wherever it is once staged with any kind of division even though it may be almost purely accidental in the beginning it soon seizes the whole hand and draws the lines close.

Over the heads of all marriages, the masculine party in the social association became more and more accustomed to arms as their privilege and thereby the door was opened late in the day after all to approximately the same development as in the case of male animals with antlers or canine teeth; in the case of animals, this development came about directly for marriage while in the case of the human being it came from the social element and was to reach marriage only indirectly from the social element.

I told you before how man entered anew upon a period of extremely hard combat and struggle for existence after his sanctuary period. You find man in such a period as the curtain of civilization's history in the narrower sense of the word goes up for us, let us say in the diluvial age. The artificial weapon was man's decisive helping goddess. In those days without agriculture, on the steppe or the tundra which were barren of the fruits of the field, the weapon enabled man to feed himself by hunting animals; it made this possible for the very races of the cooled off northern hemisphere from whom the supreme salvation of civilization was to come. But in this hard school, man who used the weapon was himself bred away from the old child of paradise to be somewhat more of a beast of prey. Because it was essentially the male who carried arms now,

the whole force of this breeding process affected the man and not the woman. The male's humanity became one-sidedly more savage and more like a beast of prey.

This no longer became particularly marked in the matter of physical structure since the road from now on ran via the weapon, the implement. The human male merely became more supple physically just as his practical mental power was tightened up and steeled. But on the other hand, a certain degree of brutalization did result. If the human animal's specific original gifts, of which no doubt whatever exists for me, did not consist in fostering and breeding the nature of a beast of prey but lay in mutual help, work of the imagination, deeper thinking about causes, in short on the side of peace traits, a slight aberration did take place here. Temporarily a necessary one. For without being able to stand the test of that struggle man would not have survived at all. Yet in certain of its results it was an aberration whose little cloven hoof was bound to show itself.

Certain questions of social power next came to be connected with combat, quite as a matter of course. Fighting, war is the father of all things in the way of social rank and order. It creates leaders, dukes, kings, just as it produces those who obey orders. It drills men to obey commands and bow their heads. Then this extends to the organization at home in time of peace. The male who had become the warrior was bound to become the politician and the leader of the state. But the weapon also brought the victor brutal external triumphs of force, subjection, slavery, an absolute power of disposal over living human material as a result of overstraining the purely offensive and defensive purpose, so to speak, while political power among his own people ocasionally took on traits of tyranny.

Simultaneously, woman remained more free from all this dyeing process. To a certain degree she kept the steering wheel of original peaceable humanity more faithfully in her hands.

Recall the wonderful farewell scene between Hector and Andromache in the Iliad. Nowhere else does one so distinctly get the feeling as to where the genuine primeval longing and enduring strength of the human being lies after all: in time of peace, where Andromache holds sway; war is merely an evil forced upon man, brutality whose colour has come off on man; Hector feels this like a dull resigned memory: what has gripped us here, what tears us away,

compels us to storm ahead brutally and ravages us, who could do something totally different!

In such passages, Homer has universal significance of feelings for me as the mirror of a tremendously long epoch. I do not believe that much change has taken place in mankind's feelings from the Magdalenians to Homer.

And yet in the very same scene you see the reverse side for the woman of that time. As the poet has delineated her, Andromache does not look like a degenerated type. You think you see her standing before you with her head raised, proud and vigorous, a splendid human individual in woman's form. You could still believe her capable of defending her child with a weapon in her hand and with the strength of a lioness. But something has already become veiled about her strength of soul. Spiritually she is already the victim of an extreme tradition about division of labour. The man must defend her. She is helpless if he falls. Then she must suffer herself to be dragged away as a slave, that is already as clear as destiny to her. If the man has become too much of a beast of prey, woman conversely has lost a piece of genuine individuality as a whole human being in the opposite direction. One-sided displacements in the end affect both parties; that is ever so.

It is clear, however, that such a deficit in courage, such subserviency of soul to a fatalistic weakness in woman on the one hand and the brutality of the warrior, the intensified feeling of power, the savage devil of the conqueror and possessor and the traits of tyranny on the other hand, both acquired socially, gradually were bound to play a powerful rôle in marriage. The man, socially bred to be a master, could not be untrue to his instincts in marriage. The idea of the king was carried from the political association into the family. But in ancient history kingship and tyranny continue to pass into one another with only a very feeble border-line.

Here too it is enough merely to open up the perspective this far.

At a certain stage, in civilized marriage, social division of labour and its spiritual reflection frequently produced a seeming repetition or better yet made up for lost time and seemingly retrieved something that was already once before a striking general phenomenon among animals, where the males were more powerfully armed with organs and the females were physically weaker.

However, you must not carry out this comparison to the very limit either. The matter (because essentially social and spiritual)

remained much too fluctuating in civilization at this stage and much too energetic automatic regulations were constantly at work for that.

Where the evolution of the male injected real brutality and the evolution of the female real slavery into the game, grave harm to the species could not fail to result. Tyranny and slavery was never a form of division of labour capable of enduring socially. This untenable monstrosity has invariably failed and disappeared after a relatively short time in the course of evolution because it necessarily resulted in the degeneration of the individual on both sides. Divide the human world into "blond beasts" who are only blond beasts, and trembling herds of sheep that only tremble, and after a while you will have idiots on both sides. At such extremes the social association as well as marriage, the state as well as the family will perish because man and the species go to ruin. Where humanity has permanently ascended in civilization, incessant counter-regulation has prevented extremes and has slowly reshaped the whole generally.

To-day you have extremes of male marital tyranny and slavery of married women preserved only among real savages, among whom you otherwise too find evidences of their having strayed from the path of progress, evidences of stagnation, petrification and degeneration in every trait. For the rest, the very institution of marriage itself has ever exerted a powerful counter-pressure here (to go on record with the very opposite of the alleged idea that slavery resulted from marriage). If the social element sought to crowd woman more and more into the background and if in the end this coloured marriage, yet incessant work against this took place in marriage, springing from its fundamental principle, and in the end this was bound to make itself felt in the social element. The primeval point at which the female stood beside the male maintained itself now as before in the innermost structure of marriage as a matter of love. If the social element endeavoured to strengthen the tyranny of the male, a certain cult of the woman, the rare precious woman of love-selection, the noble housewife and mother, invariably rose out of marriage again. Woman as the beloved one and as the mother both worked in principle against being enslaved. The idea of a purer, more valuable, more inward humanity expressed in woman never ceased to be a force among genuine civilized peoples and it ever found its home and its castle in marriage.

What urges Ulysses back to Penelope for twenty-four cantos of the epic and what makes Penelope stick to Ulysses is assuredly not the longing of a tyrant for his female slave nor the subserviency of this slave. Or do you hear that meaning in the words:

Pleasing as land seemed to the swimming men
Whose sturdy bark earth-girdling Poseidon crushed
At sea with angry storm and swollen floods—
But few escaped the dark abyss, and now
Covered with ocean's ooze they climb the shore—
So pleasing was to her her husband's sight;
And with white arms she closely clasped his neck.

Then in the higher civilization of decisive peoples you historically look upon a continued series of regulatory attempts to eliminate this mistake entirely from the fundamental root of the social element.

One station which in especial made the counter-work of marriage easier in this connection was the gradual recession of polygamy.

Another was the rise of love of mankind, the rise of Christianity—to use the most practicable word for this station. Where it showed ascetic traits it did not help the rehabilitation of woman or marriage itself, but did harm: these traits, however, did not and do not belong permanently to its actual world historical mission. Where this true mission broke through and triumphed or at least provisionally created ideals, softening brutal manners and customs, sowing respect for the human being in every form, damming up war of might and conquest, opposing the picture of human personality that is unbending and still triumphs on the cross against the tyrant, there too it set itself up socially to be the propagandist of innermost finer human nature. In doing so it was bound to help file off the male's one-sided beast of prey characteristics and at the same time lead woman upward spiritually again, making her more courageous and putting her in the possession of her whole personality again. It was something different after all whether man and woman were separated on a footing of war's utmost necessity or whether one preached that the human being as a higher unit was inherent in the man as well as the woman.

Lastly our modern stage of regulation lives in the good and justified part of woman's social war of liberation to-day, whose harbingers really extend back over a long period of time. Where this fight

is waged along correct lines it is rightly realized that a social rehabilitation of woman generally must be involved in first line; only secondarily will it then become significant for marriage as well.

You must not overlook the fact that the situation to-day has shifted fundamentally in one respect. The general stadium of evolution in his young civilization which urged man so powerfully to revert to the beast of prey has long been passed. The principal brutal battles have been fought out. The brutal noise of arms extends into our civilization solely as a rudiment. Our real modern battles and conquests are being waged in the brain. They run on the tracks of pure intelligence in science and peace technology. The physician who conquers a disease forever, the engineer who subdues a barrier to world intercourse with a tunnel or a canal; the botanist who breeds a better variety of grain according to the laws of artificial selection and mutation: the physicist who guards our navigation with weather reports or keeps the solitary ship on the ocean in contact with all the auxiliary forces of humanity by means of wireless telegraphy, these are the true soldiers and the real warriors of to-day. Even where some parties in our civilization still consider actual war to be necessary it has at bottom become merely an appendage of technology; war is no longer decided by the muscular strength of the individual but by the genius of the technician who keeps on inventing better weapons of murder which are so easy to handle that in the highest ideal form the pressure of a child's hand on a button could blow up a fortress; it is decided by the genius of the calculator at home, in the still chamber of the scholar, the genius which knows how to play the available means of nations against one another like the figures in a game of chess. Let us not deceive ourselves: woman who wants to live out a fuller life with all her personality to-day is encountering this stadium of masculine fighting. What is involved and what must be involved for her is to get a share in the work of the intelligence on which our entire political and social life rests to-day.

Men had quietly negotiated this turn in the constellation of things without surrendering their exclusive possession—their leadership. The male who once had been essentially a warrior now was a doctor, a jurist, a political economist, a botanist, a physicist, an engineer as if that were a mere matter of course. It is now our task to take woman in more resolutely everywhere. On the one hand our civilization and social order affords greatly increased security,

which no longer makes it necessary to form such close squares with fixed bayonets directed toward the outside, with sheer inactivity in the middle. Ours is a totally different possibility of all working among one another, a totally different possibility of the blood pouring through the organism of society. On the other hand we need humanity's entire treasure of strength for our gigantic work of the intelligence which continually keeps on growing. We need all the strength and all the talent of all individualities in the nation, the race and civilized humanity. That being the case, we can no longer renounce half of mankind by leaving woman permanently out of the question for this gigantic task. Our civilization can no longer calculate with such a waste of power, and so we see it making a determined round about face. The feminist question as a fundamental question of civilization is equally well a men's question.

We discussed the fact at length that there is nothing in the physical structure of woman inconsistent with her participation in the work of the intelligence. It is a particular stroke of luck for us human beings in our present phase that the love-selection of remote antiquity bred the sexes with such strikingly little difference.

One more objection has been raised at this point. The efficiency of female intelligence which potentially exists in the brain is supposed to be reduced to a far slighter, inferior level in practical work, physiologically, by the special nature of woman's sexual duties. From menstruation to the act of birth and nursing the child, she is supposed to be under the constant domination of such a gigantic loss of strength which can never be made up again, it is argued, that woman's sum-total of strength remains far below that of the male and must remain so purely because woman happens to be a woman and not a man in her sexual performance. Something is emphasized here which to a certain degree is correct, namely that intelligence is merely a performance on the part of the organism's energy after all, rising and falling with the sum-total of the entire physiological budget. There may be extremely important exceptions to this proposition in individual cases. A sickly organism like Darwin's was able to give out an enormous amount of intelligence for many decades. The theorists of feminine weakmindedness grant that there are exceptions, but they argue that the average is the decisive factor. But even so I cannot let the argument hold good in any wise.

In the first place, it is impossible to support this argument with

any law having general validity among animate beings to the effect that the female is weaker as a result of the loss of energy incident to her sexual mission and forms a "weaker sex."

I consider it far more than a dazzling paradox when I said that the original relation is exactly the reverse. In the animal kingdom the mother is originally the physiologically more efficient part throughout. In countless cases, she bears the entire burden of the struggle for existence exactly as does the male and in addition she has all of her duties of motherhood. If I must formulate a general proposition on this point it could only read: in order to achieve the duties of motherhood nature equipped the female with at least fifty per cent more strength and energy. On all sides, particularly in the case of the higher animal, healthy maternity is a matter which steels energy and develops strength; its principal stations take place at a splendidly rapid tempo and the original natural power breaks through directly, prepared when necessary to draw on the reserve stock for the old plus quantity of vitality, and show all a father's strength in addition to all the maternal strength. Without the assurance of this increased strength, of fifty per cent more power, evolution would never have dared to go so far as to impose long pregnancy and the suckling duties of the mammal exclusively on the female. Any hen defending her chicks can demonstrate to you that the hardship of maternity does not depress the spiritual forces of the animal. Our domesticated hens no doubt degenerated spiritually to some extent in harem fashion, owing to the consequences of extreme polygamy which induces laziness; but how magnificently do courage and other soul forces flame up, in such a maternal moment after all. How tremendous is the brain material, even though it belongs only to inherited instinctive life, which this very period releases in the females of all higher animals. Imagine instinct to be replaced more and more by free intelligence as finally is the case with the human being: why should the female's old plus of strength and energy not hold good there just as well?

It is certain that this human being made its appearance on the scene with an extraordinary efficiency in performing the female sexual functions. We spoke about how easy childbirth is for the savage woman and even occasionally for the working woman who has maintained her robust vigour in our civilization, how it almost sinks to a mere bagatelle and passes off between other work as something almost equivalent. In her frequent condition of marital

slavery, the savage's wife is customarily overloaded with just as much ordinary work or even more than the man does since he often misuses his pashaship in marriage to do nothing but loaf: and she performs this work and menstruates and carries her child for nine months and then gives birth to it and suckles it to boot and all this as though the natural situation silently produced that extra fifty per cent of strength for the female at the proper time. What could not a naked savage woman produce from this treasure in the way of intelligence if her plus quantity of energy were directed toward it instead of going into crude utilitarian work for the exigencies of the day; with such a state of affairs what could she not produce and this without cutting into her reserve for maternity or being attacked by it in the course of that other psycho-physiological performance.

It cannot be denied that this power of resistance in matters of maternity does show a diminution in higher and highest civilization, and that at the present time this strikingly dominates the picture of our supreme civilization, particularly in educated circles where not merely is woman's practical political and social participation championed but in first line her definite share in the highest departments of mental work. Here woman's physiological efficiency appears to become abnormally weakened and one-sidedly absorbed by maternity as a result of some special influence of civilization.

The interesting and important fact that forces itself upon you here is that this sexual weakening effect coincides exactly and is grown fast with civilized woman, socially and maritally, generally dropping out of the occupations which steel and strengthen the body, and dropping out of cultivating muscular strength and physical working energy. We called the last complex becoming enslaved, with growing lack of courage in a different sense and the consciousness of soul strength falling asleep. One can also call it effeminacy. Every form of effeminacy, of growing soft and weakening spiritually as well as physically, leads to a lowering of the power of resistance; it so to say breeds the burden and the strain of all duties in the course of negative, misled natural selection instead of strengthening resistance in the healthy organism and favouring the production of a plus quantity of vital forces. Her increased weakness in the face of the demands which maternity makes on her appears in significant fashion in civilized woman.

Let us look at the parallelism in the result as sharply as possible. The two salient points stand out brilliantly.

On the one hand, woman keeps on being more and more relieved of all actual physical work. A stage of civilization makes its appearance which considers it absolutely crazy for a woman to serve in the army, for instance. But on the other hand, the functions of maternity keep on becoming harder and harder for this same woman, each menstruation makes her a sick person, every childbirth is a life and death matter which has to be followed by a long period of convalescence, and in many cases she is too weak to nurse her baby herself, so that her strength is no longer adequate to fulfil even this round of duties.

I cannot help believing that the first point explains the second one. A certain phenomenon of degeneration, which has absolutely nothing to do with woman's original amount of strength and energy, lies in the whole matter.

We have increasingly kept woman away from the physical work that really steels the body and keeps it healthy, with its inseparable spiritual fresh air. I shall merely remind you of the old alarmist dictum: a stove and a woman belong in the house. Our girls have been kept long enough that way, behind the stove, pampered and coddled up to their ears, like a bird in a cage whose powers, with truly refined cruelty, were not allowed to develop. Then came the time of maternity's duties, and her power, long suppressed and undeveloped, failed even there.

But when civilized woman writhes and twists as if some strange devilish power were going to cost her her life, in discharging the simple function of maternity, instead of she herself being in the flower of her strength at this time, along comes the know-it-all and talks about "weak" woman, who requires to be spared and must have ever more indulgent treatment, who belongs "behind the stove," so that she may not catch cold from the healthy fresh air of life. This makes me think of the many species of animals in the zoological garden which have no more young or only miscarriages from the day that they sit in a cage, despite their extremely comfortable idle life of luxury.

And then this civilized weakness to which woman has been artifically "educated," representing the result of a "negative sport" as it were, of training to produce weakness as a matter of principle in our civilization, is construed into a given, natural physiological

weakness of the sex, and from this in turn, very prettily and logically, a physiological weakness of mind is deduced for the sphere of the brain as well, and then woman's incapacity to take part in humanity's work of the higher intelligence is proclaimed for all eternity. Woman is sold into the perpetual slavery of her own maternity, and then the wise one who knows it all has to admit into the bargain that she is to a high degree incapable of this as well, as figures show, since in countless cases in our civilization these females who are reserved exclusively for motherhood are no longer able to nurse their babies, and they even react to every menstruation with a loss of strength almost as if in a case of childbirth.

The horse of thought cannot be more neatly hitched to the cart of logic the wrong way round and bridled at the tail, though it happen with never so much intellect and wit and even an honest intention to find out what is what.

We shall draw conclusions from all this, but they will be fundamentally different. The spectre of permanent physiological weakness of mind does not lurk in present-day civilized woman's weakness for maternity but there does shine forth from it a particularly flaming mene tekel for us, that we have treated woman socially long enough as we have and that it is now the highest time to put an end to it for very urgent reasons; not merely because of women's taking a share in the work of higher intelligence but because of motherhood itself. Woman is not weak because of menstruation, pregnancy, giving birth to children and nursing them: she is weak in our civilization because her total physical strength and power has long been allowed to rot away and has not been fortified and steeled; and because she is weak as a result of this, those simple tasks peculiar to woman, which originally were calculated for her having a plus of strength, a physical reserve fund, now draw upon her entire capital, in fact they cannot be properly discharged any more even with this.

Only when we succeed in bringing up generations of girls whose level of total physical strength again approximates a good average human height by means of gymnastics and athletics and all manner of healthy physical exercises, only when we have again let light and fresh air with all their sunny force and elemental force shine and blow behind the "stove," where the female was supposed to have to "stay at home" like a pale sprout in the cellar and where she really has stayed long enough: above all, only when we have awakened

woman's courage of soul and confidence in her own strength out of a sleep of many thousands of years in this way: only then shall we restore these specifically female sexual functions and performances to an efficient "healthy" level.

To those faithful Eckarts who believe that woman's "womanhood" as destined by Nature might suffer as a result of developing the strength of the body by steeling the muscles in allegedly "masculine" fashion and by psycho-physical exercises and workouts of the entire physical power apparatus, I call out that only this steeling process will make woman a genuine mother, a genuine "wife," a genuine woman again.

And so, in the final analysis, this famous "physiological weakness of mind," alleged to be connected with motherhood, amounts to a working programme and a task for us—not destiny, but a duty.

On the other hand there is just as little doubt that when an epoch of improved physical culture for woman sets in again it will also have direct consequences for the question of woman's mentality.

What does remain true is that we do not want belatedly to breed more of the beast of prey in woman; the limit remains where it is. We want to have the actual surplus of feminine strength, which becomes available in woman after a normal, healthy regulation of motherhood matters, for the work performed by the intelligence. A large part of the crude physical element is already being relegated to the background in the face of it, and the physical will give way still more before the mental. The time can be foreseen when students will no longer carve bloody notches of honour on one another's cheeks; and when civilized nations will no longer practise a reverse "selection of the fit" with powder and lead, by sacrificing their healthiest forces in barbarously anachronistic wars. Within the same length of time, a vast mass of physical work in our economic life which is bad and causes physical depreciation but does not steel and strengthen the body will disappear again. But a healthy body, made healthy by exercise and strengthened and steeled, will become ever more important on that account as the basis of intellectual efficiency. Civilized man will increasingly value his whole body as a power machine for the work of his brain, and therefore the highest stage of intellectual, spiritualized civilization will also be the highest stage of ingenious care bestowed on the constant process of steeling the body and keeping it healthy.

And for woman's fight for her "rights" this in turn yields the

great conclusion that every step toward physical betterment likewise clears the way for her growing participation in the constantly increasing intellectualization of civilization.

The woman who again shows herself adequate to her duties of motherhood in a normal, healthy, harmonious sense as a result of the restoration of her whole original human physical strength, will experience a new springtime of her intellect beyond these duties, which must forever silence all the wisdom of the old-timers about woman's place behind the stove. That is my firm belief about woman.

Woman will become nothing greater but also nothing less than a whole 100 per cent human being in her full strength—strong enough to read in the stars to-day and tomorrow to give birth to a child, without the one thing disturbing the other.

The animal, the poor fighting lower animal brought its young into the world and brought them up and besides this and despite this it was pregnant with and nourished and finally gave birth to something that was very much greater—namely man.

The human female will be able to do both when she is mindful of her whole strength: she will be able to give birth to man as a child, as the eternal natural babe of Eve by virtue of the strength of her womb and at the same time reproduce man as the intellectual, spiritual human being, as the eternal Infant Jesus, the child of God's spirit by virtue of the strength of her brain.

§ 10

Let us go back to the origin of marriage itself.

All things historical could quietly drop out. The kingdom of love as humanity's ideal does not by any means stand and fall with Mosaic cosmogony, in which paradise shed its fragrance at the beginning of days. And just as little is the social dream with its dissolution of marriage inwardly touched by the truth or falsity of any theory about the social and marital beginnings of primitive man.

There is only an ever renewed but at bottom naïve striving in this eternal search for a complete revival of the supreme future, in the depths of the past, as if the symbol of world evolution were merely the old symbol of the serpent biting its tail, and nothing more.

It is the same line of thought that construes the existence of senseless matter at the beginning of all things and then cannot rest until it has resolved all the glory of Milky Ways and human brains into this chaos again. Nowhere do the real examples of evolution which we see in nature, with their mysterious phenomena of procreation, transformation and transcendence, sound as simple as that. The tree, which has put forth leaves for a century, does not by any means plunge back into indifferent matter without leaving a trace, but its effects produced as a tree during that century continue in individualized form through the sequent course of the universe for all the æons.

It must become clear to all of us that the sole profitable direction for projecting our ideals is the distance before us, and that no ideal becomes any better by its already having been once achieved behind us. Our road runs forward, not backward. And no ideal is any longer created to-day by a yellowed parchment bearing the seal of some long lost millennium being placed before us. This very thing makes us new human beings: we have torn ourselves away in all fields of life from the petrified powers of the past and shaken off so much moth-eaten dust, often with bleeding hearts but always under the spell of steadfast longing. We have paid the price of the past for the sake of the future. I believe it must become an increasing

matter of indifference to us in actual practice whether the future is only a disguised past after all and whether the New Testament of our ideals is only an Old Testament which we have recaptured.

Even though mankind did not begin its course with a complete dissolution of marriage in the social element, yet the symptoms of such dissolution, which keep on mounting up to us, remain and the great question continues specifically as a question of the future whether the ideal ultimate solution of things after all would not be the absolute disintegration of marriage through mankind's social organization in the consistent course of humanity's evolution.

All the threads which we have spun along to this point are woven together here in the profoundest, hardest and actually most burning question for us: the question as to the permanent value of human marriage.

Once upon a time permanent marriage developed out of temporary marriage. The animal became man. But man in himself wanders upward. Man of to-day is no longer the human being of a thousand, of two thousand years ago. The luminous field of his vision is infinitely enlarged. What will he behold in it concerning marriage as a permanent value?

We must harbour no illusions in the one direction.

We saw marriage arise historically for all manner of practical protective reasons. Marriage itself appeared to be only a small social attempt. A protective association was constructed with marriage, like a little house of boards over the spring of love in the great wild primeval jungle of earth. We still have this old practical motivation in our practical everyday picture of marriage on all sides to-day. We still see in the family a narrower protective association within the great association of the state, in which (traditionally at least) the father is the principal bread-winner for the whole, but with the parents helping one another, and above all with the children growing up under the protection of parental marriage and so forth. Marriage for us to-day continues to be an economic crystallization point in first line, a centre of gravity of narrower economic self-help in a small circle, without which humanity could not survive.

But let us not deceive ourselves about the fact that these crude economic matters of protection must some day become increasingly dissolved in a higher social order.

The wild jungle with its thorny thicket, its serpents and tigers will more and more become a bright wood of civilization suffused

with sunlight, without predatory creatures and with parklike trails that grow ever easier to tread. You may picture this to yourselves as a long way off or close at hand, but you are bound to think that it is coming if you believe in the progress of civilization at all, if you see a world mission in it and not merely senseless legerdemain. But values of the future are the very thing we are talking about here.

In this civilized wood, the spring of love will no longer need any little protective cover made of a dozen pine boards of utility in that cruder sense; it will be allowed to bubble forth freely wherever it has the power in itself to well forth.

If marriage signifies nothing more for love than the little house of boards over a spring, marriage will become negligible and disappear one day: it must do so. The sun in the park wants to mirror itself freely in the well-spring, and may do so from now on.

Mankind's social organism, growing up from simple beginnings into a new and higher body of humanity, will in the end transfer all the protection of the individual to the community of this harmoniously organized society. And society will afford the possibility of bringing up children and eating soup without marriage.

If marriage is supposed to be anchored here alone, it will at some time quietly but definitely pass on in the face of this social help which the community will give to all, for marriage will simply be giving way to a higher, more perfect adaptation of mankind, it will disappear again as the fish's gills or the monkey's tail vanished from our human body.

Historical reasons will not help it, for age alone does not make a thing holy, otherwise murder and robbery and spiritual rape would be considered sacred. All historical values without a purpose in the present are galvanized corpses whose mouldering breath will in the end inform every one as to what they really are, no matter how much incense wafts around them now.

We must not delude ourselves about all this. There will be no halfway business about the social victories of the future (not in any narrow party sense, but in the sense of general, happier and more successful solutions of the entire human economic problem and the problem of mutual help): either they will embrace the economic fronts, the outer protective lines of humanity entirely or not at all.

All the roots of marriage will lie in that word "entirely": marriage will become woven in the great common stock to the point of in-

visibility and in the end it will be sucked up by the social element and be merely a memory and no longer an idea that continues to procreate in the soul of humanity.

But the other great question is whether marriage has not driven a second and much deeper root after all into the deepest soil of humanity at a place where all social evolution according to the unchangeable decree of world evolution can never touch it.

The question arises whether marriage, in addition to its evanescent rôle as a little guard-house over the spring of love, does not possess an indissoluble connection with the spring itself; whether it is not also the pipe through which this spring bubbles up in the green wood from out of the mysterious primeval depths of the earth, the conduit which the mighty social gardener of civilization in this wood will never plug up but on the contrary will keep holy and unharmed with all his industry and zeal.

According to my view of the matter, the only thing that can preserve marriage is its real, profound and permanent relation to the individual element.

That sounds trivial at first. It is true that if everything is to be swallowed up by the social element as by a great flood but if an ark is to be saved after all, this can only remain floating on top by virtue of the other extreme—individualism. This must be expressed more specifically.

As we survey it, there are two great, fixed characteristics about the machinery of animate things.

The one is surveyable, calculable, can be seen through, is apprehendable and can be mastered by our understanding.

The other is dark, incalculable, it has something of the sway of imponderabilia about it; I do not mean a mystic incomprehensibility, but a barrier of our objective penetration for the present.

The realm of the first is the social element and of the second the individual element.

Mysterious springs keep on pouring out from the individual element. We do not see their bottom. But once they come to light, these springs immediately form a tremendous network of streams—the social element. Vast as this is, it yet lies entirely above, on the surface, and if we only attain the necessary height for the point of observation we can hope to solve it throughout with our intelligence. First we see it in the form of waves hurrying toward one another in hostile fashion. Wild struggles rage. But a finer, harmonious

network with regulated circulatory courses is finally fashioned out of these struggles. The social struggle passes into the social order, an ever higher order, until the harmony embraces each least little artery and the network forms a wonderful rhythmic figure.

But meanwhile the activity of the springs welling up from below remains as a prerequisite. If they were to fail, the whole mighty stream would dry up and the beautiful figure would fade away. Life in the network—the incessant current—would break down; at first the whole would become a stagnant dead quagmire, whose evil smell would rise up corpse-like to heaven. The perpetual progressive new regulation of the network's harmony from below, from within, from the essential element would fail, for no new incalculable material would any longer flow out of the springs, with which new calculations could make their appearance.

These two great factors were at work in all evolution of which we have spoken hitherto. You always have a more or less transparent part, the social part; and a secret book, the individual element. Think of the evolution of animal and plant species. On the one hand the great, clear laws of selection in the struggle for existence, of adaptation, of the formation of permanently harmonious species; and on the other hand, the ever new individual variations, the eternal process of individual beings individually born somewhat different, departing somewhat from what was already given, as the fundamental material with which that great, clear working process can then operate.

