QUO VADIMUS ?

TO-DAY AND TO-MORROW

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QUO VADIMUS?

SOME GLIMPSES OF THE FUTURE

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QUO VADIMUS?

SITTING at my desk by a cosy and up-to-date gas fire on a foggy day, with tufts of mist steadily rolling up from the swollen waters of the wise old Thames, I try to realize that I am travelling through space at a rate of over a thousand miles a minute, on board a minor planet in forced revolution round a vast white-hot globe nearly a hundred million miles away.

Somebody has called astronomy the Futile Science, and I am not at all sure that the epithet is wholly undeserved. What do the stars matter to us? There was a time when they

were believed to have an influence on human affairs, particularly those of kings and emperors. To-day they are insignificant specks at an immense distance from us, a distance so great that if they all were utterly annihilated neither we nor our remotest descendants should experience the smallest material effect.

The only assignable value of the stars to us, beyond the general enlargement of our mental horizon, is that they serve as an accurate measure of time. But even that use is now almost superfluous, since other absolute standards of time have become available, such as the rates of disintegration of the radio-active elements.

How, then, can I account for the fact that there is a perpetual fascination about "the heavens," that books

are constantly being written about them, societies founded to study them, and vast observatories built to watch them?

It cannot be simply the thirst for knowledge. Knowledge in the abstract has but few devotees. For every one person who wants the Truth at all costs there are a thousand who want an Illusion at all costs, even at the cost of mental balance. Let a man go about proclaiming truths ascertained by research and experiment, and he will be considered a bore by all except a few specialists. But let him boldly assert an absurdity or a paradox, and he will obtain millions of adherents, all animated by the Will to Believe. And the more absurd his assertions, the more self-assured and fanatical will be his followers.

No, the popular interest in astronomy is not due to a thirst for accurate information. It is due to a vestige of the old astrological belief in the significance of the constellations. We still try to "read our fate in the stars." They are of interest to us for what they can tell us of the future, proximate or remote. We search the heavens for an answer to the question "Whither?"—*Quo vadimus?*

In trying to predict the fate of the human race we must begin by gauging the chances of permanence possessed by our habitable globe. Its probable age has been put at a hundred million years. Predictions as to when it will cease to be habitable vary enormously, but the latest figures go into many millions of years, and the discovery of radio-activity has had the effect of

greatly postponing the general freezing up of our planet.

Our earthly habitation, then, seems assured for many millions of years. But millions of years are, after all, but relative, and they vanish before the vast age of the stellar universe[1] and the enormous vistas of time yet to come.

How far can our gaze penetrate the fog which obscures our future? Can we build for eternity? Must we prepare for a catastrophe or an inevitable decay? Can we assure to our descendants an indefinitely prolonged future of perpetual progress and ever-increasing happiness?

The answer to these questions is ultimately based upon psychological

[1] Dr. Jeans, on very modern data, puts this age at seven million million years.

factors. Human life requires certain physical conditions for its maintenance. It also requires the passive assistance of many forms of animal life and plant life. But Man is, without exception, the most adaptable inhabitant of this globe, and there is little fear of any physical or biological factors bringing about his extinction, provided they change sufficiently gradually. If life is adaptation to surroundings, then Man has more chance of surviving changing conditions than any other form of terrestrial life. What other species can thrive equally in the Arctic and under the Equator? The dog is man's only rival in that respect, and is but second best.

We need, therefore, not be anxious lest a change in general physical environment bring our race to an end.

The end of the human race, if ever it comes, will be due to the human race itself. If the race dies, it will die by suicide. And suicide is a matter of psychology.

Let us examine the possibility of a voluntary euthanasia of the human race. It seems the only sort of suicide that is at all conceivable. Can we imagine a state of things arising in which the leaders will say: "We have lived long enough. Our race has had a glorious history, let it have a glorious end. We cannot and will not bow to the new conditions imposed by Nature. We would rather die and end it all. Let us all perish together."

Such an attitude would indeed be a new phenomenon. People have died rather than surrender, but it was with the thought of the approval of their

fellows and the perpetual honour of their names. In the case contemplated there would be no such inducement to heroism. The surrender