I absolutely do not want to consider that any miracles take place here. The individual element can be no miracle in the genuine concatenation of the universe. It simply happens to be one story lower down. And the visible world is the product of both stories.

Man grew out of the evolution of species in the animal kingdom. Both wheels continue to govern in man—the great wheel of the stream above and the little wheel of the spring in the depth. Man extends his world to the social element: the social element stretches over the earth as human civilization and in it there remains the great intellectual clarity of laws and occurrences that govern openly. But at the same time the imponderabilia of the individual element which are as enigmatical as they are important continually mix into the social organism with its measurable weights.

Not only is man ever born anew as a single cell of humanity generally, but into every one of these births there enters the mystery

of individual peculiarity. It rules in the body, it rules in the mind. It constructs the tiniest little fold in your hand and the smallest line of your nose. But it also moulds every stirring of your spirit. It is true that you float immediately into the great social network of streams the moment you mentally awaken. This affords you endless protective support; it gives you "humanity" as help and as background. But you likewise give this network something inestimably precious—the source value of your new personality. The sudden turn to a new world, the revolution to a totally new stage of harmony in the network may lie in this source value. The geniuses, the physical ones as well as the intellectual ones, rise out of such values in the well-springs of the individual; the inestimable plus variations, which progressive adaptational selection in mankind needs exactly as well as it absolutely needed the spontaneously appearing and more purposeful variations in the animal and the plant.

The suppression of these individual values by the social element is not thinkable without annihilating the whole play of forces.

Therefore, if marriage contains some point where it is permanently anchored in man by these inestimable imponderabilia of the individual element, it can never be seriously menaced and swallowed up by the social element.

It contains such a point in my judgment.

For all future time that we can foresee, marriage as an ideal contains two ideal factors even, both of them inherent in the individual element.

Both are inherent in individual love-selection.

It is true that you can describe marriage this way: any two beings you choose find each other and together procreate a child; so that the matter may proceed smoothly in a wicked world of dangers, the parents form a protective co-operative association which extends beyond procreation, they mutually protect each other and above all they protect their child; after this has gone on for a while, the social element has become strengthened generally in the generations that have been gradually procreated, grandchildren and great-grandchildren have formed big co-operative associations, which from now on support and protect all who procreate and all who are procreated as members of society, so that the little protective associations of the family are no longer needed; and so marriage merges completely into the social element.

But in this definition you have entirely left out the principle of

individual choice as a factor in the chain. This principle exists, however. We followed it to the animal; we ascertained that it was a decisive force in the case of man, and was constantly growing.

In a certain sense, that chain itself cannot do without it, the only thing is that at first it enlists the principle in its protective purpose and thereby revokes it at the last. Say a specially brave man is chosen as a family's best qualified defender and booty-maker. Or (what is most familiar to us economically to-day) in a tamer age, which does everything with money but still has marriage under a private economic system, a bride is brought home who is as rich as possible, and whose fortune affords the whole family to grandchildren and great-grandchildren the utmost possible economic "protection" as possible. This latter procedure already displaces something in the genuine nature of individual selection. An inferior mind or body might be expressly chosen for the sake of the wealth which chanced to be connected with it. As a matter of fact this has been a source of endless disturbances in the individual element of marriage from time immemorial. Conversely, the purely protective purpose of marriage, which proved its worth in the economic field in question of money and property, has again and again stubbornly defended this swerving to one side in practice, and has gained its end in countless cases. It is fortunate that an individual form of love-selection which errs so thought-provokingly becomes automatically regulated and disappears. For on the whole there can be no doubt that from the moment society relieves this fistic protection or economic protection of small family associations from duty and takes this task upon itself to a greater extent, all that part of individual love-selection which was compelled to pass this way becomes ever more immaterial. The more that protective purposes cease to exist generally, the less does it become necessary to be particular in choosing a protector, a master, a bread-winner. Marriage could therefore not be propped up permanently from this side with the principle of individual love-selection.

But individual love-selection does not by any means stop at the narrower idea of protective connection, or of providing for wives or families or children in the crude sense of utility and defence. And that is the decisive factor for marriage.

We learned in the nuptial bower of the birds of paradise what further motives extending far beyond mere protection can induce love-selection. Æsthetic motives appeared to us there. Even

though you might still have some doubts about the æsthetic angle of that animal fairy-tale, you cannot have any doubts about the human fairy-tale of the æsthetic factor in love-selection. Man's sense of beauty seeks the beautiful individual in love. So it is and so it will be. It has nothing to do and never did have anything to do with economic matters or protective purposes.

But we expanded the concept of the beautiful—from the rhythmically beautiful to beauty of soul! To ethical beauty, to beauty of character! This also determines human love-selection and makes it individual. We discussed the elemental force of these things in highest and most valuable humanity.

Certain imponderabilia of individual selection lie beyond this. The mysterious elective affinities of particular individuals. Singular dark attractive forces in love, more or less unconscious but releasing the most powerful imaginable will to union, impetuously drawing certain individuals together by the irresistible magic of love. Like polarities that exert a tremendous force of attraction and shoot like lightning to each other.

These individual selective imponderabilia have rivetted attention the most from time immemorial. They have been inexhaustible as inspiration for poetry. Goethe, in his powerful soul painting of the "elective affinities," has probably given the most monumental expression to them which the human attempt to exhibit these mysteries to consciousness has so far succeeded in doing; nevertheless he did not get any further than a chemical picture which was borrowed and on that account really foreign to the subject; it makes the straight-line force of these imponderabilia sufficiently clear but does not explain the driving mechanism of the soul. Here the extremely enigmatical quality of the individual element generally appears in all its demonism. It tears little strands of reason like cobweb. Conscious protective thoughts are the very last thing it yields to. The imponderabilia of love-selection have been the mother of all economic and social misalliances, of all love alliances over which good old sober common sense seeking protection and material provision has wrung its hands from time out of mind.

The same thing in the end happens here as with all demonic powers of nature: something important, something necessary to the progress of the whole achieves its end. You may not be able to grasp what the successful result consists of in individual cases.

Instinctively blind love-selection may frequently look like fate, like intoxication, like black magic that drags individuals into darkness and destruction because it hurls all reason out of the saddle and runs away like mad. But if you have faith in the value of the individual element (and this we must have after all), you must have confidence in elemental love-selection as an action springing from the depth of its source and which is not open to discussion and cannot be seen through, just as you trust love's tendency to go to the extreme act of sexual love as a terrible demon, but likewise a good demon after all. The compulsion of "blind" elective affinities in intuitive elemental love-selection is "terrible as the torments of heaven": but "it too is good; it too is a gift." Whatever breaks out of the treasury of the individual element in this manner cannot prove a permanent false value. Whatever daily impels human beings who are filled with the joy of life to choose death rather than renunciation must be just as noble a natural value for the good of humanity as the selective values which can be grasped with the understanding.

Individual love-selection is not a declining but on the contrary an incessantly increasing value in our civilization. The individual element is continually being developed, improved and refined among us. Merely think of the infinitely improved external means with which we are able to give intellectual expression to our deepest individuality, the more highly developed our culture and education is. Think what language alone has offered us in this respect, the infinite complex of ever new possibilities for very personal manifestation of character, knowledge subjectively worked up and inwardly transformed talent put into practice, and fine tact expressed in living. If there is one thing sure about our civilization generally, it is the fact that in the economic field, in the matter of protection, help, the material maintenance of life, in technology and transportation, in short in this whole phase of civilized life we are just as rapidly heading straight for the human, the general, the all-embracing element, wherein the individual is borne by the mass as we are hurrying toward a constantly growing triumph of the individual element on the other, deeper, inwardly spiritualized and profoundly creative side.

Never was a real age of general levelling farther from us than to-day!

And the more that love-life is relieved of the economic burden,

the more it is lifted out of "bread-winning" in the crudely material sense and is carried along in the direction of the purely human element, the more clearly, openly and unchecked, the more purged and purer, the more "wholly as itself" will individual love-selection make its way and gain its end—a course of progress without any end in sight.

It is clear that individual love-selection must keep on proving to be an autochthonal support for marriage, having nothing to do with the economic element.

For the more subtle and exquisite the occasion for the individual choice of lovers becomes and the more genuinely and with the more elemental force it finds full expression, the greater will become the probability that two individuals who have recognized that they genuinely supplement each other will want to stay together for a human lifetime. The old idea of "rarity" finally becomes intensified to "absolute uniqueness." "My woman or none!" "My man or none!"

As men of experience, we do not want to exaggerate at this point. To build marriage purely on individual love, entirely separated from the economic element, has been a dream of higher humanity from time immemorial. From time out of mind, however, certain difficulties have been seen to this.

Human life is short. Actual intensive love-time claims but a part of it. Habit plays almost an equally big rôle in life as does the need for change. Personal regard which bloomed on erotic soil but then developed into an independent force plays its helping part. It is certain therefore that the permanent institution of marriage can be built on individual love. Individual choice which rather dies than desists must decidedly possess a degree of strength which can endure for a short human life in real loyalty.

On the other hand we know the reverse side well enough, at least about ourselves to-day. The innermost, continued development of the individual element is just as incalculable as its motives in its instantaneous love-selection. Short as life is, it offers scope for the possibility of inward metamorphoses. This happens to us in the noblest realms of the spirit. How should it not play into love as well? We may therefore experience changes and wanderings in the realm of love which will prove stronger than our wish to remain constant. In that case we shall simply have to go.

This is the old tragedy of the pure marriage of love, particularly

when one remains under the spell of the old amorous choice while the other is out of the magic spell again as a result of some innermost transformation of personality. We must not tell ourselves any falsehoods about this if we want to be people of earnest practical experience.

Once entered into, the economic marriage alliance contains duties which have to be fulfilled to the extreme limit of one's power. A man must provide protection and help by continually exerting his strength, for as long as he is the support and shield of the family. This goes back to genuine ethical duties, like all things economic. On the other hand, the sort of marriage which is supposed to be built on individual love while disclaiming its whole economic phase logically does not have "duty" in that economic sense. It is in duty bound only to the voluntariness of the individual, which has to keep on being granted anew every moment that this marriage lasts. There can be no duty which might be laid claim to by force. There is no higher court of appeal if the individual element fails.

When marriage continues in voluntary force at this height, it acquires an unequalled lustre; it burns with a pure flame of love, and what could be more glorious. But the reverse side is that the individual element from which it is now inseparable can also put it out without any help from general human consciousness of duty being able to save it.

I am of the opinion, to be sure, that one does not need to exaggerate this either.

Our age is an age of nervous unrest. We are in the midst of a period in civilization's evolution which is proceeding at express speed. This is likewise reflected in our up-to-date individual element. We have the feeling that our innermost personality must travel with seven-league boots during our few years of life. This mad chase begins during school days under the narcotic influence of certain teaching methods. But it keeps on getting worse later on, particularly in the case of educated people. In the end we come to believe that genuine personality, the more modern we get, only proves itself by our acquiring a totally new inner visage about every three years.

But we are merely participating in a nervous tendency of the times, the tendency of a vague transition period. And this plays into our love-life as well.

We are of the opinion that a finer individuality must possess an

element which is so restlessly protean that love's desire with its motives for choosing must overtake itself and disavow itself every minute in order to reach out for something totally new. Civilized human beings who run around in particularly nervous haste assure us that every individual choice in love brings about its own destruction almost in the very first act of union. They therefore imagine a human being of the future who is in duty bound by his individuality, which keeps explosively developing ahead, to be nothing but a pure Don Juan, because he must be. (Poor slave to duty! Formerly it at least sounded more agreeable!)

This is utter nonsense. A pathologically overheated love-life, with which our times are crammed full on all sides, is in part involved here. In part, going along with the crowd in a superficial, characterless way and letting oneself be dragged hither and yon is confused with genuine force of personality.

It is true, that the individual element can become transformed by development and develop further and go new ways in the course of long years. But there is something persistent and constant in its genuine nature. On principle, character which has ripened and become clarified in youth contains the greater probability that it will remain true to itself in its fundamental inclinations at least from a definite age on. If a man of such character makes his choice in love at this peak of life, the greater probability will be that this innermost loyalty to his own self will afford sufficient loyalty for a permanent genuine marriage. And if we resolutely think of individual life as growing in this direction, that would include at least a growing tendency to maintain marriage and not the opposite. I am convinced that we are heading in this direction, despite all the present-day noise about marriage of love destroying itself.

Meanwhile it would be well if we could construct an additional special pillar for marriage out of the individual element, and as a matter of fact we can do that. It is an auxiliary prop, but it might become the actual supporting pillar at times.

Individual love-selection, carried through to the genuine sexual act, has one more definite consequence. The child. And more specifically the individual child originating from choice.

A sexual act following love-selection does not take place between any two "optional" beings, but in each case an individual of a very definite character has sought a second individual of the opposite

sex who stands in a supplemental relation to the deepest root value of his personality. This supplementing process can take place in a number of different directions. It can rest on definite reasons of contrast, which after all make a many-sided whole. It can depend on simple similarity, so that mixing like with like produces a simple plus in fundamental value, in individual force. The prerequisite in all cases is a very definite relation between the two individual focal points.

A child results from this union. It is not just simple social material—a new human number. It is likewise not merely a new root value in itself, coming up out of the unknown. It is fairly certain (at least as an average rule according to all that we know about the mystery of heredity) that it represents a comprehensive summary, an organic fusion, frequently a high degree of intensification of those two parental, sympathizing individual points; it carries a definite individual constellation further.

Herein alone lies the decisive thing for the permanent rôle of the individual element as a factor in evolution. This "child of choice" procreated in a definite individual direction is a totally different thing from just any child that has simply been "procreated." We discussed what treasures of humanity are unearthed, when the right selection is made.

The tremendous rôle which the child played in the origin of simple protective marriage became clear to us above. Male bird and female bird kept together beyond the act of procreation in order to protect their young. Among human beings, social relief would take over the care of the children in the crude material sense and thus cancel this reason for marriage. It would do so somehow, and at some time. That point of time is still remote though. You think with horror of the countless children who are starving and freezing every day, whom parental protection is insufficient to care for despite present-day marriage and whom society does not bother about. But that will become different. Those were no idle words about the child being an asset of the nation, and humanity will one day recognize its duty. When it does so, it will be able to do much more about these crude material questions of existence than all private institutions put together.

But now the question arises what is to happen to the child's finer individual values. The child of choice, whose parents have chosen each other: will not a new necessity spring from it which will hold

parents and children, their children, together despite everything? I believe that an extraordinarily great, an absolutely inestimable necessity appears here.

The individual element demands far finer sorts of "protection" than the crude supply of food.

The transmission of the individual element from the parents to the child, the continuation of the parental root-constellation does not by any means take place merely through procreation, through sperm-cell and ovum-cell. As a civilized human being, your individuality embraces other and totally different things from what your sexual organs produce in your body. You cannot transmit Goethe's Faust with your procreative apparatus. You can produce a child with it, but this child will remain an animal if you do not continually supply it with spiritual blood after its birth.

You will object that the social element can do this very thing too. Communal education could teach all children to read and could place Goethe's Faust in their hands when the proper time came. What need is there for individual parents!

And yet I assert that there is a big gap here. The singular magic of individual imponderabilia, which works into procreation, continues to rule in man far beyond that when parents and children remain together. The act of procreation in no wise exhausts our gigantically enlarged human individuality and cannot exhaust it. Education alone can make the rich spiritual stream of these imponderabilia complete with its means of language and with its conscious glance: it is part of the process of founding an actual "individual aristocracy" (if I may be permitted to use this easily misunderstood word here). What would I know, what would I possess of my father if I had been connected with him merely by a sperm-cell and not by the years, during which my awakening consciousness of the world continually fed and intensified its weak little flame on his old great flame, which was individualized through and through? A social upbringing without an individual focal point would never have afforded these individual imponderabilia, all running in the same direction of the fundamental character, in fact it would have worked fatally in just the opposite sense. The word "upbringing" is perhaps too coarse in this connection and looks too much like that old matter of protection for life's necessities. "Living together" corresponds much more to the fine way by which individual

values of the spirit flow over even after procreation—spiritual living together in its deepest sense.

What else results here but a new root of marriage!

It is a root which can only grow stronger the more that crude matters of protection become superfluous in a great social order. The more freedom, the more quiet possibility there is for all springs to bubble forth in the green wood of civilization without danger of their becoming troubled, the livelier and the more hopeful of success will be the wish to transmit what is best and most spiritualized in our personality to our children, not merely through the minute's embrace of a woman but through long years of free conscious intercourse. We feel as if a cloud descended on our consciousness in the moment of procreation. Let it do so; it is the cloud in which the millions of the years pass by, on which the entire possession of all your ancestors is transmitted by you in the extract of a tiny drop of sacred cosmic substance. But when the child has become clarified out of this cloud, the other tremendous apparatus of your consciousness begins to function all the more powerfully and sends its angels to this child on the wings of language. Your brain now continues the work of procreation. Do you simply want to throw this whole giant phase of individual work overboard, because an improved social order feeds and clothes your child and drills it in the necessary protective signals of life, even if you do not bother yourself about it?

I believe that exactly the same thing holds good by and large for these highest individual imponderabilia of upbringing as for physical procreation: they will never belong in the public market place among the crowd, no matter how the world and its morality may change, but in the still small chamber where a few chosen human beings have a longing for nothing else but themselves because within themselves they feel the world that murmurs over them with the thrill of the eternal mystery.

Let us be honest and admit that the dull perception of this true imperishable root-bottom of marriage has always been its strongest bulwark.

When people said that marriage had already gone out in the stars of the future, very simple memories of the heart stirred: parents surrounded by their children under the Christmas tree, all of them permeated with and at the same time shut off from the outer world by the great light bath of individual imponderabilia, which encircled the "family" like a protecting halo. No criticism, no matter how

harsh, no shriek, no matter how wild, emanating from destroyed, distracted, shattered special situations ever made headway against this picture. If it was not fulfilled in its entirety, it was an ideal. Social harmony too is an ideal—an ideal of the future. Why should the two ideals beat each other to death?

I do not believe in this manslaughter. I do see in the social element the ultimate relief of humanity from its animality in the sense of its paltry needs of protection. But wherever the material, the coarse element sinks down again, the finer, the spiritualized, the higher human element in transfigured form as the next higher need shows beneath it like the crystal-clear little elfin wing under the hard covering shell of a beetle. In that way I see the crude protective purpose of marriage, as the animal has it and as man still has it to-day, quietly relieved of duty in favour of a much higher protective purpose; in favour of the formation of individual springs in social civilization's mighty network of streams.

I see a marriage of the future rise on the wings of this new sense out of the chrysalis of our "marriage," which may well stand in the relation of an ideal to the latter, but at bottom this ideal already exists to-day and has long existed in our human longing, whenever we have spoken of marriage.

And let this leaf of the Bible of Love be turned over for good therewith.

The road is short which we still have to travel in order to get from the gnome of the woods in the Congo to where we wanted to get: to the lovely human mother in the lotus flower or to the Sistine Madonna, shining even brighter above her. The road which at the same time is the last station in the tremendous succession of steps from the procreative miracle of the mixing chromosomes in two fusing cell nuclei to the human brain which thinks love.

PART X

LOVE'S DANCE OF DEATH

§ 1

Concentrate your piercing glances
And transfix this martyred breast!
See the spite-wounds of life's lances,
See the love-wounds' joyous zest.

Yet I sang in trusting fashion
That my love was true to me,
That the whirling world of passion
Was a pleasant place to be.

GOETHE

THE storm is roaring outdoors.

The red hanging-lamp flares up softly now and then, and ghostly shadows move across the wall as if they wanted to become living beings and creep onward and ally themselves with Doctor Faustus for black magic's dark work. The old pieces of furniture acquire glowing eyes and long noses. But the flame gets steady again and suddenly the gnomes are gone. The room radiates its old cheeriness again from the eyes of its books and the eyes of its stars.

Every form of evolution has had its spectre too.

Its ghost runs after it as his shadow pursues the wanderer in the sun. The shadow becomes gigantic when evolution's sun is setting —a harbinger of darkness which will finally swallow up this mistaken point entirely. But when the sun of ascending life wanders straight toward the zenith, the spectre keeps melting away before it until the last note of its black double has finally vanished when it reaches the vertical position.

Wherever you look at the thousands and thousands of life's tentative forms on earth you will notice this phantom shadow. It lurks behind every single adaptation, no matter how beautiful. The proteanly changing forms of this spectral shadow are multifarious as

the courses of evolution; but it always indicates the solstitial point of the species—whether the latter is still ascending or going down. One-sidedness, exaggeration, degeneration, paralysis, all these are merely faces of one and the same demon. Hecatombs of extinct species are its victims, lying in the rocky strata of the earth's womb, eaten up one day by their night because their sun of continued evolution set. Wherever you look in the world of animal and plant life, you see those that are already marked for slaughter and that will plunge down after the others. Those that are too closely adapted, those that are petrified alive, the peripatetic automatons, they all are doomed to death.

There is only one form of life on this planet which has kept on conquering its own shadow until now, and that is you yourself—man. Man is the mighty wanderer to the zenith. This process of increasingly conquering his own shadow, so clearly shown throughout the whole course of civilization's history in every new invention, in every scientific, æsthetic and ethical deed, is the most comforting thing in the labyrinth of humanity's course. For the rest, you have shadow enough behind you and beside you. Man, a giant from the very first day, cast a giant shadow. It roves through man's love-life. We already crossed it a couple of times on our way. But it deserves a special look at it.

You know the story about Phaethon. It is not simply a jolly Ovidian fairy-tale. It contains a wonderful symbol, like all legends which are the extract of very profound experience gained from life. The stars had been rolling in their course for æons under the spell of laws that lie a cosmic layer deeper down than man. But one day this young man is on hand. There he stands. He sees the sun at work, and he asks himself if he cannot do it as well, in fact whether he cannot do it even better. And he leaps into the chariot of the sun. The finish is well known: he sets the heavens on fire and plunges to death and destruction. He was too weak.

There is a way for him not to be too weak. Phaethon becomes a wise Chaldean, who quietly reads the stars for thousands of nights. Phaethon becomes Aristarchus and Ptolemy, he becomes Copernicus and Newton; at last he knows the law according to which the heavenly bodies move. Phaethon becomes Faraday and Werner, Siemens, Helmholtz and Hertz, and he gets the forces of nature that hold sway from the falling stone and lightning to moons and suns, one after the other, in his power. After Phaethon has lived

another hundred thousand years he will ask himself whether he cannot leave his planet, whether he cannot travel with light which whizzes along at the rate of 186,000 miles a second, whether he cannot bring the force of gravity into his power as a child turns the hands of a clock. That is Phaethon, emerging slowly but with unchangeable steadfastness out of the shadow and going toward the zenith sun. The sun will at the same time be Phaethon himself when it is directly over him some day: evolution will then be in his hands and no longer in the power of incalculably strange forces. Phaethon will ride in the golden chariot as the god of the sun, he will be nature, awakened, seeing nature.

But this Phaethon of the millenniums is not the one meant by the legend. It is staring into the darkness of man's origin and it sees the Phaethon of danger, who seeks to drive the golden car with longing alone and without the power to do so.

This Phaethon, the protagonist of peril, whirls through love-life. He is man, seeing and thinking for the first time, and wanting to become the master of love.

Man's awakening is very wonderful. He thinks! That first chord which is struck is really the almighty Phaethon magic with which he will possess the world in the end. But how infinitely much lies between the two points, between the first red, lightning-flash of the sun, which brings out all the shadows, and the zenith hour, when the victor will no longer have a shadow and when he will merge completely into the mighty sun above him, into the luminous thoughts of the universe. . . .

You see the limestone cave before which the stars burn and the glacier blinks. And this enigmatical being who has slipped out of the chrysalis of the animal and thinks is standing there.

That demonic thing, which still stalks through all our philosophy to-day, takes place before his eyes for the first time: the "world" tears apart in two pieces—man's "ego" and "nature." But in the same instant an infinite longing arises in man's ego to recapture nature, to master it, to get it again as a member, as an organ. Man feels a longing to return home as an "ego" to nature, as being our deeper self and man's real struggle for existence. It is the root of all technology with its practical objective experiments and of all scientific research, and likewise the root of all longing for God, of all the soul's intellectual wrestling with the profoundest cosmic thoughts.

Man saw himself faced with two possibilities from the very beginning, two roads in the complex of savage and gentle things that crowded in upon him as "nature."

He saw the one road when he learned to lure a spark out of flint for the first time and when he noticed for the first time that one could cross a river on a hollowed-out tree-trunk. Nature which suffered itself to be mastered and ridden like one of those wild horses of the flowery steppe in the post-glacial period. This was the line along which his first belief in his Phaethonship could grow up and did grow up. Calculable nature!

But there was another part. Nature, too, but rigid, gigantic, incalculable. The sun. Winter. Death. And so much else. These things simply came to pass; no technology touched them. No rope drew the sun along, no barrier of beams kept winter back, no possession of implements warded off old age and death. At least, so it seemed. How was Phaethon to ride these facts. He sensed a law here in a dull way. But how to get hold of this law so that it would make these things willing tools?

You know all that man tried; what the savage tries. He looks for witchcraft, spooks, demons and miracles behind these things. He prays, he conjures, he seeks a spiritual relationship by brute force. He sacrifices, he emasculates himself, he bleeds, curses and whines, all in the hope that this incalculable incomprehensible part of his nature could be transformed into flint, into a ship after all. And Phaethon keeps on plunging down in flames! Man was a menace to himself and to evolution at this stage. In his longing to conquer the heavens he continually ran the danger of setting fire to them and wretchedly burning to death.

And this human being is now face to face with the facts of his own love. For the first time he faces erection, menstruation, procreation, pregnancy, childbirth with thinking eyes! Where did all that belong? In technology, in that part of nature which had been conquered with the spark from flint, with wooden canoes, fish hooks and arrows? Or in that other mysterious part where the sun and the moon rose, and suddenly became eclipsed? That part of nature which man tried to influence by praying, shrieking and beating tom-toms.

And all of a sudden the shadow, evolution's dangerous shadow, comes dragging along, gigantic in size.

Look hard at it, and you will see a phantom procession in the

sallow semi-darkness. Love delivered up to the wild imaginings of man. You know Petronius' old saying, *"Phantasia, non homo."* "A figment of the imagination, not a human being."

A gigantic grey cross on which a beautiful naked woman is hanging. Love rises above the whole procession crucified on man's mad runaway imagination.

No animal had dared to do that.

The mole had loved—it had loved in old orthodox forms. But there was not a single instant in its life when it wanted to dash ahead with love according to its own sophisticated reasoning, as Phaethon did with the chariot of the sun. No mole ever asked what mystery might be lurking behind love which one could somehow or other master in a thousand mad ways. . . .

Draw a magic circle of blood around you. Conjure up shadows. "The moon hides its pale beam. The lamp goes out. Steam rises! And red rays shoot round my head. . . ."

Menstruating woman approaches, a martyr to imagination's shadow. She comes in the guise of an Australian. Blood runs out of her mouth, for an operation has been performed on her by way of celebrating her first sexual bleeding. Two of her teeth were knocked out. She writhes and twists in strange fashion, and not from pain alone. The idea has been inculcated in her as a sacred matter that she must not see the back of a human being for three days. Otherwise her mouth will close tight and she will starve to death. Her two teeth remain enclosed in a little case made of ostrich feathers for a year because otherwise two giant tusks would grow to replace them, piercing the girl's head and causing death.

The little cage which you see back there, six to eight feet high with a barred hole for light and air, comes from the Bering Strait: a poor Koliyan girl with blackened face is in it. She has been in it for a year. Her crime was her first menstruation. The girls in New Britain have to stay in a solitary hut in the woods for five years. For menstruation is not the first hopeful unfolding of the female flower of love to the vague roving imagination. It is an atrocity, a vampire, a monster.

Fat Pliny, apothecary to all the world, dispensing all antiquity's concrete wisdom and fantastic ideas about nature, walks in the procession. He informs you that the brightest razor becomes instantaneously rusted by contact with a menstruating female. A

cow with calf will give premature birth to it at the mere sight of her. A dog which licks her blood goes mad. If the unfortunate woman sits down under a tree, its fruits shrivel up and drop down and its shoots wither.

The sick Indian, whom old Pliny did not know a thing about, is suffering from general debility because he stepped on menstrual blood. On the Orinoco, the spot turns into a desert waste wherever a menstruating female relieves nature. In present-day Italy where the popular imagination still blooms luxuriantly, the grass shrivels wherever such an outlawed female treads in a green meadow, and it never sprouts again. A little manual of midwifery from the eighteenth century tells you that this blood works no differently from urine. This mirror with two uncanny round spots eaten through the glass and the quicksilver came to be branded in that manner because a bleeding virgin looked in it: her eyes burned the holes in the mirror. The snake crawling along there was hatched out of the incubator of a dung-heap from a menstruating woman's hair. That human being who is writhing in the last convulsive agonies of death was not bitten by a mad dog but by a bleeding female.

The Great Elector's private physician, Baldassar Timäus of Güldenklee, instructs you in the year 1704 that menstrual blood is to be classed among medicaments as a powerful poison, "for when it is taken into the body it makes a person absent-minded, dull-witted, melancholy and at times it even makes him mad and senseless or leprous," and the victim can be helped only by drinking a hellish brew concocted of melissa water, poison from an adder, bezoar and theriac.

The bleeding female performs a few good miracles too. In Pliny's day a ship was saved during a fierce storm because a woman in that condition was on board: Neptune positively refused to swallow up the unclean craft. In those same days, that Cappadocian woman was returning from an early morning walk through the fields; her poison had been enlisted in the service of husbandry, for she had her garments pulled up to her loins, and immediately all the bad insects fell down from the trees like a rattling hail-storm. Of course, if the sun had taken her by surprise, all the young crops would have been withered by the sight. According to that booklet about midwifery, if a little soiled piece of the garment is worn next to the bare skin it brings luck in gambling and victory in a fight, it

cures sickness and puts out fire, in short this tiny red drop on a piece of linen is the philosopher's stone.

The phantom procession rolls on. The shadows keep getting crazier.

That bleeding boy is a little Hottentot. Like all of his kind, he had his left testicle cut out when he entered the ranks of manhood; the great idea is to keep him from procreating twins. For twins are a nightmare to the shadowy imagination.

That pair of parents from Northern Transvaal seem to be bitten by a tarantella. Marital fidelity had been kept intact. Nevertheless the wife brought twins into the world. The poor things were immediately killed and buried in a pot on the bank of the river. Then the medicine man, the king of magic, was fetched. A fat fee was slipped into his palm, and now he is expected to protect the home against the recurrence of such a frightful thing. He has confiscated all clothing as if he had been sent to a cholera case by Koch and Pasteur: he is a mystic exponent of antiseptics, who hopes to ban the ghost-bacillus. He has ordered that nobody may leave the house through the door as the best old approved cure-all; and a new opening has to be broken through the rear wall.

An old German peasant woman hobbles behind them and assures you that a woman who has twins is herself to blame, because when she was pregnant she ate carrots that were grown together.

This Egyptian woman is approximately four thousand years old. She wants to know if the hand of godhood has touched her for the purpose of increasing and multiplying her race. She is carrying two bags filled with wheat and barley respectively. She had soaked them in her urine. If they germinated, her wish was fulfilled. If the wheat alone germinated, it was going to be a boy. If the barley sprouted, it signified a girl. The gypsy woman from Transylvania who follows carries a basin of water in which she has put a raw egg. She has likewise spat into it, and the pregnancy test will be decided the following morning: if the egg floats on the surface, she is pregnant; if the yolk has separated from the white of egg, she is going to have a son, but if the two parts of the egg have wedded, it will be a daughter. She goes out in the evening and looks up to see if any geese are flying—that tells her the time—she will give birth to her child next day.

That poor reeling woman who has just been confined is a negress. If her child came into the world feet first instead of head first it was

instantly put to death by the wise women of the tribe who assisted at her childbed. Twins naturally suffered the same fate. The child was in danger of death later on—in case its upper teeth broke through first. The amniotic liquor was carefully caught, for the chief laid claim to it for use in his magic horn as God knows what sort of a miraculous medicine. The woman who has undergone confinement cannot help looking very bad, because for three days she has been allowed to drink nothing but her own urine. Only on the third day was she permitted to nurse her child, which had been fed on pap until then; her breasts were first slit and medicine made from roots was rubbed into the cuts.

The abominable thing that now comes fluttering along is not a bat. It is the spirit Asuang, born in the imagination of the inhabitants of the Philippines. He has mystic oil glands at his arm-pits (recall our story about the hair there!) and these give him the power to fly. He has claws and a long tongue that looks as if it were made of black leather. He is the vampire of the pregnant. He eats up the child in the mother's body, causing her death. Like the devil in the German legend he has his sexton, a night-bird; and when it sings, every one shudders, for the Asuang is abroad.

That pregnant Esthonian woman throws her shoes away: she does so once every week for it throws the devil off her track; this devil of the popular imagination is always exceedingly stupid after all!

Despite all her tricks, that poor gypsy woman has fallen victim to her pursuer, for she yawned just once in her pregnant condition and forgot to hold her hand before her mouth, and immediately an evil spirit flitted into her body.

It required a whole arsenal to defend the Circassian woman next to her against the "evil spirit of the after-pains." Fat was constantly thrown into the campfire while birth was taking place. Then they fetched the horse with the biggest eyes from the stud; it had to touch the woman's bosom. Then an owl was brought into the tent and teased until it screeched: the evil spirit cannot stand this. Another bird of prey was placed directly on the wretched woman's breast and gooseberries were thrown at her, in order that the bad spirit might stick to them. A sword with its blade pointed upward was buried beside her pillow. If the after-birth does not come because it is blocked by the evil spirit, the tribe's singer instead of the doctor enters the tent; he throws himself on the suffering woman and beats her gently with his staff.

That peasant woman from Vogtland likewise knows the rôle of the professional "singer"; the night-watchman came and sang a religious song to her when childbirth proved a long drawn-out affair. She had to take some consecrated kümmel which had been plucked at twelve o'clock of midsummer-night, the whole house was filled with the incense of onions and all the doors were unlocked.

The peasant woman in the Steiermark next to her has pasted pictures of saints on her skin; in her hand she holds the desiccated knee gland of a male chamois that was in heat and she wears an adder's skin round her waist. The woman of the Palatinate smells a rose of Jericho that is unfolding in water as she writhes in pain.

Do you hear the crazy sound of the fifes and drums? The friends of the naked Niam-Niam woman in Africa keep this fantastic music up until the woman who is in labour reaches her goal.

The earnest man with the glowing imaginative eyes of the Middle Ages next to her is Francis of Piedmont, the Neapolitan master flourishing around 1340 A. D. He just happens to have a maternity case under his care. The woman must hold magnesia mixed with ashes of donkeys' hoofs and horses' hoofs in her left hand. Her poor parched throat gets water containing ink to drink, according to the doctor's strict prescription. It is not ordinary ink, but ink which has been put through a process of spiritualization. The psalm *"Miserere mei Domine"* was written on a piece of parchment as far as the words *"Domine labia mea aperis,"* then the writing was washed off with water and this is what the suffering woman now drinks, symbolically swallowing the text of the psalm. *"Memor esto Domine"* together with three paternosters is said into her right ear at the same time, and round her neck hangs a piece of parchment through which a pure virgin has drawn a woollen thread and on which is inscribed the *"Dixit Dominus Domino meo."*

Old Pliny raises his voice once more: he recommends bringing along an eagle-stone found in the nest of the king of birds as a talisman for confinement. A very modern face smiles roguishly at you over the shoulder of this friend of the old Cæsars who was among the victims of Pompeii—a peasant doctor of Reichenhall in Bavaria. In our time he possessed and exploited the same eagle-stone that was famed in antiquity. According to our unholy chemical analysis it is a brownish-yellow piece of clay-iron ore with a loose core. It is set in brass and can be hung on the left hip of the woman in childbirth, according to the same prescription which good old Jacob

Rueff of Zurich had given in the year 1554 in his "Nice merry little book of consolation about the conception and birth of human beings." It is scraped out in some places: the wonder doctor or his predecessors undoubtedly gave a little clay-iron ore internally to some woman patient who paid particularly well. This stone, removed from its mystical sphere of action into the profane element, is now in the Berlin Museum of German National Dress.

The next couple that walks in the procession comes from the island of Nias. The woman is with child. That signifies a hard time for the savage pair, caught in the net of racial imagination from the day when it is known that she has conceived. A totally new mode of life has begun for them, every least little thing is carefully weighed from the viewpoint of a mysterious connection between the parents' everyday acts and the coming child. They must not pass by a spot where a human being has ever been killed, a bull carabou butchered or a dog roasted according to the custom of the country, because otherwise the child will become crooked like a dying man. They must not build a house nor put on a roof nor drive a nail, stand in a door or on a ladder, and they must not break any tobacco leaves in their betel bag: for all this would happen to the child in fatal fashion. The nail nails the child fast in the womb, and only when the father pulls the nail out again does birth become possible. If they look in a mirror, the child will be cross-eyed; if they eat a crow it will crow; if they take hold of a monkey it will have a monkey's head; if they assist in eating a pig from a funeral feast, it will get the itch; if they plant a pisang tree this will grow into a sore in the child; if they eat the larva of a capricorn beetle, the country's great delicacy, the beetle will plump down on the child's breast; if the parents strike a snake, they wound the child's lungs; if they press oil they squeeze its head. If they pass a place where lightning has once struck, the child will be charred black; and if they eat an owl, it will screech like an owl. If they set fire to a withered field and the field-mice burn to death, that is exactly the same as if their child were in the flames. Woe if the one steps over the outstretched legs of the other: he thereby ties the child up in a knot, preventing birth. The Ambon Islander who otherwise used to step quite harmlessly in front of his hut to relieve nature must take precautionary measures even in connection with this innocent act when his wife is pregnant: if he light-mindedly exposes his male member before the

shining disk of the moon, the women in the moon will see it and feel insulted; but weal and woe at childbirth depends on them.

These spirits lurk everywhere. That Russian midwife hastily carries something away, mumbling to herself. It is the after-birth, and it must be interred in a special spot in the courtyard, otherwise the child will be taken gravely sick; and the midwife must pray: "Perish, perish" at the burial. She is burying an evil kobold.

They do it more poetically on Ambon. The placenta is wrapped in white linen and placed in a shell having three holes. This little coffin is then buried with solemn ceremonial on a hill, with seven burning candles which must burn for seven nights. A special watchman is placed there, whose duty it is constantly to strew the spot with fresh flowers.

A more savage light shines into these seven little tropical flames. It glows from Norway and it is a little funeral pile. The midwife has first "killed" the evil after-birth by literally stabbing it with a knife like a living wild animal, and now she cremates it because otherwise the monster Utbor, who can make himself small as a mouse and yet roar like a bull and who wants to eat the mother would come crawling out.

Now you get a whiff of something roasting in the kitchen: Brazilian Indian women are sitting together and eating the after-birth. On Java, lots are drawn for it in order that the lucky woman who wins may eat it and thus obtain the certainty of becoming pregnant soon. The little bark carried along by the current, likewise on Java, is a lovely picture: the after-birth is bedded on a little bamboo float, flowers and fruits are placed about it and burning candles are stuck round it like a birthday cake. In this fashion does the little Mosaic bark float down stream. The crocodiles will eat it in the end. But the souls of ancestors are in them, and therefore it will reach the right place.

The little candles gradually go out, but now we see a halo.

The after-birth is not merely the apparatus by which the child was nourished, the placenta, but it also includes the glassy covering garb in which the little nascent human being swam within the womb like a little fish in the aquarium. This is called the amnion, and consists of the egg skins. Imagination has shed a golden halo around the amnion. If the child is still helmeted with it at birth in exceptional cases instead of having it follow, that is held to be a "lucky hood." In Modena it is still called the Virgin Mary's little

shirt. It is a sacred amulet which the child must permanently wear at its neck. It is put on the child at baptism so that it too will be baptized. Midwives frequently steal it and pass it on to other children, in order that they may become fortune's favourites.

The voice of a quack advertising his wares is heard amid this holiness. Going once, twice, going for the third and last time! In nineteenth century England the belief in signs and miracles was still so great that there was a fixed price for a lucky amnion. There were advertisements for them in the London *Times*. In 1779 the market price was twenty guineas, but by 1848 enlightenment had reduced it to six guineas: the market value of enlightenment!

Midwives are not the only purchasers. A lawyer has one of them concealed on his person as a lucky charm: for it is supposed to bring luck to lawyers in court.

Fylgia, the guardian spirit of the child, lives in the little hood and keeps in contact with the child's soul in Iceland. In Southern Russia, when a girl touches a naked spot on a young fellow's body with this faithfully preserved amulet he must instantly love her.

Do you see the monstrous procession that now comes rolling through the mist, endless as a Midgard serpent of cosmic length? Demonic shapes of superhuman size, men and women and gnomes in between like little children. These are the gods that are back of birth. Recall the fact that the Aztecs in their isolated nook of the world had two thousand gods alone according to a mild estimate. Two thousand gods for two thousand human needs. Among these needs is the tremendous one of love, procreation, and birth. Where gods rain down in the imagination like white cherry blossoms in the springtime breeze, they will pile up thickest over this big central spot.

There is ancient Istar, walking out of the Euphrates valley, out of Sumerian-Akkadian civilization, where astronomy first bloomed but where the whole starry sky at the same time came down to earth in the form of gods and mixed into all the profane affairs of everyday life. Istar is symbolically the eternal feminine, the female principle of the universe, which enters into every pregnant woman when she has to give birth to her child, and which gives birth to the child out of the cosmos in her and through her. When Noah's flood came roaring along (this myth comes from there, transmitted to us in the original cuneiform text), Istar wailed because her human beings, all of whom she had borne, had to dive into the boundless sea

like fishes. But Istar did not merely give birth to human beings. With the god of imagination she generated further wondrous beings. There goes her gigantic Babylonian daughter, Astarte; she too gives cosmic birth to all the world. Mystical procreation that is imagined behind all natural procreation runs down from the moon and the stars to the conceiving earth through her as medium. Everything belongs to her: the virgin as well as the mother, virtue as well as the child.

She becomes Mylitta, and the holy sacrifice of the maidenhead about which we already spoke takes place in her temple at Babylon. The women sit in long rows, their heads bound round with garlands of fillets, forming a double line with an open passage in the middle which is kept clear by means of ropes stretched along it. Ladies of the upper class arrive in closed cars, surrounded by bands of female slaves. All await the sacrifice to the god. The strange men now approach along the central lane. They choose as they see fit. A coin rings in the lap of the woman chosen (it goes into the temple treasury) together with the cry "Mylitta." Mylitta wills, Mylitta has chosen. The woman follows the divine messenger in silence and gives herself to him. It is the mystic act that overshadows all profane acts; it is Mylitta who enters into her in order to possess her forever.

Do you hear the mad intoxicating Bacchic music? Those pipes and drums have been going full blast in the temple grove at Hierapolis in Syria for more than a thousand years. It is meant for Astarte, the eternal man-woman and woman-man at the same time —the bisexual being which is restored in its entirety only by the human act of procreation. The act of generation is a form of prayer here; it is the sole moment in which man can wholly embrace deity. Wild women dressed in men's clothing and men in women's garb go tearing along like mad. They unite: they pray. Priests manage the celebration; the music is sacred temple music. This insane cult pronounces all perverse forms of love holy. Men try to become women. The sexual member is sacrificed. The people pour in vast crowds to this spring festival. The temple shines down from the hill over the city. Ionic columns support its roof; its foot rests on tremendous terraces. And the whole temple district is one great treasury full of the most magnificent consecrated offerings. Those who do not give gold give castrated slaves for service in the temple. Two sky-high obelisks tower at the door—symbols of male procrea-

tive strength in the form of a stone member. Every year a human being in the odour of sanctity climbs up on each of them and prays on top for seven days and nights; the offerings of the faithful, whom he includes in his prayer, pile up down below.

And this cult continues to rave on, while the beautiful marble temples of the Greeks are gradually growing up beyond the blue sea, the temples between whose columns Plato walks and men philosophize about divine love; it continues to rage as the she-wolf suckles her senators and Cæsars on the Tiber; the madness and the beating drums continue until Constantine the Great embraces Christianity. Then it ebbs away on a large scale but keeps on breaking out here and there on a small scale as an indestructible phantom light, as soon as religious feeling feeds it.

The music sounding from a somewhat greater distance is sweeter and more mysterious. The shadow band roves through India; lotus flowers bloom in it and the sacred river murmurs in the depths. The pagodas of Nara-Lingam and Nari-Nahamam tower separated from one another there. It started with very sweet melodies. Nari originally was love, the "golden womb of the universe," who became wedded to Nara, the spirit, and so created the world. This bright picture looks as if clairvoyant imagination really did burst the barriers of humanity for a moment. . . .

But things do not remain that way. As brahmanism becomes worldly, Nari remains only the mystical deification of the female gateway of love. Its symbol is the *nahamam*, the female organ of generation. Nara, on the other hand, is holy man as a male member, as *lingam*. Each of the two deities has its own pagoda and here the symbols are displayed on all sides, naïvely like other sacred emblems in places of worship. The faithful pour to these shrines when the time of consecration comes around. The men to the pagoda of Nara, the women to the pagoda of Nari. There are priestesses in the former, garbed with wild sensuality, with flowers in their hair and half suffocated in perfumes; there are priests in the latter. Incense steams, divine service is taking place, and this service consists of promiscuous copulation. This festival of love is one grand flaming orgy and lasts for nine days at the vernal and autumnal equinox. All the inhabitants of the place take part in it. Each one wears a male *lingam* emblem joined with a female *nahamam* around the neck as a token. And all return home in the firm belief that they have experienced a religious time, during which their

small human sins fell from them in the transfiguration of the divine service. Tremendous power of the imagination!

But the music is suddenly frightened into silence, for here comes a leathery pedant. The Roman is coming—old Cato, old Cicero. Everything, including the imagination, is firmly regulated by law here. Every sexual function has a deity of its own, to the point of the ridiculous. Here comes Mena: she is the guardian divinity of menstruation. Lucina protects the pregnant woman who sacrifices flowers in her Esquiline grove, and keeps her from miscarriage. For a week after the child has come into the world a propitiatory meal is set out each day for her there. In addition to Lucina, a whole catalogue of other goddesses and gods assist at birth. When the child occupies the normal position, Prorsa helps as goddess of the forward position, and Postverta, the "twisted one," when the position is turned just the other way around. Pilumnus, Intercidona and Deverra guard mother and child against the mischief-making god Silvanus; Carna and Cunia cherish the child in the cradle, Ruminia is the divinity of suckling, Ossipaga specializes in the growth of bones, Vaticanus and Fabulinus preside over lulling the child to sleep and over crying. Vitumnus awakens life, Sentinus and Sentina feeling, Vagitanus breathing and crying. . . . The divine element becomes an absolute mirror of the earthly here. Every act gets its divine reflection—raising one's eyes to heaven as well as relieving nature that looks to earth.

The shadow rolls on and on. A beautiful Hindu girl, lovely as Sakuntala, comes walking along. She steps out of the old Bible of the Hindu Vedas. She is in love, but she has a bad rival. Her human charms are inadequate. A mystery has to be resorted to. She carries a magic plant in her hand. As she dug it out of the ground she said to it: "I dig out this plant, this powerful herb with which one crowds out rivals. Thou of the outspread leaves, though salutary, powerful one given by the gods, blow my rival far away, get me a husband. I am more glorious, O glorious plant, more glorious than the glorious, but let my rival be lower than the low. I placed the victorious one beside you, I covered you with the victorious one: let your striving run after me as the calf follows the cow, as water runs along the road."

The ancient romanticist Apuleius, mystic and poet, magician and prophet, humourist and purveyor of smutty anecdotes to the world

of fashion all in one, follows (from the time of the later Roman empire) carrying a love potion for the heart of a rich heiress. Asparagus is swimming in it and shrimps' tails, fish spawn, the blood of the grape and the tongue of the mythical bird Iyop—a veritable dish for an epicure!

The Greek beside him has a few drops of his lady-love's blood in a cup in which the hippomanes is dissolved—a mysterious black skin the size of a fig, grown on the forehead of a new-born filly and burned to powder.

An endless landscape of deep green thickets and meadows, broken only by countless blue canals on which row-boats glide silently, arises. It is the Spreewald. While the young fellow in the little boat is rhythmically dipping in his oars he too is brooding how he can get his girl. He caught a frog and buried it in an ant-heap. After a few hours he plucked out one of the martyr's legs. And now he is going to look for his cold and reserved sweetheart for the purpose of suddenly slipping the frog's leg into her hand when he shakes hands—that infallibly helps.

The young Swabian peasant with the pot in his hand goes to even greater trouble. He has a tree-frog in the pot, and is going to bury it in an ant-heap. For to-day is St. George's day. In one year to a day he will take a look at it again. The ants have reduced the prisoner in the pot to a skeleton. He will take a thigh-bone of the skeleton and he will secretly stroke his girl with it in his direction. That will help.

The lover behind him comes from Samland. He carries an owl—a trophy of the chase. At midnight he will cook it. He will take two little bones that resemble a pick and shovel out of its head. He will bury the rest of the owl. Now he possesses a panacea, for every maiden whom he touches with the pick must follow him. If he wants to get rid of her again, he touches her with the shovel.

That East Prussian girl has something in her hand too—a bat's claw. She will claw her lover firmly to her; he will be a defenceless victim. That pretty little Italian girl from Calabria will confine love in a snuff-box. The snuff in reality consists of the pulverized dried body of a lizard drowned in wine: a pinch of this thrown on a man will make him fall madly in love with the living Lacerte.

Read the prescription on the bottle that comes wobbling along. It is a love remedy which will break up coldness as quinine does

fever: twigs of laurel, the brain of a sparrow, the bones from the left side of a toad, the testicles of a donkey, a horse and a rooster, and female menstrual blood. The woman in the case coming behind the bottle was arrested in Berlin, in 1859, because it was proved that she did an extremely lucrative business in similar love potions.

A toad . . . why everywhere the toad in this shadowy tail of amorous imagination? That Tyrolese peasant woman can teach you why. She is going on a pilgrimage to a miracle as the poor youth goes to Kevelaer. But she does not carry a heart of wax as her sacrifice there. You see a little monster made of wax in her hand; a living image of a toad, fat and with legs outspread. The monster has a silken cord around its neck, and by this it will be hung up beside the sacred object, say the altar-piece in a church. In this way, the poor woman will rid her own body of grievous suffering. For this toad is nothing but the emblem of a womb. Consecrated at the altar, it will ameliorate the terrible pains that proceed from the real womb in the peasant woman's body. The mystic element will flow around it and from it will enter its real prototype, healing like a physician. But why specifically the image of a toad as symbol?

Fantasy raises her fairy wand: the womb is itself nothing but a mysterious toad living in the female interior. Just as the child lives for a while as a stranger in the womb and just as the tapeworm lies in our intestines as an independent, unbidden being, so the womb is a sort of parasitic animal living a separated existence in the female, to the popular imagination.

This belief is very ancient. The womb has to be fed or else it gets restless and bites.

Wise Solomon already uttered the proverb: "There are three things that are never satisfied, yea, four things say not, it is enough: the grave; and the barren womb; the earth that is not filled with water; and the fire that saith not, It is enough."

Plato teaches you that the uterus is an animal which demands fecundation for food; when it is forced to go hungry, it begins to wander and torment the body. The wise Cappadocian physician Aretæus tells you: "The uterus lies in the middle between the two flanks in woman, a female entrail which has a perfect resemblance to an animal, for it moves to and fro in the flanks. The uterus enjoys agreeable odours and approaches them, while it draws back

from bad ones. It is like an animal, on that account, and it is one too."

And so it goes to this day. The Malay tells you that the uterus lives for itself; it merely lives in the woman, and it must eat sperm in order to remain healthy.

He says it in Malayan. The peasant woman in the valley of the Enns says it in plain German. And she not only knows what its natural nourishment is, but she knows of a special fantastic food for it. She makes a pill of mint, spirit of hartshorn, honey, nutmeg and cat's lard, and this is put in a nut-shell. Then three little wax candles are stuck on a little wreath of wax. The nut-shell is placed in the middle of these candles on the navel of the sick woman and the candles are lit. In the face of their radiance the restless womb crawls back into its little house and the sufferer has peace.

The pilgrimage with its votive offering in the form of a toad springs from this idea. The account of an old miracle says: "Her womb had bitten Hans Biberger's daughter all day long without ceasing, until it plighted its troth here with a womb of wax." The outline of the thick organ with its horns may have been the occasion for the toad figure, once the fact was determined that it was an animal.

A phantom procession. The shadows whirl faster and faster, merging into one another.

This enchantingly beautiful she-devil is Lilith. Her trail is marked by an endless chain of lamenting mothers, each with a dead child in her arms. The rustling of the Hebrew legend, a mixture of sensual pleasure and death, makes one shudder. Adam had lived with Lilith, the wild sylvan spirit of paradise, before God gave him Eve. Eve was the first faithful wife. Lilith still embodies the free love of spirits. Because she no longer liked Adam one day, she up and left him, undoubtedly for the purpose of being edified by other beings in her primeval forest. But Jehovah did not want his Adam to be alone. Three angels whizz behind Lilith and place her before a cruel choice. She must either return to Adam or have one hundred of her children die every day of her life. Adam could have given little pleasure to this Titania of paradise for she chose the latter alternative. Her lot is a ghastly one. She takes a terrible revenge. As these hecatombs sink about her she strangles little human children of the Adam and Eve lineage. She is the evil spirit of maternity to this day. Nothing can safeguard against

her, but the names of those three angels whom Jehovah sent after her, Senoi, Sansenoi and Samangelof; the Jew writes their names on a piece of paper and hangs it up in the woman's chamber. Elsewhere, six men from the synagogue have to pray at the mother's bedside. A chalk mark is drawn around the mother and on the door is written: "God let this woman give birth to a son and let him get a wife who resembles Eve and not Lilith."

Uncanny animals follow this female magician from paradise. Animals that mingle with men. But they are not genuine animals. There are gods in them.

There is the sacred he-goat of Mendes in the delta of the Nile. Crowds of intoxicated women give themselves to it because it is the god of the sun, the all-glorious, the world conqueror, pouring his procreative force over the world like his golden sunlight.

Zeus is in that bull.

The motley shape that comes wabbling along so grotesquely—half animal and half man, half just an arabesque and as a whole just wood—possesses supernatural human power in New Guinea: the Papuan woman who surrenders to sleep in its vicinity will become pregnant.

The nightmare, the vampire, the incubus and the succubus follow: they are the spirits of erotically excited sleep and nocturnal pollutions.

They invade the couch of male and female and subject them to force, awakening children for them, about which nobody knows where they come from in waking hours. Legal conflicts that cannot be unsnarled enter orderly regulated life: the elf takes the husband's shape and embraces the wife who suspects no evil: but afterwards her child is a little mandrake, a fairy-child, an accursed dwarf who suddenly calls out in the cradle that it is old as the hills.

The grinning gnomes and devils of the woods who attack women ride on the branches of primeval forests—in the pine woods of Germany equally as well as under the screw-pines of Polynesia.

Lastly, behind all you spy the rooster's feather nodding on the red hat: Satan, who seduces women and turns them into witches, smiles at you. Changelings are the fruit. The devil's wave of life is icy cold, for it was stolen from human males. There is an endless amount of sworn testimony on this point. Red pillars of flame mark the stakes at which the devil's convicted sweethearts are burned. . . .

Gone! Gone!

A few more pictures dash madly past.

A Chippeway Indian woman is dragging a curious bundle along. Her husband has died. She must carry a symbolic "model" of her husband in her arms for a year, wherever she goes or stands or sits. She has taken her best dress for the purpose and bundled it up like a doll, putting her husband's belt and his articles of adornment on it.

As a widow, the woman of a certain Ural tribe carries around a board crudely carved in human form. This is her "husband" for the period of mourning. She cleans it, takes it into her deserted bed and places food and drink before it at meal-time.

These poor widows are martyrs far beyond the simple loss of the beloved one. There is something of heroic love unto death about it when the Hindu widow is burned on the funeral pile with the body of her husband. But the tormenting imagination knows totally different and ingenious forms of penance for her. According to Hindu belief, a mystic bond persists between husband and widow even when she continues to live. The dead man's felicity depends on her mode of living. Henceforth she is marked for all time as one who must keep to a holy diet. She may eat only once a day. She cannot have meat, fish or sweets any more; frequently fasting and mortifying the flesh is her portion in return. She must no longer care for her beautiful hair and never again may she look in a mirror. She must sleep on a rough mat with a block of wood for her pillow. It is exactly as if the late lamented still harassed her as a ghost for the rest of her life.

A Tolkotin Indian woman really comes panting along there under the burden of a dead man's shaking bones—the remains of her late husband. After he was cremated, the poor widow had to gather up the largest bones in a bag made of birch bark. She has to carry it constantly on her back for a year. But her sufferings do not end then. For years she continues to be the most wretched of slaves to all the other women of the tribe, an outlaw whom the others can beat at pleasure. Her punishment is frightful if she fails to pluck out each last little weed at the spot where the rest of her husband's ashes lie buried. And only in the fourth year does her hour of deliverance strike. A great festival takes place. She makes her appearance for the last time carrying her husband's

bones pick-a-back. They are taken from her, nailed up in a new box and hung up on a high post.

Then court is held as to whether the widow has been faithful. If she passes this test, the chief anoints her head with oil for the first time since her widowhood and adorns her with bird feathers. Now she may marry again.

That Andaman Island woman walks along as if she were assisting at the removal of a dissecting room. A skull, painted glaring red and ornamented with fringes of wood fibre, grins down from her left shoulder over her naked breasts. It is her husband's skull, and the widow has to carry it on her naked skin until she marries again.

The next picture seems jollier. A tomtom is sounding, bright garments are waving and a magnificent wedding litter approaches. The scene is China. But death stands uncannily behind this wedding. Two human beings are being married after their death. Both died when they were children. The time approaches when they would have married, and the parents go about the matter as if death had altered nothing. A marriage broker is called in, and for each boy he finds a number of girls of the same age who are "equally dead" and vice versa. The horoscope cast by the astrologist determines the final choice. A "lucky night" is selected for the wedding. On that evening a paper effigy of the dead boy in wedding garb is placed on a stool in the ceremonial chamber at the home of the bridegroom's parents. A litter is sent to fetch the bride. At the bride's home, a spokesman requests that the girl's soul be permitted to seat itself in the litter. This soul (or according to Chinese belief, one of the three souls which every human being has) customarily sits by her ancestral tablet in the parental home; it lives in the written genealogical tree, so to speak, as a little spirit of the house which has taken up lodgings in the family Bible. There is nothing else to do but remove the ancestral tablet from the altar in the house and place it in the litter along with a paper picture of the girl. The procession comes along preceded by two musicians; the one playing a lute and the other beating the life out of a big drum. The two dolls are seated side by side, in the house of the bridegroom's parents. A meal consisting of real and delicious foods is served them and no less than six priests bless their happy matrimonial union. Finally there is a smell of burning: the paper married couple is burned up along with a mass of paper servants,

imitation money, clothing, fans and pipes. Going up in smoke, it joins the dead. . . .

Let the cloud of smoke spread out. The whole mad army fades away in it. The last picture bordered on the humorous. And you are entitled to find some humour again.

You smile in the end. What a lot of nonsense! What unspeakably grotesque hitting beside the mark. How many mad leaps over simple reality. Your smile signifies deliverance. You, the progressive civilized human being, have already emerged from this shadow.

It still is close enough to you.

There are thousands of people round about you who call themselves civilized human beings and who yet are very much in doubt at times as to what is more important for the welfare of a woman during confinement—the simple rules of modern hygiene or a little bat's bone sewn in her pillow. It is the particular brand of humanity of which I said to you once before that there was no question for it as yet whether man was descended from the monkey, because it was not "descended" at all but still was "it." This mass is not the decisive factor. The few just ones turn the scale, as in the legend about Sodom and Gomorra. These three just ones have created hygiene, a scientific theory of procreation and embryology, they have created science in place of fantastic dream processions. They have come to know that love's chariot of the sun runs on the wheels of natural laws that govern universally.

We are only at the initial stage of science here. But it is a beginning. The moment our insight dipped into these veritable mysteries of the doctrine of cells, the relation between sperm-cell and ovum-cell, for the first time, and a little band of light became clear in the evolutionary origin of our apparatus of love, at that moment the genius of mankind actually did triumph over its evolutionary spectre.

Phaethon is not yet riding in the chariot of the sun. We are not travelling on stars like Orion either, merely because we have come to know the first A B C of the law of gravitation. Like a faraway day-dream, the vision is still in the distance that our science, from simply knowing, might some day come to be mastery in the field of love-life as well; that we might be able to intervene actively in the real inner solar course of love, not with beating tomtoms but with the scientist's cool-headed wisdom; that we might steer procreation into infinitely more perfect paths than nature

had found below us . . . to the good fortune of ever healthier, stronger, happier generations!

I believe in this course because I see no gulf between creative nature and conscious man. To me, man is but a step in nature for nature's own ascent. If nature has hitherto builded love with all its wonders, why should not man, who has scaled the heights and struggled upward to science, continue the constructive work? For science is only the beginning of our deeper consciousness, of nature really becoming conscious. What else is the evolution of love, as we have followed it here, but our becoming conscious of ourselves and of the profound evolutionary lines on which we have come up in the world as planet and animal and primitive man—as nature.

It is nature's great entity which thinks back and calls to mind its previous work in us (and undoubtedly in countless other stellar beings at the same time).

But why this process of thinking back? What else can nature's sudden retrospect through the instrumentality of the human brain signify but bethinking itself of and collecting itself for an unheard of and still higher evolutionary move?

Whenever I picture man to myself as a step in nature, I cannot get the idea out of my head that everything we call science, all this incessant boring into the historical, this titanic work of making the past live once more, is merely preliminary work, a moment in which nature gathers itself together before a tremendous battle. Nature thinks back to the nebulæ once more, in order to pierce a totally new layer with the next onward thrust. But at what place should nature make a further advance except the very beings who have advanced this far?

We already see how knowledge develops into mastery to-day, how values of the past which have come to be known to us at the same time become values of the future, how we subject the process of coming into existence to our will because we have learned how from what has already come into existence.

When Phaethon actually rides in the car of the sun, some day, he will be the real God of his love, procreation and birth as well, God in the sense of man having finally learned to cross the ocean in a ship and traverse the air in a balloon by his own strength, after he had waited impatiently and long enough for a mystical super-world to carry him on its nereids' floats or angels' wings.

"Natural" becomes the last great magic word, the thoroughly successful one with which seeing nature finds itself.

A tremendous word.

It is the Antaeus word with which man finally touches the earth again after his intellect has had a holiday during the great work and turned somersaults till heads were cracked and bleeding.

The moment this connection is made, imagination, from being an intoxicated naked savage woman who cuts off her breasts and drives wooden plugs through her nose, becomes a wise seeress, who reads in the stars of love like that seer who calculated the existence and whereabouts of the planet Neptune when no human eye had yet beheld it. . . .

§ 2

Love! Seek! Smile!

Those are the three great imperatives that lead to God, . . . to the divinity in nature, to harmony on nature's great road, . . . the three words of reconciliation with life. How well we could get through a whole life with these three saving words. With "Love!" we would master the future for as much work as is apportioned to us; with "Search!" we would master the past and in it the future once more; and with "Smile!" we should get over the petty hardships and annoyances of the curious cross-road of the present.

This last is the hardest thing to do, the thing that keeps on being almost impossible.

How harmoniously and beautifully the course of the world shines forth everywhere, when one looks at it along the large lines of the past, in terms of millions of years, in cosmic perspective. And how still more ideally, easily and harmoniously does longing fly on golden wings over the blue sea of the future.

But there is something like the realm of a kobold in between, in everyday life. It causes irritation in small things and in large matters, comedy-like or tragically, as the spectre of fate's utter senselessness.

In reality, this is merely the tangle of evolution's crossing strands, unfortunately seen in small cross-section.

But wherever you unroll world history you likewise encounter this imp of mischief. It is the fish-bone on which a genius chokes to death and the slippery spot on a plank on which the victor slips at the moment of triumph and plunges to death.

Man's love-life too has its imp. It is one of those things that are gotten into the bargain, coming from a totally disconnected quarter and incalculably touching man's clean course, as a comet does according to old popular belief. The happy peasant drives his cattle out to graze. A comet suddenly appears in the sky and hurls down pestilence as if the universe were making game of all logic.

Human love-life has its original imp, expressly invented to play

its dirty trick on man in love's flower-garden. No other being on earth possesses this particular kobold. Nevertheless the postulate for it, its ideal breeding-ground, so to speak, can be studied quite well in animals.

You recall the little green fresh-water polyp, whose amusing love-life we discussed before. This green hydra has a very strange property, which touches on a chapter by itself.

The green colour of its body caused scientists to rack their brains for a long while. The hydra is a genuine animal, closely related to the beautiful blue jelly-fish of the Baltic and the gay animal blooms of the coral reefs. But the green of this undoubtedly animalistic being is produced by a genuine plantlike method. It results from so-called chlorophyll. Chlorophyll is the characteristic colouring-matter which plants produce when they have the necessary light and the necessary iron, and which plays an extraordinarily important rôle in their whole vital economy. From time out of mind, chlorophyll has furnished painters and poets with the picture of "green woods," "green meadows" and "green chaplets of leaves." It practically coalesces with the idea "plant" in the colourful picture of the earth. And yet the hydra, which is an animal, is green as the result of such vegetable green being contained in its skin. For a long while an attempt was made to solve the question under what special circumstances an animal, whose whole mode of nutrition and chemical basis of life was so radically different from that of the plant, might be able to produce vegetable green chemically, till at length the solution yielded something fundamentally different. The polyp is neither a plant nor does an animal create vegetable products contrary to natural law in this case. The "green hydra" is simply a mixed product, on the score of its green colour: in itself it is a non-green animal, in whose skin green plants have quartered themselves.

Imagine that your hair suddenly turned green, and that it was ascertained under the microsope that a firm fabric of little green plants growing rankly had been wound around each one of your human hairs and had produced chorophyll-green hair on your head. Incidentally, there really is a case of the kind among genuine haired animals; namely the sloth, in whose fur green algæ habitually flourish. It is an even more intimate matter in the case of the hydra. It is not a very low animal, since its body consists of a mass of individual cells, which are all animal cells nourished in

animal fashion exactly like the cells of your skin or intestines. Where these cells in the polyp's body show green, alien cells, which in themselves have nothing to do with the polyp or with animals generally, have smuggled themselves in. Each of these cells represents a single, very tiny but entirely self-contained little plant, an alga belonging to that lowest group where the body has not yet passed to the many-celled stage but consists only of a single cell. This single cell, however, is a regular "plant" and is therefore able to produce regular vegetable green colouring-matter in the kitchen of its body. Like the rose which adorns itself and the garden as well, these little plants, by making themselves green and quartering themselves in vast numbers in the polyp's inner layer of skin, make their garden, the polyp, grass-green.

This process of a permanent living union between different organisms is called "symbiosis," which literally means "living together." In this case it is highly probable that the relation between the two creatures, polyp and alga, is a very comfortable one. The little plants, which lead a parasitic life in the animal's skin, obtain a secure roof over their heads. The two comrades have contrary modes of respiration, therefore each exhales what the other can use: the alga spits out oxygen as its respiratory excrement and that is the very thing the polyp can use. It is quite certain too that the green plant-colour is useful to the polyp as protective colouring and in hunting food, in connection with its shape on the aquatic plant to which it fastens itself, making the polyp itself look like an innocent little bud.

But in any event and no matter how far that may hold good, the algæ have carried their dependence on the animal to the peak of possibility. This particular variety of alga has entirely given up trying to get ahead independently outside of the polyp. Probably from time immemorial it knows no other place of residence on this whole earth than the bodies of ever new generations of polyps. But how does this alga manage to keep on getting into these new generations?

The earlier observers who still believed the polyp itself produced chlorophyll and who therefore had no suspicion about the algæ's parasitism always regarded it as grist to their mill that the young polyps growing up out of eggs invariably became green as well. Producing green was simply supposed to be hereditary in the polyp tribe. How to get around this point seemed a hard nut to crack

when the algæ were discovered. It was now supposed that the algae fell upon the infant polyp with a ravenous appetite every time, in order to upholster it in green. But where did they come from? Scientists looked in vain for the necessary algæ which were supposed to be lying in wait in the water where the polyps were hatched out. As a work of supererogation, polyps were placed in an aquarium which was kept scrupulously clean and was absolutely free from algæ, yet grass-green young ones hatched out by sexual generation.

The final solution of the riddle was that the algæ crawl into the eggs in the polyp's body and are transmitted in that way. As a regular thing the algæ are lodged fairly deep in the wall of the polyp's body. When it produces female eggs, the polyp has the property of making them sprout like warts out of the outermost layer of skin. As soon as the polyp is engaged in this, green algæ bore ahead where the eggs are, and crawl bodily into them; and while the eggs are being fertilized and new polyps are developing in them these algæ lead a busy love-life of their own in the eggs and nascent polyps, increasing and multiplying hugely by simple division according to little Rumpelstilz's original practice, until in the end they have put a very intimate secret shirt of their vegetable green on the finished new polyp. This happy faculty finally enabled them to give up an independent life in the water entirely and confine themselves to their polyps.

You can easily think this out somewhat further. Imagine that the relation between the polyp and its algæ were not such a pleasant one as it appears to be. Say that the algæ inside did not merely give off agreeable oxygen, which the polyp likes to drink like champagne, but likewise some excrement of a loathsome character, which goes against the polyp's grain. The polyp therefore got the worst kind of a stomach-ache from the creatures that coloured it green, and this might make its whole life miserable. What was to be done about it? The polyp had them in its stomach. Every child that it procreated inevitably got them in the stomach from the parental body. An endless screw of torment. Of course the succession of algæ would come to an end if the succession of polyps ceased. With all polyps dead, all tormenting algae would be dead too, since they could no longer exist outside the polyps in the open water. But that would have been equivalent to Dr. Eisenbart's cure of a bullet through the head for toothache.

If such a polyp could think and express itself as we do, it would curse the day that first bestowed these horrible algæ on its forefathers. It would call this invasion by the green devils the kobold of its life. What a hellish chance must have produced such an improbable combination as a being from a totally different group, a one-celled plant, smuggling itself into it, the many-celled animal. And not merely into it as an individual but into the seat of its immortality—into its love-life. What had its own love-life, which it had attained with difficulty, to do with the love-life of the algæ and their intention of increasing and multiplying, which was a matter of total indifference to the polyp? And yet those algæ presumed to make life miserable for it and its children and grandchildren by continually discharging their excrement into the holy of holies, as it were—a stench and abomination without end, causing the polyp to curse its own love-life. . . .

I am telling you the story of syphilis.

This thinking polyp is man, to whom this very thing actually did happen approximately in this way. Syphilis is the thrice cursed kobold of man's love-life.

Syphilis is not a given quantity which is calculated in the inwardness of mankind's love-life. Man's love-life contained all possible limits and shadows and marks of evolution. But it contained not a trace of the following possibility. A pair of human lovers unite. They consummate nature's great act and fulfil its whole purpose. A child proceeds from this act: but the act is simultaneously a fatal poisoning process. A corrosive poison, frightful as Philoctetus' in the Greek tragedy, has leaped over in the act, as an electric spark jumps from metal to metal. And this poison not only springs from body to body, from one loving individual to the other, but it also eats into the man's microscopically tiny sperm-cells and the woman's ova. The child grows up diseased; poisoned in the moment of procreation; and the poison rolls on through generations.

In the most beautiful love-poem in the German language—his Roman Elegies—no less a person than great Goethe gave a classic description of the abrupt, demonic and paradoxical nature of this utterly isolated phenomenon of human love-like. This "Syphilis Elegy" is missing in all the earlier editions of Goethe's works and omissions were made from the original manuscript when it was

included in the big modern Weimar edition. The principal part reads (unaltered):

Dangerous serpents twain, abused by the chorus of poets,
Filled with horror, the world has known them for thousands of years,
Thee, Python, and thee, Lernæan dragon! But ye were
Slain by the vigorous hand of Gods active in deeds.
Ye no longer destroy with fiery breath and venom
Herds and meadows and woods, nor golden crops any more.
But what inimical God has sent us in his grim anger
This new monster, born of foul and poisonous slime?
Everywhere it creeps in, and the malignant worm lurks in
Loveliest little gardens, seizing on those that joy there.
Hail, Hesperian dragon, thou at least wast courageous,
Daringly thou didst guard the treasure of golden apples!
But this foul worm defends nothing; wherever it is,
There the gardens, the fruit are not worth any defense.
Stealthily it winds in the thicket, defiles the pure well-springs,
Foams, and turns into poison Cupid's life-giving dew.

To this day historical research has not discovered for sure what "hostile God" in history actually did send us this impish monster. One group of competent judges assume that the date of this scurvy trick was four hundred odd years ago, at least as far as our Old World civilization is concerned. This dragon's brood is supposed to have been suckled in America, and Columbus' soldiers are supposed to have brought it back as one of the new continent's first gifts to us.

More important is the fact that we at last begin to know what this monster really looks like and to what department of natural history it belongs. Syphilis is a disease which results from a conflict between the human being and one of those protozoans which still persist at the stage of a single cell, of a Rumpelstilz in our tale about the dwarfs. A life and death struggle going on in the human body itself, behind this terrible apparition: at the heart of it lies the ill-fated entanglement of two love-lines of life on earth which are totally independent of one another.

On the one hand you have man, a many-celled animal like the polyp, only incomparably more highly developed. On the other hand you have a one-celled creature belonging to the lowest forms of life and so tiny that it taxes our most powerful microscopes to

the limit—the germ of syphilis. These contrasts meet one day. The big lofty being at first takes no notice of the tiniest of the tiny, for he does not see it. But the Rumpelstilzes go for him. They quarter themselves in his interior. They bring about frightful conditions of mismanagement and flood their hotel with gigantic quantities of destructive refuse, until the giant at length sees himself dragged into the matter after all and notes to his horror what is going on inside him.

The same highly ingenious thing has happened here as in the case of the polyps. These invaders have entirely given up leading an independent existence outside the human body. They have staked their all in the most daring sense on the human animal which they have discovered. They have transferred their entire love-life, which is extremely simple in the case of the unicellular beings, into this human being. In so doing, they quite logically encountered the same problem as did the green algæ in the polyp. It was necessary to spring over from one human being to another and from each human generation to the next. Something of the sort had to happen in order that their love would guarantee the immortality of the species, for the death of their host would invariably mean their death as individuals, even though they loved and increased and multiplied like the sands of the sea in this individual host. This was the point at which man's love-life became important for them.

They encountered two great facts in their host's love-life. Firstly, the primeval sexual form of reproduction, which the polyp already possesses: a sperm-cell and an egg-cell become detached from the respective partners in love and fuse, with the result that a new human being of the next generation comes into being. Secondly, that complicated method, which the higher mammal achieved; of the two big cell states placing themselves together and the male love-member being introduced into the female love-gateway with attendant excitement of sensual pleasure—those matters whose evolutionary origin and development up to man we discussed exhaustively before. Both of these facts were now consistently exploited in the syphilis germ's fight for its own immortality.

Just as did the algæ in the polyp, these colonies of protozoans sent small parties of emigrants into the egg-cells and sperm-cells of the two partners in human love, in order that they might slip into the next generation and be the imp in man's love-life for all eternity.

At the same time their main army took up an advanced position directly at the genitals as the most probable places from which they could successfully execute the leap from human being to human being —the simple somersault from skin to skin. It was much like posting men at the head of a landing-stage for the purpose of boarding a ship. Even though the ship in this case belonged to the same generation, a headstart would be obtained. Wider spacial distribution ever offered a chance for temporal immortality.

And you, you hapless mortal, get right into the thick of this combat if in a fatal moment you happen to give yourself up to the arms of a human being who has already been invaded by this invisible army. No matter whether you are animated by the holiest and purest feeling of love, desiring nothing else than to save the immortality of mankind once more and carry the race of Goethe, Raphael and Darwin one generation further and whether you are acting on the noblest impulses of individual choice, in the midst of your sunny love you suddenly become the means for a totally different longing for immortality to attain its end; your organ of love becomes the mainstay of primordial gnomes of evolution which are totally indifferent to you but which play politics for their own selfish ends, the fatal tangled ramifications extending clear through you. . . .

That is the comedy, the tragedy and the tragi-comedy of syphilis.

There is a lofty vantage point from which you can see this satirical drama take its proper place in a great line of evolution. Probably there is a profound and extremely significant vital struggle on our planet behind this whole conflict between man and the unicellular being, which plays such a tremendous rôle in our life otherwise as well. The highest and the lowest form of life clash once more in a last, decisive battle. On the one side is man, the peak of evolution going up by way of the many-celled being, already lord over all the many-celled beings on earth. And on the other side is the original form of all life, the first adaptational form of life on this earth, continuing to live on in myriads of individuals to-day, hordes of individuals which keep on overwhelming those higher beings with their vital dust until the danger is imminent that they will drag down everything that has risen above them to their own dead level again. The imp of mischief in things acquires a titan's face here. Man's last and hardest fight for the mastery of the earth becomes visible.

Victory seems to be trembling in the balance when blooming human bodies fall like sheaves mown down by a terrible epidemic caused by bacilli, like the pest or cholera, and when a protozoon which is so tiny that it can live in the corpuscles of the blood can depopulate whole regions as the germ of malaria. But a simple train of thought indicates the final result of this fight: the few intelligence cells in human brains are holding their ground against this simoom of primordial life with its myriads of cells, they are stopping its advance and in the end they will render it harmless. These intelligence cells establish a science of medicine, they invent microscopes, they consciously discover their foes and the latters' cunning possibilities of transmission, they throw up dams to keep these monsters back, destroy their bridges, starve and smoke them out and summon all the mysterious protective forces in fundamental nature as allies, and lastly they follow Cato's old dictum, *Carthaginem esse delendam*, by attempting to exterminate the whole race. This affords an Archimedian fulcrum from which the earth can be moved. The old means of the gods which these littlest creatures enjoy in earth, air and water—invisibility, omnipresence, and the deadly power of mysterious poisoned arrows seemingly coming from the blue, will all come to nothing against the greater divine force of intelligence, just as old Jupiter's thunderbolts would come to grief against our modern lightning rods.

This is decisive in principle for the "eternal" kobold of man's love-life—syphilis.

Syphilis has undoubtedly done humanity very grave harm, practically as well as ideally, from a certain point in history on, which still remains dark.

It injected an element into all love-life which proved all the more fatal because in its very nature it was really nothing but a poor practical joke on nature's part, a stupendously idiotic addition to man's love-life which did not belong in it for any inherent reason whatever. It was not only the physical harm that brought unspeakable sorrow on us; almost equally bad was the purely mental and spiritual harm which was bound to eat into our entire conception of love.

On the one hand, syphilis became most intimately identified with prostitution in the general picture of human love-life.

Nothing was more natural than that it would gain a foothold

here, where the sexual act was removed from the influences of all finer selection, where one act indiscriminately followed another in the wild ecstasy of eroticism and a sick individual could become a bridge to countless healthy human beings for the invading army of protozoans to pass over in the mad haste of changing partners at random. Once syphilis had become localized here, it conferred a new and frightful power on prostitution, pursuing its old harmful course; a positive power, whereas before, prostitution had worked only negatively.

You will recall that the danger of prostitution consisted in the fact that it served to check individual selection in love and, above all, that it excluded the child. But prostitution did not really triumph along this line; genuine sexual love, with its individual selection of noble qualities, which went to the ultimate goal of having children and saved true progress for humanity, remained victorious beside prostitution: the mother in the highest sense kept on triumphing over the sterile pleasure-ant.

Syphilis brought about a radical change in many respects.

By becoming a hotbed and a pure culture of this protozoan invasion, the prostitute projected herself actively into the circles which hitherto had been pure. In countless cases, she poisoned a man at their brief chance and inwardly insignificant meeting. And when this man returned to a higher sphere, what was pure and sacred in love-life was turned into the satanic element: he ruined the genuine woman, who was ready for maternity, and hurled early death or subtle corrosive destruction in a hundred different forms into the new generation which was procreated and born.

A certain tragic fate lies in the fact that in our civilization, in the overwhelming majority of cases, a young man entering upon the years of love must come to know the prostitute before he does genuine woman. He gives his first erotic springtime to the prostitute. Our social conditions continually crowd him in this direction, and as things are to-day it can almost not be otherwise. Woman as such is for the first time shown to you in her physical entirety by an example of the lowest imaginable degeneracy; and every ideal is first trodden into the mire with the utmost brutality. Ask others about it, and see who has not had this experience. Sexual maturity's imperative demand, the old, sacred, primordial law that "now woman must come to you, the man," was made on the noblest, the best and the healthiest. And iron social barriers, erected by

a thousand different kinds of heritage, hurled you away from the genuine woman and into the gutter of love. How few men's memoirs lack this particular page: the first hour when they gave themselves up to a woman, to the other half of our human life, to the great, eternal feelings of immortality, for which nature had gathered and worked and saved during millions of years and for which it had finally made you mature; and then you come to know "woman" in the most brutal, perverse and filthy form which our whole civilization still possesses, a woman who is not even a human being in the civilized sense.

Life is not perfect. We make the best of it. If there is any power in ideals, they must be able to continue giving birth to themselves even out of dust and dirt. Therefore you wrestle with the problem and one day win a genuine woman after all. You rightly feel that you are innocent, for you merely had to pay the penalty for a temporal state of social confusion. A real man does not whimper in such a case; he redeems himself by a new and better deed. Remorse is the sole sin in life, as the poet John Henry Mackay so profoundly and truly says.

But the most diabolical intensification sets in at this point. In very many cases, physical contact with prostitution, which you shook off spiritually like a loathsome dream and from which you liberated yourself and were mentally clean in your waking consciousness, poisoned you physically; those cursed protozoans conquered you at the time for the benefit of their love-life at the expense of your own. And this fact governs with inexorable consistency: henceforth you have the ghastly possibility of carrying death and destruction into your ideal, genuine and noble love.

One reaction from this was that the tragic lot of the prostitute herself became intensified in the extreme. It was only from this angle that the utter curse of being a poisonous plant became attached to her; in self-defence, man ruthlessly trampled down the last remnant of human dignity in her because of this abominable possibility, for which she was just as little to blame as for her whole existence. A brutal, compulsory form of medical control was put in force over a single social class, while all other strata of society refused to submit to anything of the kind. Connected with this in turn was the defence of the brothel, where the vilest slavery continues to exist in the midst of our civilization, as against individual prostitution.

The net result of all this was a cloud over all love, casting its shadow into all ideals.

Startled imagination had long sought all manner of terrifying demons in love's paradise. And at this spot a real poisonous serpent now came crawling out of the flowering hedge. Was not love actually a sin, was it not the work of the devil, was it not accursed, when such a disease could go hand in hand with it? When lovers sank down under its scourge as if in a hail-storm, while a youth who had never been in sensual contact with a woman and a virgin who remained pure throughout her life persisted in immaculate cleanness of body (assuming that the curse of parental sins had not been visited on them), was not all "genuine" love of the senses as well only a trap of Satan's, which lured man away from the deeper laws of God in nature, and was not the true sense of this that man must practise absolute continence, in defiance of all the body's desires? The whole ghastly conception of "sin" as applied to love generally, this primeval demon in humanity, again drew strength from this, as from Medea's magic kettle, to sow spiritual poison in tortured brains, which proved more devastating than the wandering protozoans of syphilis.

But God's help is nearest when need is greatest. The divinity in man can only be downed by itself, and not by an "imp of mischief."

If there is anything written in the stars about our love-life, it is the complete conquest of syphilis by ascending science, the defeat of the protozoans by the cells of intelligence in our brains. The line of march to victory is indicated for us with absolute certainty, ever since we even approximately know what sort of an enemy is involved.

Syphilis will not be annihilated by philosophy nor morality and not by direct social factors either, but it will die through the progress of medical science as it already exists to-day. It will die just as tuberculosis, the pest, cholera, diphtheria and malaria must one day die as the result of hygiene's precautionary measures.

One could very well enter into a theoretical discussion as to how it might be killed by compulsory means which would suddenly surround and cut off its entire reserve army and starve it into submission. If all the fifteen hundred million human beings on earth were subjected to a medical examination and all those suffer-

ing from venereal diseases were isolated for a time and cured, the protozoan in question would be definitely dead. It would join the extinct animals, the dodos, the mammoths and the ichthyosauri. Serum diagnosis has made it so easy to determine the existence of an infection, that this phase of the problem probably is already capable of solution.

The practical impossibility lies for the present in the concept "all human beings," and how to get hold of them. No lists are in existence according to which all "humanity" could be summoned before a medical tribunal. Many would be missed because of the failure of these general hygienic summonses to reach them, and this not only in the unexplored jungles of the Congo or the highlands of New Guinea; for I fear that even in our big cities, which have been most thoroughly explored by the police, a large percentage of humanity would prove to be officially missing, without giving up life and love-life together with the involuntary culture of germs in their own bodies on that account.

But in any event you can imagine that this will become possible at some time in the foreseeable future, if it should prove to be absolutely necessary. Our ideal of "humanity" guarantees us that this whole confused and turbid flood must one day become a single transparent crystal, whose light will actually shine into every nook and corner to good purpose. And there can hardly be any doubt that when humanity really becomes united, it will also be able to carry through certain uniform hygienic measures, if the weal and woe of human progress is at stake, and this without having to raise the spectre of universal compulsion imposed by the state. But a direct cure will probably have been found long before then, and once it is on hand, the ailment will itself drive each individual case voluntarily to seek to be cured, without necessitating any law of humanity to that end. When that union of genuine "humanity" does exist, this simple logic of identical wishes and desires will in all probability have made all actual "laws," which have to be enforced by compulsion, superfluous.

It will no longer be possible for such crude imps, as those protozoans were, to exist in the future, not a wholly illusory distant future but the future which is evolving with simple logic from our beginnings which are already visible. When man is lord of the earth, he will also be the master of syphilis. One will read in books about a little intermezzo in human love-life, which

stalked in this form for a number of centuries. But the matter will be "historical," in the sense of being done away with.

In the legend, the spook in the end throws Doctor Faustus against the ceiling with such force that his brains remain sticking fast to it, a poor grey mass helplessly spattered there. We know how the same thing is still happening all about us; how this imp of Satan lurking in love is still battening on human brains. But in the end this brain will one day overcome the stupid old devil and hang him on the ceiling and let him wriggle until he has exhausted himself.

§ 3

What more can man gain in this life than for
God's nature to reveal itself to him. . . .

It is midnight, and a dull racket sounds through our old cloister. The smoked walls crack, and boring insects tick in the decayed wooden panelling, and a night-bird is calling at the window.

But a distant melody is humming over all; chiming bells. Those are the good spirits of love, singing around the house. They are once more singing their song about man in the frosty, starry night.

"Peace on earth."

It was in such an icy winter's night that man was born again into his higher and decisive civilization, like one thrust out, who comes into the world on a bleak field. The fiery days of his huge planet's youth were over; it had become dark, and distant worlds became visible above it as stars. The diluvial ice-age came over it like a feverish chill; but it was the fever accompanying birth. It had poured all its solar heat into the one being—man. Rise up, you little human being, and behold the stars above you and meditate on them and on yourself! Henceforth you are the spirit of the planet. Bear its light and bear its darkness.

Infant man was no longer in paradise, and lay naked on the hard ground. But he had drunk all the primitive forces of nature from the earth's breast; creative imagination, which has the power to turn its longing into concrete reality; iron logic; and the miraculous force of love and procreation, which is forever giving birth anew to a different human being and yet at heart ever the same one.

"Peace on earth!"

The midnight bells are ringing and when their brief song has died away our talk about love will be at an end. But one last thing still must be said.

There is one last fight to the uttermost which love has waged with man, and which possibly will continue for a long while with

ever new crises; the hardest one of all, worse than the fight with the Phaethon of imagination and the imp of venereal disease. Mighty as love was, it had to wrestle with what was greatest in man, and wrestle in the old biblical sense "until thou bless me."

The highest thing, the thing that was most his very own which this son of earth possessed was after all his thoughts, his reason his intellect, in the profoundest sense of thinking about the world. It was with this spirit of thought that love was engaged in its last life and death struggle, and still is. Man is Faust, who has recognized that in reality God and the devil are not wrestling for his soul, but that it is he who is wrestling with himself.

Two gigantic figures arise out of the billowing sea of human thought; a regal woman, conscious of her triumphant and yet chaste nakedness; and a man with dark eyes and a flowing beard, as Michelangelo saw Moses.

The woman speaks: "I am love. I am the highest that there is, for I maintain humanity's existence in the wild hail-storm of the grains of sand that run through time's hour-glass."

But the man raises his gloomy eyes and claws his beard and says: "Is humanity worth being maintained?"

It is the question of love's destiny at the stage of man.

"It were better man had never been born." If that is true, if it is the brooding intellect's highest truth, then the sentence of death has already been pronounced on love and executed. Love is dead.

Here is an old picture. The teeming earth is resplendent in its beauty and luxuriance, it is glowing with love and resounds with music. Flowers scatter their fragrance, palms are waving and silvery springs plashing. But the naked desert extends behind the sunny woods, and jackals howl there, and sand-coloured poisonous otters stick their heads out of the ground, and the hot dust moves ghostlike in red clouds through the wilderness.

Suddenly man appears in this wilderness; the same man who has been leading a luxurious life over there, and the last faded garlands that crowned the reveller are still clinging to his hair, and his garments exhale the last of the intoxicating perfumes within whose magic circle beautiful women gave their love.

But his clothes are torn, his hair is dishevelled and he has a wild look in his eyes. He is a refugee seeking solitude. He plunges into the Egyptian desert as some one who is on fire would

plunge into water. This world is accursed! Down with it; away with it! Out of it all, away from love, away from humanity, into solitude among the naked rocks!

All is vanity!

Save thyself, save thyself!

He hurls himself into a horrible hiding-place, which a band of counterfeiters had once selected as a hole on earth which was as concealed from the world as any place could possibly be imagined. He crawls like a hyena into the vault of an ancient abandoned grave. Serpents hiss around him, and the ceiling is so low that he cannot stand upright. But this is the very thing that he wants; he wants to see nothing more except what is abjectly wretched—nothing itself.

The world that makes him shudder is tenacious, to be sure. It accompanies him in his thoughts.

Night is brooding over the wilderness; hot night in which the stars burn red. And the walls of the crypt open before this living man who is lying in its dead putrefaction. Demons come, and serpents, and a roaring pack of lions, bulls, wolves, leopards, bears and scorpions. Herculean human shapes come plunging ahead and beat the hermit, this accursed "living creature," to a pulp. Howling and lamentation and jubilation fill the air outdoors; children crying, and the bleating of endless flocks of sheep that keep passing by, and the roar of oxen, and the tread of an army passing in long columns. Now the moon rises spectrally pale, and a team of runaway horses, dragging a wagon and making an insane racket, comes plunging straight at the persecuted individual: his panting breast is just able to utter the one word "Jesus," and the ghostly visitation sinks into the earth.

But as he tries to breathe freely again, this earth gives birth to something new: banquet tables, groaning under exuberant fare, rise out of the parched desert, and golden wine flows, and beautiful naked women with unloosened hair and moist glowing eyes and the intoxicating aroma of amorous spices descend from couches, and come toward him. . . .

Bathed in sweat, the anchorite flees straight into the desert But hell presses on his shoulders, and a shadow lies over him: a spectre is sitting on his back and riding him as the lion rides the hunted giraffe, and its ghastly laughter rings through the desert stillness.

This world cannot be killed off. It is attached to the organs which the fugitive brought along with him; and the organ of love is the worst offender of all. And so the ascetic resorts to the knife, and castrates himself, and puts out the sexual individual in him. When the organ sinks down dead, like a venomous animal which has finally been killed, the spirit down there will be murdered as well. And then liberated thought can at length pray and sink itself entirely in the new sense that love is Satan; for love maintains the existence of man; but man is woe and wretchedness; man whom the love of the senses makes eternal is man the eternally damned; only when men die, and die out entirely, will this tremendous phantom snare and delusion come to an end, and this wretched world will sink into the desert ground as that mad wagon vanished. Humanity is not God, that is a fatal belief; God is where there are no human beings; God is in the wilderness, not in the world; the world and humanity are only Satan's veils which hide God; only he who tears these veils will finally return to his home in God.

That is an old picture, dating from the days of Constantine, and the age of Saint Pauls and Antoniuses and Hilarions more than fifteen centuries behind you.

But now let us take a modern thinker. His manners and appearance are refined and elegant; he is manicured, and has a beautiful intellectual forehead. He has enjoyed the world with moderation, and he has always looked at it with the clear, cool eyes of the seeker after truth; he looked at even the most beautiful woman through spectacles, and was particularly proud of his clarity of thought. He is sitting in his workroom and rests his forehead on his hands. The life of the big city is roaring outdoors, but all is peaceful within. Bright sunlight glints on the gifts of art and science, notable paintings, the busts of high-minded thinkers, and the shining rows of a wonderful library, in which his fine intellect is everywhere at home as a king. He had not gone rollicking through the world in the enervating intoxication of wild women and clinking glasses; nor is he fleeing into the wilderness. For where is there any "wilderness"? A map of the world is hanging on the wall, and all around it is the boundless universe, this hollow globe of space without any top or bottom. Here, there or anywhere, and whether you are a voluptuary or an ascetic, you are in it past saving. You cannot even get away from this little earth.

Earth thou art, whether you are living or dead. Therefore stay quietly here in the big city of the north, instead of making a pilgrimage to Egypt.

And yet this sage of a young day which is clear as the morning likewise stares before him through his spectacles. And he thinks: you were right in your innermost heart after all, you hermit of the serpents' pit in the wilderness. This world is vanity. Humanity is a curse, it is nonsense. It were better that it died as quickly as possible. If it must live, life is only torment eternally renewed. I at least will do nothing to make man continue to live. I am not saying this suffering from headachy depression following an orgy the night before. I am as sober as the grey sea of houses out there, in which so much misery is concentrated and yet where all the people really do calculate coldly, and always are only coldly calculating. I too have figured things out. And I say: a curse on love! And I say this coolly, from the bottom of my heart.

In both cases love was the negation of that which is profoundest in man—his philosophy of life.

In its extreme ideally intensified form, love suddenly seems coined in one phrase. This phrase is "affirmation of the world." "Negation of the world" rings crystal-clear against it out of that other philosophy. That is the final but also the supreme antithesis.

A philosophy of life is the supreme value in humanity. It definitely separates man from the animal. This concept constitutes the complete declaration that man has come of age. With it he enters upon the true mastery of the world. He is no longer a subordinate, but becomes a free citizen. Hitherto he had lived, because it was a tradition to live. From now on, he lives because he wills to live. The man who acquires a philosophy of life and adjusts his life accordingly is as one before whom the rustling trees of the Garden of Eden part; go out because you will to go; there lie the broad acres which are to be tilled; take your guidance into your own hands, be a free man and seek; it is not always jolly to be free and to be a man, but in return you will have the tremendous satisfaction of owing your victories to yourself from now on—to yourself, seeing man, seeking himself.

Man, who had been let out of the paradise of the old instincts, had only gone a very short distance through the thorns with his new vision when he came face to face with the most important of all crossroads.

Should he appraise the world optimistically or pessimistically on the basis of his awakened free consciousness?

Man's entire greatness appears in this moment of choice. What tremendous circumstances were involved in this choice! This world had invariably been affirmed without ever a question in an unbroken continuity for æons of time, as far back as we can see at all, from the time when matter in our universe first collected into coherent masses. This suddenly becomes a matter subject to debate for man. Negation of the world appears in all seriousness to him as a possibility, in opposition to affirmation of the world.

And now if it follows from man's philosophy of life that existence is a false fatal reckoning, which leads to nothing but evil, why go on consciously with the calculation of this devilish example?

This way of looking at things immediately involves love. The devil take the immortality of the species. That is the very point at which this eternal calculation must be systematically trampled to death and wiped out of existence figure by figure.

Never before had love faced a situation such as this; not in the entire chain of man's ancestors—nowhere below him. Love too was a product of world affirmation—perhaps its most ingenious product. But what next? Something totally new started here. At the very moment when man's awakened intellect should have become love's ally, the uncanny possibility appeared that man would cross love out with one thick stroke of his philosophy of life. . . .

You must admit one thing in this connection. We continually granted a certain absolute value to the future evolution of humanity in the course of our conversation; the value of a line of development which was absolutely continuing and whose great ideals were already visible. We counted on the result being already fulfilled, as it were. In this sense, you must consistently admit the ideal existence of the greatest thing of all. You must admit that all human beings would gradually become mature enough to have a philosophy of life. And you must further admit that in the case of all these human beings, their philosophy of life will in the end come to be the same power as it has hitherto been in the best of men: man's absolute imperative extending to the decision about life and death—a power which does not merely comprehend, but which also determines the course of things.

If the philosophy of life which will be dominant one day could only be a negation of the world, humanity would undoubtedly be strong enough on the day of that recognition and domination to lop itself off from the tree of the universe.

Human love, the supreme flower of love which is known to us, would be dead on that day.

Our love-story would end like Werther.

You must grant things the power of fulfilling ideals, provided genuine ideals are involved, even though they be ideals in a purely negative sense.

Pessimism as a philosophy of life has been breaking out in humanity for thousands of years, like a band of wild Norsemen on their Viking ship. But in so doing, it took on two fundamentally different forms.

The one is dualistic and the other monistic at bottom.

The one is only conditional pessimism; the other is absolute.

The first and older form, and yet the liver one of the two even to-day, proceeds from a dual thing: firstly, the "world," and secondly, a realm of redemption behind this world.

The world is a vale of tears; whether it be the work of the devil and represents a defection from God and is caught in the snare of sin; or whether it be a trial which God has instituted for man; or whether it be the creation of a dark "will," lying outside of all concepts of God and the devil, a tremendous blind principle in nature, which in any event is an evil principle, leading to nothing but confusion.

There is a second world opposed to this world, and there are various definitions of this as well. Some call it God, heaven, paradise, and bliss; others call it Nirvana, "nothingness," in contrast to the other bad "existence." But in any event, this second world is a blessed one; even when it is defined as "nothingness," it is a sweet nothing. Our wretched existence wrestles to attain this bliss, but can only do so by means of the utter and complete annulment of its own self. To kill the world in ourselves is the road that leads to bliss. Abandon all pleasures of the senses, for they are not true happiness; they merely serve continually to lure forth that bad world. Above all, cast off love in the sense of a procreating, creative principle in the world, a principle of immortality in this world. What does this immortality amount to? It is but

the immortality of misery. Go into the wilderness, conquer the world even in your dreams, and sink completely into that other world. By so doing, you will return home to a better order, you will be redeemed, and you will sink into blissful Nirvana or you will pass on to God and his heaven.

This doctrine is only conditional pessimism. It recognizes deliverance as the ultimate end. One day the whole world will become so wise as to deny its own existence and will vanish into that sweet "other world." Therefore a ray of optimism always remains for the individual as well as for the world. A form of "evolution" does remain, even if it is a retrogressive one from the world's standpoint, which will evolve the world down to nothing again.

Even so, its attitude toward love remains decisive for us. Love, which generates life, is ever the mortal foe of that deliverance. Love is the blackest spot in this dark world; it is the very antidote to all bliss. It is the greatest hindrance in the way of that sole, true evolution.

The other form of pessimism is incomparably more radical. Only in this form does it grow totally pitch-dark over existence, forever and everywhere.

The basis of this view is monistic throughout. There is only one fundamental fact, and that is this world. Nothing ever passes out of it, and it can never cease to exist. A blind will of nature, which holds sway as natural law in matter, dominates this world; but this time there is no deliverance and no escape from it anywhere. Its fundamental characteristic is absolute senselessness. The world is an eternal chaos, rocking back and forth from eternity to eternity. Among the countless chance possibilities it does happen occasionally that a number of waves that run smoothly and harmoniously form by chance in this chaos: a seeming start in the direction of harmony fraught with meaning does make its appearance as a special case in the endless ripple of chaos. The "semblance" of an upward evolution develops as in the case of our solar system, and on our earth, where such a line has managed to extend upward to intelligent beings. But even this little stretch of the road is bought at the price of unspeakable misery and insanely intensified pain; it is birth entailing the torments of hell. And yet the unalterable fact is that on the whole it is only a still birth. Just as the dead indifferent earth swallows up every intelligent individual being

after a brief time, so will humanity as a whole perish after a certain length of time, and life generally, and even the brief harmony of the solar system, sinking into chaotic, original matter again as the result of catastrophes, the crashing down of planets, the sun's death, universal cosmic freezing, and the end of mechanical work.

" 'Tis just the same as if it ne'er existed," Mephistopheles rightly says.

The utmost that might be attained in this world in the way of seeming stability and permanence of evolution would be at a pinch a (likewise chance) combination of things at some point in the universe, which would express itself in the "eternal-recurrence of the same thing." For instance, the collapse of our solar system, with all the dead planets plunging into the cold sun, might give that dead heap of matter the original impetus which would make it become an original gaseous globe anew, and again give birth to a white-hot sun with planets. What had happened before would be repeated in every detail with the unalterably identical result. The semblance of onward evolution would be resolved in a "cycle theory," according to which everything eternally recurred in exactly the same way at certain definite times, with all the torment of coming into existence and dying, and that would continue to all eternity, without any possibility whatever of real intensification and progress.

Since this form of pessimism invariably attaches itself more or less to scientific dogmas and therefore participates in the changes which the latter undergo, it has various opinions about the more remote outcome, but it invariably believes the end will be fatal. Instead of the "cycle theory," which is mostly thought of in connection with the Kantian-Laplacian hypothesis, this form of pessimism on a different physical basis prefers the so-called doctrine of increasing "entropy," according to which all the mechanical energy of the universe will in the end become exhausted and the whole world will finally remain a tremendous corpse, senseless in death as it was in life. Nevertheless, this cosmic carcass would not be "nothingness" in the sense of Nirvana, which remains senseless existence.

The attitude of this second absolute form of pessimism toward procreating, creative love is in first line one of total indifference. It lacks the fanatical hatred of love, which prevailed in that first form of pessimism, because it lacks the slightest hope of being able

to bring about any change in things. Hate requires hope as a background, and where hope is utterly lacking, resignation results. Indifferent resignation is therefore the first stage of this form of pessimism's attitude toward love. With or without love, it all gets back to the same senseless game.

A further consequence does result from this resigned indifferentism in the case of thinking human beings who are morally earnest. From the standpoint of this pessimism there is no visible moral reason for bringing a new human being into the world. The individual as well as humanity lead back into the same grey vale of tears, back into eternal chaos. The human being whom I procreate will live his life of pain and sorrow as an individual and as a factor in humanity; he will merely help to weave the mighty fabric of pain without sense and without deliverance. I had better omit him. After all, there is nothing edifying about procreating new human beings for an eternally recurring cycle or for death by entropy.

It is true that I can let myself be momentarily carried away by love, and that I can procreate for the sake of a bit of sensual pleasure, provided it has to be procreation in order to attain this: that would be just as if the pessimist of that other first kind let himself once be tempted by the devil after all. I have no scruples about the devil. But when I am through with the matter I shall be in anything else but a lofty moral frame of mind. But this moral frame of mind is the very thing which was supposed to characterize love in the case of a genuine, thinking human being, according to the meaning of our entire conversation. It was the *Alpha* and *Omega* of our whole consideration of the subject, that all matters pertaining to physical love were in the end to become transfigured into something spiritually pure, something that was moral through and through. This moral element unalterably falls by the wayside here, and love remains a sort of drunkenness which suddenly overpowers you by a surprise attack, much as if I drink a bottle of port wine and then go out and look for some draggle-tailed street walker whose name I do not even know. The time comes when one cannot stomach it, if that is all there is supposed to be to love. This form of pessimism too kills love inwardly. There is no spectacular funeral pyre, but love is killed all the more surely on that account. It signifies spiritual castration, which is a much graver matter for an intellectual human being than the

deed of the poor ascetic in the wilderness who cuts off his member.

And so the mighty question of love in the end comes to a head after all and brings you face to face with the necessity of making a decision and a choice.

If your life's belief runs in either of these two pessimistic directions, shut the book of love at this point. In that case, all love was a world historical poisonous flower, or else it was a senseless phantom in a senseless world. You can resign yourself to the fact that you are in good company, for you have many great, earnest spirits as comrades in both camps of pessimism. But permit me to give you a last and thoroughly different interpretation of Nature's great text, which the earnest experiences of a human life likewise forced unalterably upon me.

As I see it, the road from man's forerunner, that gnome in the woods, to the Madonna is absolutely removed from both of those black roads of pessimism. I too believe that no thinking human being can look at the world around him and at his own life without becoming conscious of the full force of the painful, unsatisfied and incomplete element in life. I certainly do not want to champion what such a lofty spirit as Schopenhauer called "infamous" optimism, by which I mean a superficial way of saying that everything is fine and lovely in the face of the terrible sources of pain in this existence; an optimism which helps itself to get over the painful facts of existence by concealing them and which believes that it can eliminate that other face of the world with its "head covered with blood and wounds" by a commonplace about the "loving father above." Turn and twist as you may and where you will, man's intellect with its crown of thorns looks upon you. And love too wears this crown of thorns. Every philosophy of life must figure on this woeful face of existence, and must take it into its calculations as a fundamental fact.

But beside this are the factors of happiness all around you in the simplest everyday life. You can take away a large portion of crude satisfaction, and enough happiness will be left over. Merely think of the infinite happiness experienced by children playing; a mother's happiness; the springtime of love when two have found each other; the joy of creative artistic work; the enjoyment in scientific research; the enjoyment one derives from scenery and the joy in contemplating nature; the quiet bliss of helping others;

the bright moments of harmoniously enjoying one's own personality and then again that other lofty form of living one's life to the full in the unselfish surrender of love; conversations with friends about lofty themes; devout moments in the face of the sublime; the moments when you feel inwardly liberated and seem to hover over all the painful fissures of existence, and the memory that there were such moments. Think of the fact that in all your extremities you did find happiness "despite everything," and that this is something which no one can take from you. Think of this whole "upper story" of life with its blessed values, which does stand after all, even though the angry waters foam below it.

What preponderates in an individual human life is a constant question. But from time out of mind it has seemed impossible to answer this question merely from the experiences of a single life because individuals so rarely draw life's big prizes. Yet even when they do not, there are well-springs of happiness for them. And it becomes clearly visible that these sources of happiness in turn are fed by the more comprehensive and permanent element in existence, by the universal element in the world; that they are connected with ideals and the works of generations, of the nation and of humanity, which to my mind incorporate the principle of true happiness. Need and sickness, the wounds of battle and the little acts of folly keep on dying with you after all. The great ideas, that bore you up in your lofty moments, continue to live and work on. Nature, over which you rejoiced, continues to bloom. And the things for which you seemingly bled hopelessly to death will be achieved by coming generations. Art and science live on after you and will always keep on being sources of happiness.

Pessimism in both forms launches its Mephistophelian criticism at this point. It seeks to deprive us of the universal element. But this necessitates pessimism itself taking up questions of the most universal sort and presumptuously giving final answers to the great riddle of the universe, answers which at the same time contain a valuation placed upon the whole—the pessimistic view that in the sum-total of natural processes Mephistopheles will in the end unalterably win and that the devil is taking the world or better yet, that he took it from the first beginning.

However, if you have the courage to approach the world as a whole with our circumstantial evidence (for poor man, the eternal Hamlet, has nothing more than circumstantial evidence) it seems

to me to be of first line importance that the first, older form of pessimism is gradually being relegated to the background in our time, simply because of its dualistic basis.

All our modern knowledge of nature points with the compelling force of its circumstantial evidence toward a unity in "nature," and therefore leads us to a more monistic fundamental concept of the universe in the broadest sense of the word.

We have more and more gotten away from the idea that a "cut" could extend throughout the entirety of things. Nowhere in our practical life do we any longer expect the simple thread of causality to break off and a "miracle" suddenly to take place. We do not suspect the existence of spheres in which simple logic suddenly falters and fails, just as little as our astronomical conception of the universe any longer believes that there is a solid sphere of stars which shuts off all nature below it, and above which an absolutely new cosmos starts. Modest as may be our opinion about our scientific knowledge to date, there is not a trace in it which would lead us to suspect that there is a sudden impassable barrier beyond our knowledge. We see straight continuations into infinity and an endless fulness of things on all sides, but no barriers.

In short, we find no circumstantial evidence of anything "extra-worldly," of anything lying outside of the universe. And therefore we find no circumstantial evidence of "nothingness" either. We keep on beholding ever new realities of the universe and our vision becomes constantly enriched, both in the direction of the infinitely, cosmically great and of the infinitely, microscopically small: but neither a great wall nor the void rises up before us.

The modern doctrine of evolution in particular has confirmed this for us. It showed us that the universal sway of the identical logic of events, which dominates every lever and every hammer in our technology, extends back for many millions of years, without any miracles of any kind. The concept of nature has really become a universal concept for us, since we have been able to put man into his place in the rest of nature's chain according to man's whole physical as well as spiritual origin. This concept embraces the "whole," from our civilization to the farthest cluster of stars. All that is lies in this concept, and it neither demands nor seeks anything "behind it." It has no need for an extra-natural and extra-logical God, hovering behind the world as a separate entity, nor any "heaven," any Nirvana, as a second world, as an opposition

world, "behind" this one. An annulment of this nature and this natural will is excluded in the concept itself, to speak with Schopenhauer. This concept "has" us entirely, and in it we really have and hold the universe. Deliverance in Nirvana appears as a brilliant figment of the imagination, which absolutely does not correspond any more with any of the circumstantial evidence which constitutes our actual knowledge of nature.

Schopenhauer was assuredly an admirable thinker in every respect; he was one of the very greatest. Who will cast stones at the solitary greatness of this titanic fighter for the most sacred values of knowledge? But Schopenhauer is likewise the most striking example of how this dualistic pessimism becomes a pure painting of the imagination in its most decisive interpretation of the world, and how it becomes mere mythology, which arbitrarily shapes its material, even when a master of thought such as Schopenhauer works and creates in this medium.

Schopenhauer is incomparable when he marshals the pessimistic circumstantial evidence in ordinary visible life in his highly condensed form. Here he becomes a poet, who takes his place beside Dante with his concrete knowledge of life. It is thoroughly understandable how the brutal driving force of original nature, the demonic element in the lower story of life, clashes with the conscious mind of man, and how infinite tragedy results. Man would like to steer himself, and yet sees himself constantly carried away by a tremendous dull will in nature. The frightful manner in which this will frequently achieves its objective, with selection and annihilation, torments and wounds, and even the crude enjoyment paid out in this connection, can no longer satisfy man. Perhaps this fact can be illustrated with nothing better than with the demonic part of our love-life.

But on the other hand, Schopenhauer, as a great man himself, likewise starts out by being an artist. As an artist, he sees the upper story of life quite distinctly too. He sees how purely beholding a thing without any wild desire for it can elevate æsthetic man in the midst of all the storms of existence to a sacred calm and a state of wonderful clarification. Here grow values of happiness which no *Katzenjammer* of lower existence can touch; something which is stronger than that older and more brutal will of nature in us; something which proceeds along new roads to higher things and brings new suns into play. The æsthetic element

is only an example. Everything that signifies devotion, all devotion to knowledge that lies in research as well as all ethical devotion that lies in forgiving, in sympathizing with and helping others, is joined to this devotion to the æsthetic element in nature.

Helping others! How obvious would have been the conclusion at this point for Schopenhauer as well, that this whole upper part of life would gradually grow to be an active force, which would educate the dark will of nature in the lower story, as it were, and purify it, elevate it, and give it new and better courses. Devotion to the æsthetic mode of viewing things becomes creative art. Devotion to the search for knowledge creates new technical possibilities, which continually help to eliminate the old brutality of the struggle for existence. Ethics becomes operative, and the active work it can perform increases as technology smooths its way. In this matter, intelligence would with its own strength gradually make a more beautiful and a better world. A friendly picture of the future would shine out of all the dark clouds of existence, as it still is. Intelligence of this sort might be at work on all the stars, perhaps becoming united in the end.

But Schopenhauer absolutely refuses to see this road, and so he leads us in his headstrong fashion into the magic realm of things unproven. According to Schopenhauer, the brutal will of nature in the lower story can only be killed by the absolute annihilation of the whole universe. And on that account, the only thing for the beholding power of consciousness, for intelligence to do is to fold its hands and negate everything by means of the supreme triumph of quietism which no longer acts and no longer works and creates. The task of our concept of the universe is not supposed to be to make the world better and to educate the demonic will of nature, but to annul all existence.

In order to make the possibility of so doing clear to us to even a certain extent, Schopenhauer, the great observer with his own eyes, suddenly tells us stories. He tells us at second hand about saints and ascetics among strange peoples and in other ages who were supposed to have succeeded more or less in reducing all existence to nothing by the labour of their brains. He experienced nothing of the kind in his own case, nor did he himself observe it in others. He got this material from books, which in part constituted literature of an extremely doubtful character, literature containing accounts about holy men—and we know what they amount

to. This great observer suddenly came merely to repeat stories which were supposed to have happened here and there at the time, and which were subject to no control whatever. These accounts make no bones about having a saint go flying through the air in a kneeling position, purely by the power of mental concentration (Murillo has very touchingly and prettily painted this subject in a picture hanging in the Louvre), but I think that our Zeppelins would not have much use for this mystic flying force. And as for the real Buddhistic penitents and negators of the world, to whom Schopenhauer attaches particular value, we have obtained some very curious pictures of them from real life in recent times, which make them look thought-provokingly like something very different, I fear.

Sven Hedin, who actually visited them, has given us some terrible pictures from solitary monasteries in the Tibetan mountains! Seldom has anything shaken me so much, but the question that rose in my mind ran in a totally different direction. As a matter of fact, you still have human beings there, who are in themselves worthy of appreciation, and have the courage to take certain logical conclusions of their religion seriously. A religion, all of whose values lie in the great beyond, is still a real power in these lonely high mountain-ranges, where all things are as petrified and have been for thousands of years.

Its power is the genuine power over souls, and not merely that of a political party. To the true believer there, this whole existence has the sole purpose of acting as a constant suggestion on the great beyond. And the means of suggestion employed are crude enough. A formula of prayer, which is devoid of meaning, is mumbled day and night. Since the continuity of the suggestion, the cumulative effect on the beyond, alone matters, it is even sufficient if this formula is operated by mechanical work, by a prayer mill. Everybody turns a prayer mill there. Larger mills work for a whole community. Wind and water are their motive power, just like other mills. The only difference is that these prayer mills do not grind grain but grind out the power of suggestion to influence the next world. All other work is neglected for the work of praying. The people are uneducated and neglected, and the land is uncultivated. Monasteries full of golden treasures and bands of robbers constitute society. Morals are as weak as can possibly be, for everything can easily be made right again by

the prayer mill's power of suggestion. One can do evil with impunity and leave the rest to the mill. Active good works are not necessary.

And this is the setting in which those "holy men" flourish, who suffer themselves to be walled up alive for many years, for a lifetime, in a cell having the dimensions of an oven for baking bread; they no longer speak to nor see a single human being, and food is passed to them daily through a narrow slit. All work, even of the simplest character, is at an end inside the cell. His clothes rot and fall from the ascetic's body. He has no creature comforts, and perishes in his own filth. These men have been known to pass sixty or seventy years in voluntary imprisonment. There is not a thing left which they can possibly do in there, calculated to distract them from exerting their mechanical suggestion on the great beyond by praying and grinding out the empty formula; and that is their gain. It is certain that in the end their brain contains hardly anything else but this one formula as an eternal fixed idea.

"Om mani padme hum," the formula found on all prayer mills and covering the rocks of Tibet in countless inscriptions right up to the highest mountain pass, is undoubtedly written right through the brains of these holy men, covering up all other writings on the tablets of memory. Insane people and the sick suffering from a high fever likewise frequently keep on eternally repeating the same stereotyped word or phrase in the same way as do these saints. Does that constitute annulling existence and reducing the world to nothing by the power of thought?

Sven Hedin has described how one of these hermits who had spent sixty-nine years in his dark cave desired to be dug out before his death after all. He wanted to see the sun once more before his end. He resembled a bleached plant which had been in the cellar a long while; his body had shrivelled to the size of a child, and his eyes were totally white and blind. He had not washed nor cut his nails in all those sixty-nine years. Barely was he brought into the light, when he died. A thought of the earthly sun had remained in the brain of this senile holy man, and perhaps this fact made his whole martyrdom illusory in the eyes of those people. But does not your own thought wander from this corpse to those human beings in our civilization who have lived up to a vow for sixty-nine years, too; the vow to endure under this sun despite all pain and self-denial and to work for

sixty-nine years for the welfare of humanity, to engage in art, to search for the truth and to disseminate active love expressed in deeds, in order that the dull will in nature might become purified and transfused with sunlight and transformed into a nobler existence, into a form genuinely worthy of man? Perhaps this vow to live is a harder one than that other vow to let oneself be buried alive. Should it not likewise prove the more effective one in the destiny of the universe?

But according to Schopenhauer, we are supposed to pay the price of the whole world to attain the transfiguration that comes from this unfruitful hermit's cave, filled with the breath of sixty-nine years' putrefaction; and on the basis of its revolting existence, we are to accept as a proved fact a fantastic mystery of the universe, which is bound to inhibit all our working joy in life and love and gives us nothing in return but a few little legendary stories and a phantasmagoria which in its innermost heart lacks all substance!

And Schopenhauer is still the giant among those who champion this idea! Where this idea otherwise turns up in our age as a modern philosophy, it is even more arbitrary; it would arbitrarily deliver us up to the devil at any price, and seeks to do so with all manner of extremely artificial auxiliary inventions. In the case of so eminently æsthetic an intellect as Schopenhauer's, respect for the value of an ideal as represented by devotion to things artistic at least played a rôle in his picture of the world, even though the conclusions he arrived at from this were strange enough. Hartmann, who is likewise an extremely honest and noble thinker but of the second grade in all fields compared to Schopenhauer, already tells us that art cannot be counted as a permanent value in the sense of affording positive pleasure in our pitch-black existence, because art is already in process of dying out among us; he writes that geniuses are already getting scarcer and that the general levelling process is victorious all along the line, that the enjoyment of art is now becoming a mere opiate against boredom and so forth. What a philosopher cannot use for his system, he simply trims off. And we are supposed to let ourselves be argued into accepting pessimism at this price and born of such intellectual manœuvres by men who after all have no more had a look into the cards which the mystery of the universe holds than have we all, and who in the end had to make use of exactly the identical

circumstantial evidence as we, and who at the most took up a somewhat less critical position in placing a value on some of this circumstantial evidence than appears necessary according to our increasing experience to-day.

I am not challenging the perfect right of these philosophers to erect a structure of the vivid imagination. Images invariably have a value as auxiliary constructions. We can never eliminate them in our thinking about the universe. There are also secret forces in all works of the imagination, which we cannot get at in any other way than by philosophical fantasy. What I do mean is that in every case where this form of imagination really threatens to inhibit and endanger our life work we must go on record with the fact that only creations of the mind are involved and that the price we should have to pay in accepting them as truth would be incomparably too high.

But it lies deep down in the nature of all these dualistic imaginings that they nowhere threaten to become dangerous in a negative sense. They all have something one-sidely exaggerative about them. Everything in this world is just this way, and everything in the other world is totally different. And therefore dualistic pessimism is unable to see the worse element as a step to something better in the course of the world; it must always have absolute black next to absolute white, with a gulf between them that cannot be bridged. Life itself is a mixture of black and white. Dualistic pessimism tears this apart, and makes life in our ordinary sense totally black and constructs a totally snow-white parallel behind it in the great unknown, in imagination. We saw the danger of this particular road in the problem of love, in the case of the naked body, for example. In this case, too, imaginative dualism separates ethereal love from purely sensual love with one stroke of the pen. Then it relegates the love of the senses to hell and sends the naked body after it without more ado. *Pereat mundus*, if only the crease is kept in the legal document which separates the goats from the sheep; and all this in the final analysis for the sake of the highly imaginative idea that the domestic economy of the universe has a system of double-entry bookkeeping.

The dualistic tendency is appreciably on the decline in our thinking and speculating about the universe to-day, and the monistic tendency is constantly growing. It does not matter so

very much what this or that person understands by monism; I mean it merely in the sense of our recognizing that we are really thinking about the world when we say "world" and that we are not taking super-worlds into account in addition, and that therefore we do not believe in miracles and extraneous interventions from a "beyond." It would be desirable to have the word "monism" used only with this meaning throughout, in order to clear up multifarious misunderstandings.

The second form of pessimism, which comes much closer to our modern thinking at least in its postulates, has rightly grasped this; it at least locks us up resolutely in this world as something inevitable. The only question is whether this world and nature must necessarily be conceived as this second form of pessimism would have it.

As was said, this form of pessimism has always been proud of its close connection with science, the mightiest force in our age. Scientists themselves have cheerfully proclaimed this form of pessimism. In fact, the opinion is widely held in our time that one must have this form of pessimism if one wants to give any credence to the modern scientist at all, if one believes in the natural evolution of things including man and if one does not assume that any miracles happened in the whole course of nature for æons; and that this form of pessimism is the only profession of faith worthy of the genuine scientist. And that whoever did not subscribe to it and yet went along with science in all other respects was inconsistent and a coward. Our whole conversation would be in a bad way if this were true without further ado, and we could at most be comforted by the knowledge that all love becomes so worthless in the face of any and every form of pessimism that it would be quite immaterial in the end what foolish things were said about it. But things are fundamentally totally different.

This problem of pessimism lies outside the jurisdiction of science to-day.

The scientist in particular has plenty of opportunity for seeing the seamy side of practical life. How incessantly is the fact of the never ending conflict between human wishes and the frightful pitilessness of nature in individual cases forced upon the physician. And in this connection, it is not a general phenomenon that the scientist is more brutal when it comes to questions of human feelings than other men are. The true physician invariably has a

warm heart. Certain crudities are merely occasional phenomena of the times, whose roots extend into other fields; due to the fact, for example, that the economic situation existing to-day produces physicians to whom medical science is merely a money-making profession, in addition to the genuine physicians whose profession is medicine. This gradually regulates itself and turns out for the best. Noble natures are required for true devotion to science as to the practical help of one's fellowmen, and a heart which feels strongly is an inseparable part of a man of noble character. But no one has so much opportunity to see the good side of practical life as has the doctor, and to see that the good does exist. He knows how much help can accomplish and how much can be saved, alleviated and prevented. The scientist is the actual helping soul of the technologist, who in turn is the conjurer helping our age with a thousand tricks. And quite apart from all practical utility, the scientist knows better than any one else what lofty happiness lies in unselfish devotion to problems of pure scientific research. Think of how old Darwin set aside a large sum of money for botanical research with the motivation that he felt the urge to contribute everything he had been able to save to the sciences of natural history out of gratitude for the fact that they had given him so much happiness and had been his comfort in a "painful existence," as he well might say. Think of the explorers who consecrated themselves to the joyous service of science and were loyal unto death. In the actual practice of human life, the scientist does not emerge out of the mingling of light and darkness either. Beside much blackness there is much light. In order to establish pessimism as the triumph of darkness, the road leading into the universal, the ultimate, the all-embracing has to be sought here as well.

I believe that in all attempts which have hitherto been made in this direction, an unmistakably mythical element begins to play a singular rôle; somewhat more veiled than in the case of that first form of pessimism, but recognizable in the end. When pessimism makes its appearance in a modern scientific form, it must submit to certain strict demands being made on it and if it proves inadequate to meet them, it must suffer itself to be declared a myth for the present, at least on these points. These, however, are the principal points.

The first thing which I demand of this form of pessimism is that

it shall not try to make me believe it already knows everything about nature as it exists for us and nature's potential depths. I am the mortal enemy of the paralyzing ignorance which is born of the conceit of knowing everything, and which now seeks to build a Chinese wall around our knowledge. I see no end to intellectual evolution in the world and therefore I am not so presumptuous as to fix any limits to it. But what I do see is the fragmentary character of our knowledge. We really are still "surrounded by mysteries" in nature, to quote Goethe. And as Goethe said, mysteries are by no means miracles; we shall stand on mysteries as such. Cast a glance at the stars, and consider that luminous worlds continue that way through space, on and on. Look at this speck of dust dancing in front of the red hanging-lamp, and say to yourself that there is no spacial limit to the worlds within it, but only new worlds and new mysteries getting smaller and smaller. Think of the forces which are constantly at work around us and which go through us and which we can get close to only by big detours, because our organism has no genuine sensory organs corresponding to them. Think of all that is still unsolved about our own brain, and all that still hovers over the problems of life and the process of coming into existence, despite all the successful results obtained from the application of the doctrine of evolution. Think what a little bit of time all the millions of years of our history even show us.

I demand of every philosophy of life, which operates with the genuine concept of nature, that it shall first of all have distinct respect for this infinite sea of darkness and mystery which still continues to flow on before us on all sides. It lies in the nature of true scientific research and the scientific mode of thinking, that it does not proceed from a revelation but from a frank working programme. This is the very thing which we have gradually gained with so much effort and which necessarily must always have two mortal enemies: on the one hand, the Chinese wall of an arbitrarily postulated eternal "inability to know anything" and on the other hand, the flat ground of allegedly already "knowing everything."

It is important to emphasize this beforehand, because we can live on tolerable terms with a nature which is full of mysteries and whose cards we can peep at just a wee bit, whereas we can no longer get along with a nature which is interpreted in an utterly

pessimistic sense. I can still procreate a child on the strength of the mystery, without disavowing myself morally; but I can no longer do so on the strength of night which has been discovered definitely and finally.

The pessimist will claim the same right which the scientist constantly has to make use of in his pioneer work, namely, the right of drawing conclusions about the unknown from the known, according to admissible practice: the part of the world which is known to us is fundamentally bad, and there . . .

I grant the logic of this conclusion, but I demand that the concluding shall take place in due and proper form and shall not arbitrarily leave out of consideration a certain amount of material which the philosopher just happens not to be able to use.

It is impossible to leave out one train of thought, which to me is the most essential and decisive result of the whole doctrine of evolution, of the whole body of Darwinistic ideas, in fact, of all modern scientific research into the history of nature as well as of civilization, all in one. Our whole conversation about the origin of love again and again carried us back to this train of thought, and if you will think back, it must strike you as being the red clue that ran through all the arabesques of this conversation, without breaking off for a single instant. We know the historical course of things during a few thousand years of clear human civilization; then latterly prehistoric humanity has been getting ever more distinct. We have a wide knowledge of the evolution of intermediate and higher life on our planet in the course of its geological epochs. And on the basis of good circumstantial evidence we can go even farther and see the beginnings of life. This circumstantial evidence then carries us back to the original conditions prevailing on the earth and from there to the possibilities of our planetary system originating, and not only our system but the whole system of stars to which our sun belongs.

What we there have is only a bit of nature, a sample. The millions of years required for this are alarming to one who takes the Bible literally; but to the scientist they can only be a few first milestones.

In this sector of nature, which is the only one visible to us, we quite unambiguously observe an ascending movement, a decisive intensification dictated by a fixed inner logic.

This truth at once forces itself upon even the most ingenuous

observer at certain intervals. Consider a Magdalenian of the diluvial period and Goethe beside him; or a mammalian brain of a monkey character and the human brain by way of comparison; a fish beside the lowest mammal; a unicellular amœba and an animal possessing a primitive brain; the earth as a crude meteoric rock, which has cooled off, and a first organic cell, a formation woven of foam and vapour, yet having within it that wonderful gift of reproduction by virtue of which its descendants, the products of ever renewed cell division and fusion, continue to exist alive to this day after such a tremendous space of time. Or consider that same meteoric block of stone, the solid earth, brought into a fixed orbit within the equilibrium of the solar system, which has lasted for æons without serious disturbances, in contrast to a chaotic cloud of cosmic dust, with its endless confusion and collisions between its parts.

No one can deny that something has been ascending in the face of these mighty outlines of nature.

Of course, the obvious objection can be raised that we are appraising nature anthropocentrically; that we consider man to be the ultimate goal and that we simply call whatever leads to man "ascent in nature." But is this not an antiquated viewpoint? In no case would the pessimist be impressed by this, even if we did assume that the decisive purpose of natural evolution had been to arrive at man as the supreme achievement of creation. To the pessimist, man is the peak of wretchedness; and therefore the whole ascent of evolution in this direction would have been merely an increasingly thorny path of sorrows which actually kept going down instead of up—and down deeper and deeper.

However, it is a decisive fact that we really can grasp this evolutionary movement in nature, which is so very striking to our senses, in a different and more profound manner than pessimism, and we can do so without losing the concept of "upward and on" that lies in it.

That entire "upward" movement in nature, from the first system of stars that is coming into being to the most highly intellectualized human being, in truth takes its due and proper place within a much more comprehensive occurrence, and that is the constant growth of harmonious relations in nature which is known to us, and in the course of nature. To be sure, man too has his due place in this process and his place is the highest one on our

planet, but man is completely surrounded by this process and cosmically speaking he himself appears to be merely one station on the line of this principle which points the way far beyond man. In any event, it is possible for you to grasp this principle entirely for itself, without having to think of the later stage of man in so doing, and that to me is the decisive thing about the whole matter.

Let your starting-point keep on being the very simple logical thought lying at the heart of Darwin's doctrine of natural selection, and start with any animal or any plant you choose. Nature in first line chaotically tosses up a huge mass of indifferent variations. Only the fittest of these, those that are best adapted, survive in the long run. That signifies the selection of factors which were able to come into a certain harmonious equilibrium among themselves and with older permanent conditions which already existed. And after nature has managed matters with a free hand for a time, you find the loose, chaotic cloud of variations turned into a more or less harmonious system by the simple compulsion of natural law. The logic of this process holds good not merely for adaptations of animal and plant species in the narrower Darwinian sense of the word, as I have so often emphasized. This same logic gradually conquers chaotic conditions everywhere in nature, and slowly but surely it transforms them into cosmic conditions, which means harmoniously arranged conditions.

We encounter a boundless power of production everywhere in nature, and this force incessantly produces a veritable storm of new forms on the scene. But nature's mighty sieve immediately comes into operation, selecting forms with a view to the harmonious element, with a view to equilibrium, ordered systems and permanent cosmic formations. Systems such as these are constituted to last for long periods of time, and therefore they henceforth form fixed cosmic islands in the chaotic sea of nature's continued production. Nature's subsequent products are again selected on the basis of adaptations to these cosmic islands, and with a view to their still higher harmonizing with harmonies which are already existent. Nature's sieve, therefore, keeps getting finer and more subtle; and this in turn results in a tremendous intensification within the chain of harmonies. The new cosmic formations keep on getting more and more complex, and their content keeps on becoming richer. The process of selection continues along the line of ever more mar-

vellous perfection, while the field of its cosmic conquest is constantly broadened.

We are already beholding a tremendous performance in the way of producing this cosmic harmony as the curtain rises on the particular sector of nature which is accessible to us. Our system of fixed stars maintains itself in a state of permanent equilibrium; and our sun is perpetually encircled by planets, and these conditions have existed for all those millions of years without a single chaotic collision. There is much circumstantial evidence which indicates that this harmony of the stars likewise developed solely on the road of a very long selection of possibilities in the way of motion and gravitation which best fitted one another in the initial chaotic cloud of cosmic dust and mist. But now this firm fundament of harmony exists for all time to come. The earth hovers among those myriads of cosmic bodies in a state of great security resulting from the play of forces in that harmonious equilibrium. In the sector of nature which is accessible to our knowledge, the earth is the sole object by means of which we can see in greater detail what must further result according to natural law.

Nature's boundless production continues unchanged on the earth as well as in the rest of the universe. But what nature produces on the earth has already been enjoying the peace that comes from this terrestrial star's general equilibrium and its insurance in the form of harmony, and it has been enjoying this from the very beginning; while its adaptational selections and the resultant survivals of adaptations must on the other hand already take this given basis into account. And so a new line of march with a new intensification begins. To our limited vision, this line of evolution is specifically a terrestrial one. But it does seem possible at any rate that countless other worlds may have faced a similar stage as the earth's or that they are still continuing to do so within the great system of the universe. The identical logic must hold sway everywhere.

The marvellous possibilities of first life on earth evolved and became selected from this new material that was thus produced by nature under the protection of the mighty harmony of the universe. The organic cell originated; that new permanent formation which is so ineffably complicated, so very delicate and at the same time so very tenacious. Next we ascertain the fact of the wonderful system of harmony which constitutes metabolism in the living organism. The fundamental equilibrium of love-life with its even more decisive

possibility of permanence is adjusted to the flame of life which can never go out again. Light, which makes the harmony of the planetary spheres possible likewise makes possible the evolution of plants, and the evolution of plants makes the evolution of animals possible. By a natural process of selection of what is fitter which again is intensified anew, the cell state—the body composed of cells—is built on the cell as the permanent unit. The system of life on earth gains breadth simultaneously with depth. The productive power of nature keeps bubbling up and pours forth in a broad stream; and countless individual systems of plants and animals, with countless special adaptations to all possible special fields on and over and under the earth, evolve from this productive power. It almost seems for a while as if nature were squandering its productive power by spreading it out in growth on such a wide scale, without appreciably raising the level of the whole. Countless attempts to achieve harmony in animal and plant life sink down again and are lost in the course of geological epochs, while others persist in various degrees of petrification, without betraying any real start toward attaining new depth. But meanwhile something totally new does become visible again at certain definite places.

The occurrences and the possibilities of sensory life existed in among this vast mass of new material, which was in first line of a totally indifferent character and which nature kept on furnishing at this stage of the living cell for the formation of permanent harmonious systems.

Let us not stir up the old controversy at this point about what the real relation of feeling and sensation, of the element which in the final analysis we call soul, is to the so-called physical element. You can think and believe anything you please about that; if you choose to do so, you can talk of the purely physical substratum of this life, and it will not change anything. But I do believe that I made this much seem clear and reasonable before; namely, that this whole sensory complex (let us call this complex of feelings and sensations that) undoubtedly already did exist as an original disposition and a fundamental possibility in all nature, even below the level of actual cell life. It is thinkable that this sensory complex simply could not make itself felt as yet in the mighty original tone-poem of harmony when systems of stars came into being, when nature played ball with flaming suns, as it were, and that consequently this aptitude in nature was not evolved further at the time. But in any event, the

whole situation changed with the origin of the first living cell; and natural selection with all its subtleties achieved and intensified this sensory complex along with the rest of cell life, and from now on it did so in a very pure form on our planet (which is the only one to which our knowledge has access in this respect as well).

The profitable part which this sensory complex played in the formation of systems and in the maintenance of harmonious relations soon became an extraordinary one. In all probability, the protozoans, the one-celled Rumpelstilzes of our old fairy-tale, were already in its spell. If certain modern views, which we have already discussed, hold good, then all heredity, which is really the greatest miracle in life with its permanent formations and its maintenance of equilibrium, only became possible with the assistance of certain laws which we human beings find spiritually in our phenomena of memory. What a tremendous help the organs of the senses became to nature! Take the sensation of light, which became real seeing thanks to a sensory organ! You find natural selection and the survival of the fittest breeding these organs of the senses with the utmost energy and rapidly and brilliantly perfecting them. The whole complex of what we call "pain" in terms of the soul early makes its appearance as an alarm signal in the service of the road to harmony: "pain" sets its mark directly upon everything unfit, which runs counter to and endangers the animal in question and its vital balance, so that this can be avoided. Memory becomes connected with this in the form of fear of pain and conversely as a longing for the pleasure to be derived from the benevolent union with a second, helpful, harmonious system. Then the body's locomotive apparatus is in turn hitched to this subtle apparatus of the sensory complex. The next step is the creation of a great system of centralization, a central office which mediates all the business of the body and of life, and which in itself constitutes a triumph of system building within a system. The brain appears on the scene of nature! At a high level of concentration, the brain even acquires the power of choosing between different possibilities of action, and the central apparatus proceeds to function by reflecting about things and weighing them, with the result that in the end the more harmonious things are deliberately sought by the brain, and the hostile element of the disharmonious is deliberately avoided and eliminated. A new and eminently decisive boundary of light has suddenly been reached and crossed with this fact.

Selection of the harmonious element, which hitherto had been left to crude, blind natural selection in the animate world, suddenly gets a totally new and incomparably more direct way of gaining its ends by means of the brain, which reflects and ponders and thinks and heads directly for its objectives. Simple natural selection eliminated all inferior individuals; they were no longer subject to the necessity of becoming adapted, for natural selection let only the useful individuals survive. Logic now became established in nature by virtue of the brutal wholesale destruction of individuals. The logic which sought the road to harmony came more and more to be transferred to the choosing brain of the individual; the brain learned to refute impractical roads when they were still merely ideas and it further learned to hit the mark with the best solution. The stage of definite and final actions which are conscious of their purpose was now attained within the general urge to harmony. This constituted an incomparable short cut on the way and simultaneously an incomparable turn of the road.

The next decisive step in the progressive intensification in nature's life on earth was just this very change of method which the primeval principle in nature employed to attain its ends; this changed method was the gradually intensified exploitation of an infinitely more direct principle offered by the very fundamental in nature. As a matter of fact, this decisive step already makes its appearance in the animal below man. Man was by no means its inventor. Animals already act according to direct considerations of purposes to be achieved in specific cases; in other words, animals already travel along this new way in nature as individuals. Animals already succeed in heading toward the harmonic element "teleologically," exactly as man does. In this sense, therefore, the last, least tendency toward anything anthropocentric about the whole matter fades out of the sketch even in the example of our earth (which after all is only an example, according to all that we can possibly divine).

Nothing higher was ever achieved on the earth to date than this change of method in nature's striving toward harmony. Everything else was merely a consequence of this, once the ball had been started rolling. Man, to be sure, was one of these consequences and so was man's ultimate, singular position on earth.

Once the harmonious tendency in nature had taken the road

leading via the brain, it became merely a matter of the very simplest general selection again as to who or what was in turn to develop into the mightiest central harmonizing power plant within terrestrial life's many permanent systems in the plant and animal world. This could only be the animal in the long run, for its whole construction guaranteed the greatest possible evolution of the brain.

The brain made its appearance in the most widely different parallel systems of animals at a certain level of progressive selection. And it everywhere became intensified, so that it is possible without any trouble at all to measure the actual line of higher progress in the several branches of animals by the development of the central nervous system, without smuggling any anthropomorphisms into nature on that account.

The possibility of a very high development of the brain clearly depends on certain favourable conditions in the organization of the animal as a whole. In the long run these conditions were by no means afforded equally favourably by the very different roads which their general organization, their physical ground-plan, had taken in the various animal groups. The scale of success visibly sank at a certain geological height toward the vertebrate animal as the most successful general experiment in this respect. One stage later, the mammal evolves as a still more specific product of natural selection from this privileged "brain tribe." In the case of the mammal, the possibilities once more spread out like a fan, until finally the human brain emerges from this very keen competition.

The human brain immediately achieves the first triumph of directly working toward an objective in the form of the implement. With the implement, man ideally started on the road taken by the first adaptation in the universe of a system of life to the entire old fundamental system of the earth. Along this road man surpassed all other forms of life in their more restricted spheres so rapidly that we are at present already approaching the point where there will be nothing left for all the rest of plant and animal life, which had adapted itself to the harmony of the earth and within itself in ever deeper layers, than to take its place in this super-powerful new system which embraces the earth, in which connection all surviving life will become "man's" to such an extent that one can already foresee the time when man will exist in a circle of protected and domesticated plant and animal life which man suffers to exist. Man then becomes for the time being the absolutely inclusive final har-

mony of life on earth, the universal adaptation which actually has alone remained.

Meanwhile we unmistakably see new stages of this principle at work in man himself, entirely according to the old way but with the infinitely shortened method resulting from the triumph of the brain. At first we see this at work within man's humanity, between man and man. More specific islands of harmony constantly result by selection from out of the continual stream of nature's infinite creating, in which the work of the brain now becomes the decisive factor everywhere; and these islands in turn form growing centres to which the mass which is still unordered adapts itself, or which draw together among themselves when they have the power to do so and seek to unite in still greater systems. Such are the countless national and social unions in history, and all special rights and special laws. You also find certain all-embracing harmonies of civilization slowly making their way in humanity; certain fundamental concepts of law become generally human; ethics gradually gets established as the universal adaptation of all finer human beings to one another; science keeps extending its field; and you now have more or less clear traits of a certain supreme harmony of "civilization," which already makes the inner harmonization process in humanity for which man is responsible appear completed, at least as an ideal and as far as all cruder questions are concerned.

We spoke before of how, in addition to the great road of harmonization in natural selection there were in the profoundest depths of nature from the beginning certain direct tendencies toward rhythmic-harmonious forms, which are but little clarified at present but which seem to have made themselves felt in nature's creations. Perhaps in the case of these tendencies too we would in the final analysis arrive at certain definite strata of adaptations in the very smallest particles of matter; but let that be as it may. One thing is sure and that is this tendency toward producing rhythmic forms and harmonizing things which works from within and continues to function somehow or other in the human brain. This tendency proves itself in our creative art, which is already aiming at models which are more idealized and more highly developed. We also saw how this can develop on the road of love-selection into a method of transforming the harmonious element, which is seen artistically, into warm, living flesh and blood.

This singular active work of ours which is motivated by inner-

most ideals of harmony leads to the curious new active position of the sum-total harmony which constitutes civilized mankind with respect to the great original system of the earth, an attitude for which the way is being clearly paved by our technology.

A stage is in process of development here which life had not previously attained anywhere. Humanity is no longer merely adapting itself more and more ingeniously and universally to the earth; it is beginning to draw the earth into its own system and to transform the earth harmoniously on its own accord for its own purposes. Humanity regulates the current of rivers harmoniously for its own civilized requirements, and bores artificial tunnels through mountains. Picture this being continued (and there is no end in sight to our technology in this respect), and there will evolve a retrogressive adaptation of the entire body of the earth to the harmony of life which man incorporates; and this will absolutely be achieved on the shortened road of the brain's intelligence which keeps on spreading harmony and compels everything to become connected with it. This whole planet, which has been wandering along for æons in its mighty stellar state of equilibrium, will in the end become merely a kind of scaffolding, a sort of bony framework for a harmony of intelligence which completely encompasses, dominates, possesses and educates the earth.

But even this would not constitute an ultimate picture to a certain type of logical imagination. It would be thinkable that a similar process had taken place on countless other worlds, and that a more complete conquest by a system of intelligence had come about there. The terrestrial intelligence of our brain is already raising its eyes and looking into the distant universe, into the tremendous cosmic play of that higher system of checks and balances, in which the whole earth has been hovering for billions of years as merely a very tiny fractional part. Observing and calculating, we are beginning to fathom the original mystery of these mechanical super-harmonies. You could dream that celestial bodies which are thus woven in a web of intelligence might discover one another. You could dream of a connection between these centres of intelligence in the universe! This might lead to new forms of competition, new adaptations and being sucked up into new systems until in the end a new state of equilibrium, a new super-harmony of all the intelligence in a system of stars would be created from such systems of intelligence encountering one another.

This thought would reach its climax if we were to think that just as man's intelligence subjugated its earth and adapted it anew to man's purposes, this extended unity of intelligence would in the end get the great original checks and balances of whole systems of stars in its power and regulate them for its purposes.

These things can only rise up before us in dreamlike fashion to-day, appearing in a whitish haze and vanishing again like the early morning mists on a meadow; but the fact is important that these things can be thought at all. Even for our limited vision, it is the sure sign that in no case must the logic of harmony's ascending road come to a stop with man of to-day as its goal; and that this logic cannot be an anthropomorphic principle in the antiquated sense, but that it simply puts the temporal phenomenon of terrestrial man as well into its proper place in a principle of the universe.

I wanted to exhibit this train of thought about the only higher thing which, as it seems to me, can really be grasped in nature that is known to us, once more to you as pregnantly as possible, although it has been the basic melody of our entire conversation. If you choose to apply measures of value to it, quite certainly there lies in it a trait which must be appraised as optimistic rather than pessimistic.

In first line this train of thought shows you that there is a something in nature which triumphs in the long run, and that therefore something more than merely a general constant and indifferent splashing is going on in the eternal pond of the universe. If you follow up what does win in nature, you cannot say with the best of will that it is the Mephistophelian element in nature. Order triumphs over chaos. Improved arrangement wins over things still ordered in a faulty manner. The enduring triumphs over the evanescent. If it did not create the spiritual element, it did intensify this element with all possible means as soon it came into its realm. All ideals of our civilization, art, science, ethics, love of mankind, and social law and order lie along this line of evolution. The most daring pictures which imagination conjures up for us about the progress of civilization continue to be totally in its spell. Can there be any better insurance for the hope that everything having to do with us and the world will turn out for the best in the end, despite all momentary darkness, than this fact that there is a prime logical law in the universe, which has been at work for æons transforming a chaotic

creative urge in nature into a "cosmos," a harmony of the universe, and that this law holds and encompasses us too?

It is true that the voice of the sceptic about the world is in all of us, but it will not do for us to be deliberately deaf to this exceedingly unequivocal language of the facts about nature in the sole part of the universe which is known to us.

Of course, if you want to employ the most usual catch-word for refuting this idea of harmony, you will say that the whole matter of upward evolution in nature is merely "chance." This objection always formed the second reserve, when the anthropocentric argument failed to pull. Many people now believe that if man is really not the goal which has been set up for all things but that man must come under the Darwinian law of natural selection, everything amounts to utter senselessness and vanishes in an indifferent backward and forward play without any recognizable characteristic of permanence. These people exploit the road along which the formation of harmonies proceeded below the stage of the intellect which creates directly. They argue that nature tossed up chance possibilities, and that it was pure chance that occasionally there were forms among these which were capable of surviving. They say that nature's chance selection simulates the appearance of increasing harmonization, but without any sure foundation for it.

And yet, the result of countless harmonies which constantly reach higher, from the stellar system to the highest animal brain, is so very tangible before us in our evolutionary part of nature! And therefore the necessary material for orderly selection must have existed in nature thousands of times over and over again.

But the champions of chance argue it just happens to be a chance in our bit of the world that so many of them did hit the mark; that things might be totally different in the rest of the universe and that things could have been radically different in our world for that matter; that the small part of nature's course which is visible to us happens to be a chance exception, which simulates a world with a tendency toward harmony by blindly piling up lucky coincidences. They argue that this swindle will come to an end some day, just as those winning runs which a gambler sometimes enjoys at Monte Carlo must likewise come to an end, and that chaos will swallow us up anew as it does him.

The sole historical line which we have is an exception to the uni-

versal rule; and this is supposed to be a deduction drawn about the unknown from the known!

To be sure, I do not know why different kinds of material are produced by nature at all, and why there first has to be selection. I do not know why the way of things has to lead upward but slowly, by countless laborious steps, each one of which surpasses the previous one and is a closer approximation to perfection. That just happens to be one of the enigmatical fundamental questions in all nature, which we have to make the best of. We have to accept it as the old style belief accepts as a fact that in addition to his God the devil also takes a hand in the game and that human souls created by God who is good can also do evil in addition to good. This believer too customarily postulates God's "inscrutable decree" in creating the world. This pious person is satisfied that in the long run at least God and the good triumphs and the devil keeps on losing the game in the end, no matter how many chances the devil may have drawn. The observer of nature faces the fact of evolution in much the same way. He cannot say why the course of the world was staged from the first beginning in such a way that harmonious and disharmonious possibilities swirled up together in wild confusion and that the one has to get the upper hand over the other slowly and by a process of evolution. But he does see that the harmonious element has triumphed in our neck of the world and continues to triumph, and this fact throws some light on things, with which he can manage to get along. To construct a world in which all lucky shots were missing from the very beginning would signify constructing a fundamentally different world from ours; it would be a world which would contradict experience. We should get into dualistic pessimism anew, with the black side this time being the artificially invented super-world.

An even weaker idea seeks to apply the concept of "chance" to the law that what is fitter and more harmonious survives in the competition of existence. This law is a logical one. Nature as far as it is knowable to us is based on a certain definite logic, and the law of natural selection is part of this logic. The fact that this law injects an optimistic trait from our viewpoint into all that takes place in the universe simply signifies that this trait is fixed in the innermost essence of nature. Nature has a perpetual regulator in this law, which must in the end drive nature's work in the direction of cosmic order and permanence. Some one will want to say that this

law is only a chance case in our small sector of nature; and that it does not need to hold good elsewhere. In that case we should arrive at nature which was logical in our nook of the world, and which was not logical elsewhere. Witchcraft, making something out of nothing and making two and two equal five, might hold good elsewhere. And with this, the main column of all our monistic thinking about the universe, according to which the unity of the world is anchored in uniform universal logic, would go crashing.

The more fixedly you conceive the part of nature which is given to us as being a whole, the more is "chance" with its seeming disrespect of law relegated to the background. Everything of a "chance" character in certain comparisons takes place in one and the same all-embracing nature and in the final analysis it is only a given property of nature at a certain stage and not something totally strange and unconnected. It does not change the result in any way. If you encounter anything completed in nature which strikes you as something tremendous, something sublime, something incomparably splendid, judged by your own innermost longing, and you are then told that all this was in the last analysis merely brought about by chance, that is exactly equivalent in a bad or good sense to someone telling you that it was chance in Goethe's personality as a poet that "Faust" evolved from it.

It is true that a vast amount of chaotic fermenting and billowing must have preceded and then kept on continually feeding the history of the slow origin of "Faust"; there was an endless production for no purpose in first line, an inconceivably rich rain and movement of impressions and recollections, sudden ideas and associations flashing up without rule or regulation out of the depths, useful and useless material all seemingly engaged in a mad dance of chance in the dice box. And in the case of Goethe as well, there was for a long time only a sort of intuitive logic, which was still totally independent of actual clear consciousness, busying itself with all this loose material, bringing a certain crude order out of the chaos in first line, and producing certain first outlines that fitted one another. This work frequently goes on in a poet during periods when the last thing he is thinking of is his poetic material; it goes on in him as in a dream, but at the proper time the results appear to him marvellously clarified. There is really a very striking inward resemblance between the work of the imagination and the genuine processes of natural selection; if this similarity is studied more closely and with

a more open mind, perhaps it will throw important light on both phenomena, just as a comparison with the laws of our memory does in the case of the purely organic phenomena of heredity.

But "Faust" in all its glory remains just what it is. Of further importance for the completion of it is the fact that Goethe's conscious work is in it as well, the work of a colossal intellect such as Goethe's was, and that this intellectual work entailed very definite choosing and striving toward a goal and an absolutely sure-fire adjustment to produce a harmonious work of art which was consciously willed. You find this phase in nature. Those dark processes, which led to the brain and to man, bred this phase historically from the originally given, fundamental disposition in nature. Goethe possesses this because he is a piece of nature in the stage of man, and therefore "Faust" is a genuine product of nature from this standpoint. We are unable to get out of nature with any example, no matter how daring, and we simply keep reciting its essential character with our comparisons.

The decisive factor continues to be that we really have to take the concept of the "whole" seriously in our definition of nature. You cannot pin nature down to any abstraction you please, such as the favourite picture of "energy and matter." You are not harbouring a true monistic concept of nature if you describe some similarity which has been gained by an artificial abstraction as the whole, and then take this eternally stagnant sameness for unity. For instance, if you were to say that nature is matter. Matter keeps on eating up everything. It is the sole sure, decisive thing we know; it is "nature." You could not possibly bring to light a more ghastly picture than that; no wonder that pessimism falls in love with it. Yet this is merely the most arbitrary kind of an abstraction, hatched out in the study; like putting out the light in order to assert that the only reality was darkness. The idea of evolution ought to have revolutionized our thinking sufficiently to enable us to shoo away this old spectre for good.

Nature is not merely energy and matter, but it is also human spirit. It is not merely a planetary system, but it is likewise Kepler, who consciously calculates the laws of planetary motion. In reality, it wrote Goethe's "Faust" and thought out Beethoven's symphonies, it gave shape to the Venus de Milo, painted the Sistine Madonna and the Day of Judgment, and as Christ it preached love of mankind and proclaimed to the poor and the heavily laden that "an eye

for an eye, and a tooth for a tooth" was no longer to hold valid on the heights of humanity but love was to forgive all wrong seven times sevenfold.

You must include totally different things from "energy and matter" in even your most abstract of general definitions in order to arrive at nature. To produce even the simplest beginning of the evolutionary picture which we have, necessitates nature's property of constantly turning up different "forms" of things, and producing an endless amount of variations which somehow or other have an individual character. This throwing of variations is the extreme opposite of eternal sameness expressed in the concept "matter"; an absolutely and totally different, special original attribute of nature manifests itself therein. This throwing of new forms of nature takes place in the element of time. In time you again find that logic to the course of nature taking a hand, which gives permanence to "harmonious forms" and simultaneously the continued possibility of being intensified. Nature's essential fundamental property of "feeling and sensation" begins to make its appearance more and more decisively in these intensified forms from certain stages on. The disharmonious is perceived as pain, and an approximation to more harmonious relations as happiness. As this principle leads anew to increasingly improved and refined permanent formations, nature at last shows itself as "intellect,' 'in which the logic which tends toward the harmonious becomes a direct, final principle striving toward a goal.

Only when you have imparted these colours to your portrait of nature will it really become possible for the same nature which holds sway in suns and crystals to wear a human countenance as well. Otherwise, man remains an extraneous miracle, quite immaterial whether you regard him as on the whole a fortunate being or eternally ill-starred.

But if you do define nature in the above manner, the general conception that everything in the world up to our highest ideal values is determined by "natural law" loses the harshness which it still has for many people to-day. For in natural law as the essential character at the bottom of nature there will be not merely phenomena of gravitation or heat or other physical factors in this sense, but there will also be inherent in it the eternal source of our most sacred values of the spirit, which must likewise triumph and which proves to be the higher thing in the end.

I hear the voice of the sceptic about the world again at this point. The law of harmony may hold good on the whole, he says. But in any event, it is an endless process, which never leads to complete liberation. It always contains the change which will make what for a while seemed harmonious a disharmony again, even when progress does on the whole take place. It is like Penelope, eternally unravelling what she has woven. For a higher order in big things to come about, thousands of different small things which felt quite happy in existing have to be forcibly destroyed. And this holds good where the line of evolution is on the whole ascending. In addition to this, there is the road of blind selection, and this really makes things hopelessly bad at thousands and thousands of spots. Thousands and thousands of experiments, which passed through all manner of struggles during their own evolution, prove in the end to be merely worthless and beside the mark compared to the one most successful experiment, which hit the nail on the head. They must therefore unceremoniously perish. Thousands and thousands continually seem to be called, but only a few are chosen. But you want to have a sort of new era start with man (and his kind, if such there be elsewhere in the universe), an era, when the intellect begins consciously to survey the roads of progress and takes the place of blind natural selection with its direct actions for a purpose. But did you ever stop to consider where the intellect is anchored in the big picture of nature? It is attached to the tiny delicate scales woven around one or more crude planetary globes in the form of life, as its bloom is breathed on a blue plum; and these tremendous globes in turn are hanging in much more gigantic stellar systems. The utterly and elementally brutal forms of evolution still hold sway unalterably to-day in these stellar worlds. The equilibrium of these worlds may become still further adjusted amid frightful shifts and transformations; and mistakes in the construction of the universe may be eliminated amid terrible catastrophes. It may represent progress there when planets occasionally plunge into their sun, when suns collide and unite their explosive material which they had kept covered over with difficulty for a while, and jointly strew it in the universe again. Systems of worlds which are better in construction may evolve out of this during long æons. But the smallest cosmic jerk of this kind must inevitably blot out life's little flakes together with all intellect, like an absolutely worthless intermezzo. During a period of rest a huge granite block has become covered with grass

and Alpine roses, but one day mighty matters take their course again and it plunges down into the valley; and the lovely little garden is naturally a victim of the shift in the rock's equilibrium. Blind natural selection still rules everywhere up there in the case of those terrible higher cosmic authorities above you. Who knows but what the whole plum of the system of fixed stars which is known to us, and whose bloom your intellect is, may be only a wormy incidental experiment among unknown clusters of stars and cosmic mists of dimensions beyond the grasp of the intellect, and that this experiment has already been marked and rejected in favour of stellar progress which alone is victorious somewhere else, and which some day will trample to dust the poor terrestrial experiment despite all its partial harmonies and its bloom of the germinating intellect? The astronomer to-day sees the most significant indications that the equilibrium up there is somehow changing and will bring about our terrestrial bankruptcy. The sun is going out, the orbits of moons and planets are getting smaller, and the earth is drying up in lunar fashion. Various minor disturbances, cosmic formations wandering around irregularly in space, eccentric planetoids and other things call to mind the fact that there continues to be absolutely no guarantee against collisions suddenly taking place. Distant stars which flame up demonstrate clearly enough what can happen to our sun if it crosses the path of a second one. It would be Pompeii on a somewhat larger scale; and we would be finished in our world despite all our victories of the intellect. Modern astronomy's whole sky shines with signs of this. But let us assume that the powers above actually did let us continue to exist for a boundless period of time, and that intelligence bloomed in the universe and in many cases made much bigger progress than we did on earth. What guarantee would you have that we human beings were not a barren experiment in the competition of intelligence in the universe? Let intelligent beings from other stars appear among us one day with a fabulously improved technology; would we not disappear before them as the great auk and the dodo vanished before us, and as the Aztec perished before the Spaniard—a worthless and helpless incidental form which served no other purpose than to make room as soon as the real sun rose? Intelligence may triumph somewhere else and higher forms of cosmic equilibrium become established, but in either case we should have lost our connection with those processes of evolution. "The palm-tree must grow and the coral spread out; but man must

perish." The Polynesian knows that, and he perishes. What did all our bloom of the intellect help? Goethe had to die one day. But his "Faust" too must similarly vanish without leaving a trace behind. The race of man "vanished like a breath" one day. And then, as far as we are concerned, we for whose love and sense of love we have raised the whole question, Mephistopheles will be trebly right in saying:

—Past! a stupid word.
If past, then why?
Past and pure Naught, complete monotony!
What good for us, this endlessly creating?—
What is created then annihilating?
"And now it's past!" Why read a page so twisted?
'Tis just the same as if it ne'er existed,
Yet goes in circles round as if it had, however:
I'd rather choose, instead, the Void forever.

And in order to attain this final result, for this absolute absence of any guarantee in the universe, we find terrible pain at all stages of evolution, at least from a certain degree on, and every higher step in the world accompanied by terrible travail! Hell's particular contribution is that, at least at the stage of life, the disharmonious element is a burning cup of sorrow which has to be drunk to the lees, not only physically but in feeling as well. You call this increase in sensibility to pain, as the higher organic world keeps manifesting it more and more decisively, a vehicle for the progress of harmony by virtue of pain functioning as a warning signal. But it is likewise attached to all progress as the pain of transition. And furthermore, it functions even where absolutely hopeless dissolution sets in, and where there is therefore nothing more to save and nothing left to give a warning to. Happy to a certain degree is the animal, mostly suffering only blind pain, as it were. The whole, frightful, seeing, conscious pain of the intellect first makes its appearance in man—forced to see that everything takes place in sorrow and suffering and in the end is all in vain after all. . . .

The sceptic about the universe, who thinks this way, is not right, however. These thoughts can still be combated with thoughts. Things can be thought out still more consistently, until they take their place again where the seemingly inflexible barrier bends.

In itself, it is not logically necessary that intelligence in the universe must again and again succumb to the onward evolution which is possible in the great systems of worlds.

Let us assume that life really were repeatedly and completely annihilated by new transitions accompanied by tremendous fluctuations in the equilibrium of great cosmic systems. When permanent equilibrium was restored, life would in first line ever be bound to develop anew, with renewed ascent up to intelligence of a more or less higher order. For the driving causes of life would not perish in any cosmic conflagration, no matter how great the catastrophe might be. Even if our whole system of fixed stars to-day were crushed and reduced to a cloud of loose cosmic dust again, everything would be worked out again as it is to-day during a certain long period of time by virtue of the laws of the universe which remain the same. You yourself will admit that. Taken by itself, this would not mean very much, for it would simply lead us back to that cycle theory, according to which the evolutionary process of the universe is an eternal, senseless return of the same. But that law of increasing harmonization contradicts this cycle theory very sharply. You have just characterized these occasional catastrophes in the universe as merely the confusion incident to the transition of progress to a higher stage of harmony. As a matter of fact, there is absolutely no reason for foreseeing that the equilibrium of the stars will suddenly go crashing down into complete chaos. As a matter of fact, a change to a higher stage may well produce an occasional shock which will make itself unpleasantly felt down below. Imagine if you choose that a cumulative mistake in the universe is actually eliminated by a collision of worlds; or that a smaller system is transformed and adapted to the harmonies of a larger system. The next stage which is achieved will invariably signify greater harmony. The mistake is "bred" out of the system again, as it were. The larger harmony guarantees the smaller one more successfully than the latter was able to do by itself. If more successful harmony and greater equilibrium signifies nothing else it at least signifies that the existence of the system and the guarantee of all its parts will endure for a greater length of time, until another cosmic jerk and fresh regulation of the system becomes necessary. With this new stage, intelligence too will be able to evolve a bit further. Intelligence likewise will climb a step higher in the end. In the long run you would obtain

a consistent line of increasing, ascending intelligence. To be sure, this evolution of intelligence would always be screwed down again from time to time (though at ever longer intervals), and it would have to begin all over again at the beginning, again travel along the old road for a certain distance, but then every time grow and attain its next higher stage. There is a slight analogy to this process of development in our civilized life to-day, where every one of us lives but for a brief time and each new generation has to start all over again from the beginning as far as certain things in life are concerned, yet progress does run through the chain of generations, with the result that the grandchild has advanced somewhat beyond the point which the grandfather reached.

You can think these things out in more specific terms. For instance, imagine that every time a really and wholly elemental force suddenly annihilated all life and all intelligence within a system, only to have the whole game start over again at the beginning and be carried to the point where the thread of evolution broke off before; this time, however, the thread would not tear off but would continue on. In this case one might well ask whether the participating intelligence or the intelligent beings involved would notice this curious retardation followed by the resumption of progress after all. It would be much as if one of us were suddenly to die between two occurrences which customarily followed one another in a second as simple cause and effect, and then repeated his entire life to the point where the identical action in this second took place again, but this time everything continued smoothly. Say one of us died between the moment of striking a match and its flaring up, then lived our whole life again to the identical occurrence. Would we not live quietly on as if nothing had happened? But I am just mentioning this in passing.

The main thing would be that the peaceful periods of time, during which intelligence developed undisturbed by cosmic forces, would keep on becoming more and more extended. The scope for the evolution of intelligence would become ever wider and freer within one and the same epoch. If you now grant intelligence the possibility of unchecked evolution, as the beginnings of our technology to-day, conceived for relatively endless perspectives, imperatively demand it, the case is finally bound to occur in this course of things during such an epoch of peaceful evolution, which is stretched out inconceivably long, that intelligence will overtake

and of its own accord face that cosmic annihilating force and know how to survive it. At some last, very long stage of cosmic calm, intelligence will find the technical means of leaving planets or systems which are threatened and maintaining itself at some secure spot while the danger lasts. In the extreme case (which we touched on before) intelligence itself will take a hand and improve even the celestial equilibrium, transforming the checks and balances of the universe into forms which will no longer menace its existence.

This is a picture painted in a perspective that makes one's head swim. But if you want to project the nothingness and the senselessness of the universe into all eternity, I do not know why I should not claim the right to think out life and progress as well in terms of eternity.

From that point on, cosmic intelligence would permanently remain above and beyond all change in the universe; henceforth it would absolutely continue. If some one were to assert that we are already living in a period of celestial equilibrium, which encompasses this critical point, that assertion could not be refuted with any sure reasons; further, that this point lies infinitely far off in the endless onward course of the present period, but that its future aspects are as a matter of fact already contained therein; and that therefore no catastrophic collapse and crash of the stars would take place again before intelligence in our system had progressed to the point of counterbalancing it.

In reality, the mighty guarantees in the system of fixed stars which is known to us and in our solar system make an impression of being astonishingly substantial. In so far as sudden catastrophes, which are already close at hand, keep on being talked about and prophesied (now it is a comet, and now a planetoid hurrying toward us, and then again something else), invariably we find an astronomical myth mixing in, calculations and opinions which in the end have approximately just as much value as truth as had Schopenhauer's mythical tales about holy men who thought the world to death inside themselves. On the other hand, where you encounter hypotheses about suns cooling off or exploding as a result of collisions and similar things—hypotheses which are not even remotely certain, but which at any rate are halfway discussible—you invariably hear of periods of time with an inconceivable number of noughts hitched to the figure representing the date when the catastrophe is due to happen. Billions, trillions and

quadrillions of years are mentioned as the time we still have to live. But if you take merely the rate at which our intelligent technology is developing on earth to-day as your measure, and put down billions and trillions of years of continued undisturbed evolution behind it, will any one really seek a longer period for arriving at intelligence which can emigrate to Alpha in the constellation of the Centaur, the nearest fixed star to us, when it gets too cold or otherwise uncomfortable in our solar realm? After all, even the best of these theories are still very weak. We are very far from knowing what actually heats the sun to-day; proof enough that we cannot foretell when it will go out. And this is only one example among many. The famous proposition about entropy contained in the thermo-dynamic theory, according to which the universe (only after inconceivable æons and under certain definite but unprovable spacial postulates) will in the end come to a complete standstill and be reduced to the eternal rigidity of a mummy as a result of the equalization of temperature everywhere and the consequent paralysis of all mechanical work, is itself merely a particularly typical example of the fluctuating character everywhere in these astronomical-physical figments of the imagination. Only recently, so eminently acute a thinker as Arrhenius refuted this theory in the simplest manner with another hypothesis according to which the universe was bound to remain at least a *perpetuum mobile*, always regulating itself. Nowhere can we escape from highly imaginary hypotheses about the end of the world as yet, and we have no genuine "scientific material" bearing on the subject, either for or against. If it does anything, all that we do know speaks only in favour of coming gigantic periods of celestial calm. In that case, it remains thoroughly possible and even probable that we have long been in the epoch which already promises intelligence cosmic indestructibility and continuous progress without limit in the whole universe.

If you are of the opinion that we human beings could be suppressed like helpless dodo birds by beings of a still higher order of cosmic intelligence, we must resort to the phenomena of our own higher intelligence, which is just evolving, for the sake of comparison in this case too; and the picture will become noticeably different.

If speculation must roam to these blue distances, it is not necessary in first line that we imagine the various separated forms of

intelligence in the universe to be totally and fundamentally different. Possibly higher intelligence could proceed from very different physical structures and might have been bred by means of very different organs. Perhaps intelligent beings on other stars do not by any means have to have specifically human countenances with human brains behind them. Wherever you imagine that it has been attained, conscious intelligence itself is a certain absolute value after all, and the road by which it has been achieved can hardly change it unduly. There will be only differences of degree and not of kind within this absolute value. But when you increase the degree of intelligence in the case of other intelligent beings in the universe, you must become alive to certain things in our human intelligence which are already indications of the direction in which these gradations are going.

It is true that we human beings have wasted our intelligence in shocking fashion and have trampled down whatever we could. And we are by no means out of this stadium. But we already show symptoms of something else. Above races, nations, strata of interests and individuals in humanity, which after all are still fairly different from one another, a something is more and more distinctly arising, something which uniformly embraces all mankind and in which they all in turn live a higher life without conflicting (without detriment to their justified special existence). That higher something is "civilization." The essence of civilization is no longer a planless levelling process, but a conscious utilization of forces of a very different character in world-wide team play which is particularly strong on that very account. Still slowly at our stage but unmistakably, the standpoint of educating, elevating and clarifying lower and baser elements is taking the place of brutal suppression. It becomes more and more manifest that civilization is based on and permeated by a system of ethics which eliminates the crude and brutal element, barbaric butchery, from the realm of higher intelligence in favour of new and gentler principles which achieve progress in a totally different fashion. If we chanced to get into a stage of intelligence which was higher than our own, we would be bound to get increasingly into this field of vision.

If you imagine that beings exist, whose technology is already so far above ours that they can nullify the force of gravitation and travel from star to star with a ray of light as their motive power, there is nothing else left for you to do but to suppose that their

civilization along with their ethics is a corresponding stage ahead of ours. For it is only an empty phrase that scientific progress, which after all lies at the bottom of all intelligent technology, can be achieved permanently anywhere without ethical character building keeping pace with it somehow. The history of our own civilization argues against this. Whoever would undertake to devote himself permanently to science while renouncing the ethical element would come as wretchedly to grief as the drivelling old exponent of pseudo-ethics who preaches to us that ethics can flourish only where the progress of knowledge is forcibly checked. If we encountered beings on a genuinely higher plane of civilization, we human beings would hardly be eaten up as were the helpless dodo birds by the hungry sailors nor would we be butchered as were the Aztecs by the Spaniards; we would be taken into a higher civilized association as pupils and this would pave the way for a thoroughly peaceable, harmonious process of absorption.

But let us assume that the differences between various forms of intelligence in the universe were much greater; and that the intelligence of those beings was to ours about as ours is to the intelligence of a bird or an ant, so that we did not know any means of raising ourselves completely to their plane. Let us be mindful of the better element in ourselves in this connection! At its purest and brightest spots, the ethics of our civilization has already risen to and put into operation the idea that we must cherish and keep alive even the hopelessly weak, those who can never be of use to society again, once they are among us, and this purely for ethics' sake, and that we engage even in the protection of animals, and that inwardly we have long ceased to approve of tormenting and annihilating birds and ants as well. We should then experience the blessing of this increase in civilized sensibilities applied to ourselves.

Our attitude toward the animal affords us yet another viewpoint. It is not ethics alone which makes us begin to turn toward all older and lower forms of life, even the failures which branched off from us, in a totally new spirit of love and with a new desire to spare them. Above all, it is science which does so. We have long ago come to realize that there is no part of nature, no matter how crooked or wrong, which is not valuable and even indispensable to science, and whose existence and individual character science would therefore not want to protect with all means in its power

as the object of its research. What would our zoologists not give to possess a living specimen of those dodoes which were so ruthlessly exterminated! And how zealously we are at present engaged in establishing game preserves and other scientific sanctuaries for animals. It is true that the men about Cortez threw all the Aztec manuscripts they could lay hands on into heaps and burned them up; but a few hundred years later Humboldt and his associates were already setting out to salvage and decipher the least little part of such a manuscript, which had happily been preserved, with unspeakable love. You must credit the possession of this scientific sense to every form of higher civilization than ours. In it would lie the law which would save us, inscribed in eternal characters of bronze, if this higher intelligence were to appear on our cosmic island and we were only dodoes to it. If even Goethe's "Faust" was only as the babbling of a child to these beings, they would yet preserve it as something sacred, just as we do those ancient Mexican manuscripts.

There is a certain magic in this idea, which might raise the whole concept of historical by-ways and the earlier squandering of natural selection's material in evolution as a whole to a still higher field of vision.

All these side shoots and all the material that fell by the wayside in the end gain a connection with intelligence after all by way of this search for knowledge! If you look the curious fact straight in the face that our human intelligence is already undertaking with infinite labour to enroll the whole course of history which is in any way accessible to us, with all its arabesques and to the least little offshoot, and make all this knowledge a part of its clear consciousness, an inkling of that belated restitution must necessarily dawn on you. Picture to yourself how we pluck the ancient ichthyosauri out of their rocky crypt and study them, and how we are endeavouring to assimilate them with our brain, as it were, although they undoubtedly dropped out of the straight line of evolution that led to our brain in hoary primeval days. It is true that the road which we are reconstructing is patchwork for the present. Infinitely much seems lost forever. If all the schist in which the bones of the ichthyosauri are now lodged were lying ground to sand at the bottom of the ocean, how could this late conquest by intelligence ever succeed? But this merely concerns us of to-day. The radiant idea which can never be put out rises

above the consistent possibility of progress in this direction as well, that nothing which once was can ever perish utterly in this ultimate sense.

In reality, not a breath of air nor a wave can ever vanish in the universe: their sphere of action continues into the infinite and to all eternity. Eternal in this sense is by no means merely the sum-total of cosmic energy thus conserved. The form of things which once existed remains in play for all time and all space in the form of definite undulatory spheres of action, which remain adjusted to a definite, individualized centre, an original constellation persisting through all eternity. All the transformations of energy in the universe cannot obliterate these undulatory spheres of action; and scientific calculation would always find their writing unchanged. The great physicist and philosopher Fechner has formulated this idea in very decisive fashion.

Now imagine science to make such progress that it could bring all this together again into one focal point with its victorious formulas. That in the end nothing remained strange to scientific research. That all forms which fell by the wayside of evolution, all the dead, all preliminary stages and all the side-lines to the last little speck of natural selection's material which had been frittered away were resurrected in all their intelligence, all encompassed by the same sacred love and devotion of the search for knowledge.

I am not speaking about us: I have in mind the infinitely distant and greater development of what is merely living dully in us as in a chrysalis, while yonder the liberated butterfly rocks over the flowering meadows. But who will deprive logical deduction of its right to make a present which is ideally perfect in the highest sense out of the future?

The growth and triumph of the noblest element in intelligence is closely connected with the problem of pain, and in a different manner from the way you believe.

In its really harsh form which you mean by pain, it makes the impression of being an attendant phenomenon of a certain intermediate stage in the evolution of the universe.

Pain does not exist below in this fashion, and above it changes completely in a certain sense. Above and below are infinite perspectives; the intermediate part of the universe, however, appears to be closely circumscribed according to its very nature. It is my

opinion that a general sensory principle runs through all nature, below the realm of life as well; and we have discussed that before. However, according to what we know, it nowhere experienced the intensification below there which would enable us to speak of actual serious pain. We do not assume the existence of pain in the case of a stone which falls nor a meteor which collides with another mass. The whole question of pain is therefore eliminated in endless realms and all transitions and transformations there. Pain first makes its appearance as a really serious matter with life, where according to my view it became bred by utilitarian selection as a signal along the direct line of progress toward harmony. You can still note how pain is occasionally missing where it would be of no use in this sense. Frequently, to be sure, you find the same thing happening here as everywhere in the imperfection of organic formations which still exists: once the signal exists, it continues to function blindly even when no longer necessary. There is no doubt that much terrible pain prevails in this layer of existence, with purposeful and superfluous pain all jumbled together. Organic nature just happens to work on the same huge extravagant scale with pain as otherwise. This continues right up to man, and you are perfectly right: to our increasingly clear conscious survey of things, the peak of suffering is reached in man. Job's despairing lamentation extends to the stars. Our sensibility is infinitely sharpened; merely think of our imagination and our faculty of memory for feeling pain in advance and afterwards. On the other hand, our consciousness is awake to the idea of things serving a purpose and to the idea of the harmony of things. We would understand pain if it always made its appearance unambiguously as a genuine warning or a genuine penalty. But it seems to cross our path quite irregularly. It strikes the just along with the unjust. That was already Job's special complaint and has continued to be ours ever since. When a railroad train is wrecked, not only is the person who is to blame for it maimed or killed, but the just man, who happens to be along, as well. This ghastly lack of any guarantee against suffering has brought man to the point of desperation ever since he has been able to think. What we see on earth to-day is a calamity which possibly had its beginning hundreds of millions of years ago finally reaching the veritable apex of hell in the case of man.

But in the case of this same human being we also see regulative

measures which begin to have an increasingly mitigating effect standing out in bold relief.

We begin to put an end of our own accord to a large number of brutal factors in the realm of pain everywhere. For a while, Job's frame of mind infected us to the point of sitting by and doing nothing but mutter about Allah's illogicality. But then we engaged in the fight against pain ever more resolutely. If our science of medicine cannot conquer death, it is constantly and more and more energetically attacking suffering incident to sickness. It is already able to eliminate pain's brutal signal where it is superfluous, by artificial means of general and local anæsthesia. At the same time, our technology keeps on finding more and more ingenious safety measures for putting a stop generally to those crude collisions which endanger the just along with the unjust. After we had been tormented long enough without any result by the question of guilt or innocence in the sight of a heavenly power, we now see a gigantic field opening on all sides for our own work in this respect—a field where every turn of the spade pays us a thousandfold.

Imagine this process to continue. Man will not remain a delicate creature of glass which the least little blow can break in pieces. Increasing civilization will gradually learn to surround him with tremendous safety measures, like diamond armour. Even the slightest possibility of collision will be more and more eliminated. It will no longer be possible for Job to be robbed of his herds by murderers, for his sheep to be struck by lightning, for his children to be killed by the roof falling in during a storm, and for him to become afflicted with sores. All these things are merely abuses of a social, technical and hygienic nature, which can be put an end to. Man's sense of precaution is growing stronger to-day and his sense of responsibility for the value and sacredness of human life is becoming more intense as more and more new inventions are made. Intelligence itself will make a vast amount of crude suffering vanish by simply removing the cause.

I admit that this does not exhaust the whole subject. In a certain sense, we can never completely abolish pain with our intelligence in view of the form in which the vital process in our universe just so happens to be taking place. We can never calculate on possessing absolute harmony anywhere. Even if our constantly improving intelligence is able to abolish ever so many crude col-

lisions and provide ever so many iron-clad guarantees against chance, and we already feel like painting a picture of extremely happy conditions which will prevail for a certain period of time, yet it lies in the very nature of the principle of harmony, with its incessant tendency toward intensification and higher development, that these happy conditions too are one day bound to be felt as sorrowful, compared to the ideal of still better conditions, and that they are bound to be resolved and destroyed again in the face of progress, which will again be connected with pain of some sort. We shall not be able to avoid this transition pain in some form or other, even if we evolve along the most brilliant and purely ascending line. The pain of longing and the pang of parting will remain spiritual powers, no matter what heights the evolution of intelligence attains. These powers of the soul are too firmly lodged in the eternal striving for the absolute ideal itself. Whatever power conferred this upward road to the ideal on the world likewise inseparably connected those spiritual forces of pain with our world. Here lies the pain of happiness itself; the eternal price of happiness on the road to perfection; the shadow of all our ideals and all our love; the eternal, gentle breath of sadness on the road to what is better, which buries what is already good. Herein lies the fundamental fate of existence. No road runs through this land of mystery without entailing some sacrifice and renunciation on the traveller.

And yet, who can deny the wonderful fact that intelligence signifies at least a turning-point toward a progressive mitigation of soul-pain from a certain stage on.

Though pain remains, the attitude of a being of ever higher intelligence will be a different one toward it. In the face of the inevitable, two of the highest properties of intelligence will achieve supreme power.

The one is the love that seeks to assuage suffering and that goes out to every victim of life with infinite pity. On the one hand, it knows that it is passionate love which forever sweeps us along and eternally impels us to wander in search of greater happiness and thereby makes victims. But it also feels the sacred mission in its breast to turn a second face of love toward these victims, honouring the sacred martyr to the cause of the better in all who go down, and seeking to cool their wounds.

The other sublime property of intelligence is receptivity to pain;

the victim's voluntary renunciation, the willingness to drink the cup of sorrow, knowing that only in this way can the ideal triumph. It has come to know the sacred character of this ultimate pain, which no longer is a matter of idiotic chance, but is now an eternal necessity for scaling the heights of the ideal. It has recognized this necessity to "die in order to live again!" and has made up its mind to accept this with all its consequences.

Both these properties of intelligence—proudly call it overcoming pain or modestly mitigating pain as you choose—already run through all the best elements in our civilization. You see sympathy walking through our ranks with an urge which nothing can stop. You already see pain and renunciation shining through the best of human beings, who even give up their life when they are fired by the consciousness of the value of the ideal and when their faith is firm as a rock that their own sacrifice will serve the ultimate attainment of the ideal. A Christ lets himself be nailed to the cross in this belief, and a Giordano Bruno cheerfully lets himself be burned at the stake. The explorers, who perish wretchedly in the wilderness, and the inventors who voluntarily give themselves up to the dangers of their work, act in this faith. This is already happening in our time, amid so much darkness. What will not the future be able to forge from this ore? I can imagine a standpoint for seeing through things, where all pain and every task involving renunciation extending even to the most commonplace matters of everyday life would be borne with perfect courage as an eternal still sacrifice on the altar of progress—a sacrifice in the sense of suffering but also in the sense of sacredness.

Not for nothing does the name of Christ rise up at this very point. These two simple attitudes toward suffering are already inherent in full force in the profoundest symbolism of Christianity, which all its subsequent débris have been unable to bury: in the picture of the cross on which Christ hangs, having voluntarily taken suffering upon himself and triumphed over it, and at whose feet compassionate women stand.

In reality, it is not a mythical super-world which is speaking to you out of this most moving of all dramas, but the profoundest thoughts of civilization's awakening intelligence. And here, too, lies the ultimate heart of what Schopenhauer meant when he pictured the holy man, who passes his life in and gives himself up to pity and voluntary renunciation, as triumphing over pain. The

only difference is that pity is not put into practice and the spirit of renunciation cannot really be put into effect in the cowardly and egoistical retirement from the world in a dirty hermit's cell; and that they do not aim at the mistaken attempt to negate the world, but that they draw their strength specifically from the eternal and unrestrainable "onward and upward" of the world-will and that they believe unswervingly in the great gospel of work—work which leads to paradise, even though it be by the crucifix and death.

It is midnight—the hour of ghosts and dreams.

Mount ever higher to your stars, says the sceptic; you will not succeed in banishing one thing from your world. You can never do away with what happens to the individual past consolation; for which there never can be any consolation, because the individual is dead. Take any poor mortal who has been tormented to death. He knew nothing about all your harmonious ascent; he did not voluntarily resign himself to any fate and the love that reconciles never found him. Fate gave birth to him and started him on the wrong road; it visited sins upon him whose only sin was to be born; and blind chance in existence further marked him for its own. And now the grave is mounded over him. Never again will he be among those present. No higher ascent of evolution can reach him any more, nor any higher harmony reward him. The world martyred him and now remains forever silent as far as he is concerned. Is a single case of this kind not enough to justify pessimism? You cannot banish from the world the pain and injustice which have already occurred and for which there can never be any mitigation or solution, because death has cut the connection with life.

I could give you the same answer as once before—that the great mystery begins for us at this point. Everything pertaining to death is wrapped in mystery. The rest is silence. But silence is not necessarily nothingness. It is a curious circumstance that the problem of death is continually treated too lightly from the most widely different standpoints. One man joyously builds himself a super-heaven over death, as if this brief step could all of a sudden do away with all the tremendous forces of nature, all the glories but likewise all the demons constituting the occurrences in the universe to the eyes of the most distant stars. You cannot finish

with nature as easily as that. Life is too earnest for that sort of death. Others believe that they have said everything there is to be said with the one word "nothing"; as if this too were suddenly a door leading out of things. Where does this "nothing" exist in a united Nature? It is certainly a truth, and I led you fearlessly to it, that our individual death in the special organic form holding good for us first originated in the primitive realm of cell life. But the infinitely greater question arises behind this truth as to just what an individual is. This problem of coming into existence and passing away again is in turn contained in a still more important one: how matters stand generally in regard to "form" in the destiny of the universe. Where does the form disappear to when a thing disintegrates? In the final analysis, this problem embraces the Sistine Madonna as well as every human brain. It is not contained merely in the little heap of ashes or the last little complex of energy remaining after you have cremated a work of art or a human brain. Does it pass out of the world, the undivided world, through a trap-door after all? Nature has no trap-doors. Then what becomes of the form of things? Questions. We see that nature incessantly produces endless quantities of forms. Solve this question of why things differ, this fundamental principle of separating and individualizing in nature. All selection and all evolution proceed from it. We are human individuals because of this principle. Whence does this stream come rushing up? Can you really see anywhere into this darkness, into the subterranean, elemental currents of things? If you connect your question with death, you will inexorably sink it somehow in the shoreless mystery. You can draw neither optimism nor pessimism from this unapproachable bottom. They are supposed to be answers, and there is no answer here.

I often think that it is a profound cosmic dispensation for us not to have any quite sure opinion about the problem of death. Weismann once said it seemed to him as if a certain limit to a knowledge of the world had been drawn and respected by the law of utility. That a being at its particular stage of evolution could only possess just so much real knowledge that its own existence would not be menaced thereby. This idea could be applied to all pessimism. But it would really have a very tangible meaning for the question of death. If we knew quite certainly that

death was the absolute victory of chaos, in fact of "nothingness," it would surely impair the joy with which we would work in life in the long run. But if we knew with equal certainty that compared to this life death was pure bright bliss in the soft arms of a houri, that too would be dangerous: a mere toothache might make us reach for a pistol to make this easy favourable exchange. In doubt and darkness as we actually are, we in any event face our task, which is clearly before us, namely, life, and do our duty. Perhaps it will some day be granted to a higher stage of intelligence, which would have the moral strength to prove its worth in this life's work under all circumstances, to break this seal of mystery.

I should further like to remind you that in a certain sense death has its blessing within it in the face of the individual's suffering. Death prevents pain, which cannot be checked, from lasting to all eternity. This fact is by no means immaterial in a world of natural selection with its victims. Death weeds out the false experiments and the failures which never will succeed in that form, after a brief struggle instead of having them eternally suffer. Death gives the hapless martyr at the stake at least the one certainty, that there is a limit to his torture; and when distress grows too great, things regulate themselves, and death suddenly takes all pain away and smilingly foils the fiendish cunning of all torturers.

But all this still does not exhaust the matter for us. Let me linger for a moment over the mystery of "form."

The "form" exists, we know not how; it functions as a central point during its time and passes away. But the strange thing about it is that in a definite sense the form also does not pass away and never can pass away, once it existed. Disintegrated, scattered and distributed in a thousand effects, it continues to exist as a whole beyond all destruction in nature to all eternity. Whoever could gather these effects together again in one focal point, could at any time put the form together again and resurrect it in the truest sense of the word. And then its effects would emanate from it anew just as before. Think of the Sistine Madonna. It exists in the universe as a definite power complex, which can never disappear. Suppose it were burned up with the art gallery in which it is hanging; and an all-surveying intelligence, which was able to calculate everything which had ever gone forth from this earth, would find the Sistine Madonna again in his calculation and would be able

to put it together anew in all its glory. In this sense, there is no end, no death of form in the world.

Our brain is one of these forms. Here, too, the eternally given fact is the immortality of effects. We observe the phenomenon of the ego, of consciousness in connection with the brain. This phenomenon is missing, you say, as long as the effects produced by the brain are merely swarming around loose. At least, our knowledge fails us here, and darkness wraps us around again. But it remains certain that this ego is in some sort of relation to the functioning brain so that it would be on hand again the very moment the brain were to be restored.

This idea is, it may be said, a matter of course to our scientific thought and knowledge to-day. We quietly assume about ordinary organic metabolism that during our individual lifetime it has already repeatedly and quite quietly been removing the physical element in us and just as quietly replacing it again in the same form, without our ego having noticed it at all, so smoothly did the process of replacement take place. When the embryo in the womb finally develops a brain anew after diverse preliminary stages, no scientist of to-day doubts that the highest soul element which belongs to it is now beginning to function as well. Whether or not it is only a dream of chemistry that some day we shall be able to produce living cells artificially in our laboratory, all our chemists and physiologists who consider that this problem can be solved assume as a matter of course that if they were to succeed in artificially producing the definite "form" of the organic cell, its chemical and physiological structure, the phenomena of life would promptly put in an appearance, including the simplest sort of sensation which undoubtedly is in turn the fundamental phenomenon of all consciousness. The highest ganglion-cell in our brain is merely such a cell in principle after all.

This train of thought certainly does not yet exhaust the whole problem of consciousness. It affords us only an external clue and leaves the spot open where the deeper part of the problem is touched. The appearance of even the simplest occurrences of sensation in the simplest primitive cell, of the surveying consciousness of the ego in a ganglion-cell, and what is even more remarkable, in a complex of such cells are things which we are very far from seeing through clearly, even though they are clearly very natural. And here at the very end (as throughout our whole conversation)

I should again like to leave you perfectly free to think as you will about the actual relation of the so-called soul-element to the so-called physical element; the well-known different ways are applicable at this point as well. I should merely like to hold fast strictly to one thing here as everywhere, and that is that no matter how you choose to think this relation, you will not deny the monistic principle by crediting the physical to nature's account and then having alien supernatural hands intervene with the spiritual element in the texture of nature's work. If mysteries remain here, let us seek them in their full extent within nature itself, which truly has room enough for them. In that case, you must always somehow maintain the proposition that the conscious spiritual element, even in its highest kind and supreme individuality, would be promptly on hand again the moment the physical form of the brain were produced on the scene again capable of functioning.

As was said, the materials for putting the brain together again continue to exist unchanged in the world to all eternity. And in this sense (it is but one of the many curious thoughts which could be spun from this point) it is not so absolutely true after all when you say that whoever is dead is removed from all further evolution in this world according to all logical possibilities. If you give evolution infinite scope, you cannot by any means determine where and when evolution might find this material, which is constantly on hand, once again and gather it into a new focal point and play it in the game of life again.

In that cycle theory, which imagines that the universe keeps on returning again and again after long periods of time to the identically same totality of form according to the eternal law of like causes producing like effects, you already have the consistent idea that all our brains too will eternally rise up anew and with them our spiritual individualities with the identically same content and destiny as before. This "eternal return" would be just as unimportant as it would be tiresome, and I do not believe in the cycle theory, but on the contrary I consider eternally higher evolution to be the true principle of nature given in experience. I could imagine the old forms being really concentrated and gathered anew only in connection with continued higher evolution. With this idea we approach the other important thought that the

immortality of the effects produced by everything that had once existed in individual form might afford the possibility, in the infinite variety of the cosmic occurrences which followed, that the seemingly disconsolate fate of all who were troubled and heavily laden and who remained lying by the roadside anywhere at a certain stage might somehow be found again some day by the progress of the whole and carried up to greater heights of evolution.

Ideas running in this direction must necessarily keep an entirely vague character in view of our existing ignorance about the fundamental mysteries as well as the further upward evolutionary roads of nature. But I do maintain that these things may be thought by imagination which at least does not contradict any known facts, and that they must be thought whenever any fundamental question about the universe like light or night has to be discussed.

The general idea that the cosmic course of upward evolution might reach back and make use of seemingly lost stages of evolution can be expressed in an interesting special sense.

Recall that from a certain stage on, the great increasing line of higher evolution aims at the intellect, and that this signifies the triumph of ever higher and more powerful intelligence in the universe. Then say to yourself that along with intelligence, technology —the mastery over all material effects in the course of nature— would be bound to be constantly raised to a higher degree, until it approximated what Du Bois-Reymond once characterized as the "formula of the universe." By this he meant the ideal of science succeeding in the search for knowledge to the ultimate degree, having calculated all mechanical occurrences in the universe and possessing them in a single mathematical formula. On the practical road which our scientific technology has long been proceeding along, the ability to calculate and reduce the universe to a mathematical formula would likewise signify its complete mastery. Such a stage of intelligence would also possess the key to the past. If the Sistine Madonna had long crumbled to dust, this intelligence could restore it from its effects which continued to exist in the universe; it could piece together the long lost rôles of the ancient Greek tragedians or Tacitus' historical works. But it could do even more. It could calculate and combine old bodies and old brains again. To do so (Du Bois-Reymond is absolutely right on this point) this intelligence would not need to have solved the actual mystery of the relation between body and soul. For

this much would be certain, that with the reconstruction of these brains, the old soul-processes to and including the formation of the ego in consciousness would likewise be on hand.

Suppose you were further to imagine (we have spoken about the necessity of this matter) that the ethical element, sympathy, helpful love, and a sense of justice in the noblest sense of the word had become correspondingly developed in infinitely highly developed intelligence. What we already feel to-day would be bound to live incomparably more powerfully in that intelligence: namely, the feeling of the injustice about the course of the world in the case of those who were lost by the wayside, the transition victims and those who died too soon.

And therefore it would actually be necessary to go back and awaken the past. For this intelligence would have the power to do so!

Something like rising again at the last day would begin for the old buried pioneers.

But it would not be a Last Judgment.

For a sense of justice, which is more clarified and surveys things from a higher viewpoint, as it undoubtedly is already breaking through among us at our best to-day, must long ago have been holding absolute sway in that intelligence: a quality of justice which would have come to realize that reward and punishment after all represent only small relative values at certain stages of utility within evolution itself. All this would long ago have been abolished along with the earlier stages of progress. The same thing would be the case after a very few centuries. Who would still want to punish a Nero whom we had awakened from the dead? History has gone much too far beyond Nero, and as far as he was concerned in it, everything turned out well. What is Nero to history any longer! After all, history used him as leaven; just as, seen from a certain distance, the worst criminal was invariably a martyr for the cause of changing some general condition which was harmful to society in the end. And no man created himself. He came into the world with his dispositions of character, whatever they were. His contemporaries may have taken measures against him in self-defence, or may have wanted to do so. But whoever surveys world history to its roots cannot sit in judgment.

What that brave poet, old Visher, wrote holds good here—about

the man who wants to stand before the throne when the trumpets proclaim the Last Judgment, and ask: "Why didst Thou create me?" Infinite pity can do nothing but shed its light on everything there, particularly on the innocent victims, the martyrs to natural selection, the offshoots which with the best of intentions drew nothing but blanks in the game of life! And on the children, who did not even attain to a little light in their time! At bottom they would all be children, all those of former times who rose again. There would be a totally different purpose to the whole proceeding than crude punishment or crude reward. The principle which we already discussed once before, would hold good here: educating, clarifying, upward evolution by gentle schooling to the heights which had meanwhile been attained. There is a symbol of this solution at the close of Part II of Goethe's "Faust"; a symbol of how all are redeemed who have striven, even though in error and under a curse, like Faust and Gretchen. Endeavour somehow won out in the end and achieved a higher plane. And this at the very end redounds to the benefit of all. No greater triumph can be conceived for the affirmation of existence despite all misery.

There is no doubt that in the real cosmos, in the material world as it were (but "material" in the right sense of the word), this picture of the future would show the fulfilment of what we timidly divine and call the "moral order of the universe."

In truth, we are not actually living in a moral order of the world. The ideal of this shines in the minds of many men who are striving toward it on this earth, but that is all for the present. I think the same thing is true of many other intelligent beings elsewhere in the universe, but this is something which cannot be proved. It is demanding a tremendous lot to expect that this ideal, which is harboured by a few little human specks in an indifferent Titans' world of the magnitude of the system of fixed stars, would ever be achieved anywhere. And yet nothing else would be needed to realize it than the eternal progress of higher evolution: increasing evolution toward intelligence in the whole universe; the triumph of this intelligence in the field of technology; the ethical strength to keep the ideal constantly in mind; and intelligence finally becoming lord of the cosmos in the service of the idea of a moral order. Then we should have the miracle of these dwarf human hands, during endless æons of time and evolution, having compelled

the transformation of solar systems and systems of fixed stars in the direction of their human ideal. Remember the old saying: "What shall it profit me to gain the whole world if I have not this. . . ." But suppose we did gain the whole world, and did have this. What if we gained the world through the technical mastery of intelligence, and had love. . . !

This little earth is the only example which we have. But what happens here cannot be of no consequence symbolically. It awakens conscious intelligence. Human intelligence at first finds its measure of value fully expressed by the harsh dictum of the law: "an eye for an eye, and a tooth for a tooth." At bottom, this is merely the conscious, though the clearest possible, expression of the old law of causality, which had already established itself as a real factor at the ichthyosaurian stage of the earth's evolution. But increasing intelligence struggles for and achieves something higher in its need, and already does so on this earth, while the harshest form of justice in that other sense does not seem even clear, but leaves everything in confusion. This higher sense of justice preaches: love, forgive, have pity, extend your knowledge beyond all barriers in order to attain a much freer moral vision. The stage of Christ rises above the intellectualized ichthyosaurian stage. And it already does so here on earth, in so much darkness! On the planet of work and need, as Lasswitz once called it! And hardly has this stage come upon us, still seeming half like a fairy-tale, like the dreaming voice of longing coming out of the night, when the tremendous epoch of the technical conquest of nature sets in among us, and we are still in it to-day. Should we not carry this thought further, and think it out in cosmic terms—the stage of Christ, extended throughout the universe by the ultimate triumph of technology?

If we could do so, if the best of us in their most inspired moments could do so, we would already attempt to adjust the universe to the ideal of a moral order. We are all the time dreaming and talking about this. This dream is so strong in many of us that they extol the triumph of the moral order in the universe as if it were already achieved. This is premature. These people mistake the ideal and work for victory already won. But let the intellect continue to evolve increasingly along the same line. Give the intellect the power not only of knowing but of being able to do

things. Let the intellect achieve itself, through natural selection working with world systems or otherwise, ever striving upward until it is finally victorious. And the ideal of a moral order in the universe, as a reform instituted by an act of intelligence late in the day and achieved by constant striving in the course of immeasurable evolutionary work, is likewise bound to be realized in the end, daring as it seems here and to-day.

These are wandering thoughts, and this road too will naturally lead you back into the mysteries of the universe in the end. Those processes in the remotest future would constantly have to unroll eternity backwards. But at the same time, upward evolution would be going ever farther forward in eternity! If the just and moral element in the highest sense were once as deeply inherent in the structure of the universe as gravitation is to-day, for instance; if it were a matter of course that the government of the universe was entirely in the hands of intelligence, which no longer worked externally with blind natural selection but directly toward purposes which are clearly seen, and more specifically in the direction of moral order; if all the past in sight, or at least all conscious intelligence which ever existed formerly could be entirely taken up once more and employed in this game: in that case, new phases of evolution, about whose course we can have not the slightest inkling, would be bound to begin again. New ideals rise up behind each one which is attained. The individual temporal form of an ideal will finally become reality. But just as necessarily, the fundamental concept of the ideal itself keeps on dissolving in eternity. Here ends the arch of our knowledge. Eternity appears in all directions as the absolute blue horizon of nature's ultimate mysteries.

But we must not let this confuse us. We must seek the light as far as our vision reaches. More light as a guarantee of victory over darkness: that is the weapon against pessimism which leaves us the courage to love; love in the arms of a beautiful young woman as well, because our picture of the universe shows us that other comprehensive and utterly great love on the cosmic globe as ruling in the end—the love of which our most passionate embrace here on earth is but a small part and a mere reflection. And we have the courage to love because in the end the eternal Madonna rises up out of nature too and our every least little dream of love is an

"eternal striving" which is helping to create this Madonna in nature.

Take the simple thought of loving one's neighbour, which suddenly struck a few human beings as the innermost heart of nature, after so many suns and primitive cells and ichthyosauri had passed away. And behind this simple thought set down all future æons, during which the force of nature and the logic of nature will never die, but will simply bring things to a higher and higher peak—the æons which will belong to the scientist, who will make the light of a star run through boundless space for billions and trillions of years. Then you will be thrilled to the last fibre of your being by the old saying in a new form: "love never ends." Love, too, will wander like the light of that star, and by virtue of that "never" it is bound to conquer the depths of space and the distances of time, both forward and backward. The sceptic about the world says: "all is over." With equal right I say: "all is love."

You can call these last trains of thought religious ideas. Every powerful concept of the universe, which equally embraces the knowledge and the courage of civilization's work, must have these two stories: a substructure consisting of the temporal stage of knowledge, slowly and quietly and incessantly increased by the unswerving work of absolutely free search for the truth; and a superstructure in which the logical consequences of our ideals are projected, with the ultimate blue of the great mystery above it and on the whole with the unmistakable mark of the religious element upon it.

Mephistopheles smiles. He is of the opinion that this structure is no longer a possibility in our age; that a gulf which can never be filled in again separates science and religion from now on; that the results of scientific research no longer make the projection of ideals possible; and that religion must combat knowledge and its freedom on that account. Mephistopheles smiles because he hopes that both parties to this conflict will perish.

In reality, all this is only a transition state of mind. The religious element cannot permanently renounce the ideal of unconditional devotion to the search for truth at any price. The work in the field of truth, which results from this ideal, scientific research and its gain in knowledge, are bound to be sacred to religion. On the other hand, a real impossibility of projecting our ideals into the universe does not in any way grow out of our pres-

ent stage of scientific knowledge. Thought may rove or hurry on ahead. It has a perfect right to do so in the superstructure of a picture of the universe. But thought may already feel that it is not flying in the face of the results of scientific research but that it is wandering along the logical line of conclusions from truths that already exist. We are still far removed from the tragic case of the small sum of our real insight into the universe necessarily annihilating our ideals. For if we lost faith in the power of the ideal generally, the simple power of the working ideal expressed in the search for knowledge would slowly and inevitably fail. If everything were in vain, it would in the end no longer pay to seek knowledge, any more than it would pay to love.

Mephistopheles will keep on losing as long as idealism in this form cannot be broken down in us.

But on the other hand, for as long as the power is granted us really to confer a view of the universe on our ideals and therefore extend intellectual values to cosmic distances of evolution, we must be permitted to apply our ideals to the past, for after science has gained a retrospective view of the universe, the application of our ideals to this historical perspective will in turn yield a high value in the form of unfolding ideals, dark and hidden and remote from all higher intellectual and spiritual elements as the ways of evolution in the past may long have seemed. A vague dawning light of ideals fighting their way through must come into the whole tremendous drama of the historical origin of the universe. This light falls on nebulæ and Milky Ways and suns; it embraces the falling stone as well as the first cell which is taking shape, and the green leaf which bends toward the shimmering sun under fixed compulsion as well as the first beginnings of a brain which begins to think in a higher sense. And this light applies to love, wherever love may make its appearance in this whole infinite course of nature.

This thought at last does really reconcile the picture of that gnome of the woods, the baboon in whom the whole wild love of the senses is still breaking forth demonically from animality, with the chaste mother of love in her lotus flower and with the luminous figure which floats above the clouds, sublimely spiritualized as the queen of love.

This tremendous romance of love-life in nature, with all its madness, its pain, its blindness and brutality and all its sweetness and all its light, is the pilgrimage of an ideal.

Let us say good-bye at the summit of this thought.

Enough now, Friend: would'st thou
Read more about the latter,
Then go and be thyself
The text and subject matter.

says Angelus Silesius once more.

Farewell, friend on the shore of the blue cosmic sea. The old vault of the cloister's narrow cell is gone, and the eye drinks in the boundless blue horizon for a last time. We began our conversation on the wondrously blue Mediterranean, where the silvery little ships melted away into the sheen as if they were hovering between a dream and reality. We continued our discussion at a lake where hooded grebes with white breasts strove from the shore's green wreath of reeds out into the distance; and we did so in a spirit of truth and the whole truth, even when it seemed harsh and petty. Let it end in the empyrean blue of super-suns and dreams, where worlds run down like silvery dust and where dreams and hopes sail on beyond all worlds like little boats—the dreams of the spirit's strange children floating on the immeasurable blue waters of the great mystery.

Do you see the day-flies once more, reeling in their white elfin dance over these waters, drunk with love and death? Do you see the silvery island of love composed of grotesque passionately kissing fish rising spectrally out of the sea once more?

But do you also hear love pass from the dull bass of their groans of sensual pleasure and their cries in the breeding season to a deep, significant peal, fraught with mystery and yet peaceful. . . ?

The thrills and wonders of Walpurgis-Night are ringing softly. The sound becomes clearer, and sings of the spirit.

Listen!

The greatest thing of all, which is worth more even than love, rings through all its melodies. It is the creative Word, which made worlds and makes better worlds out of these worlds, the triumphant word of all fulfilment and at the same time the still word of resignation in the face of all temporal limitations in the narrow chamber— Yearning.

THE END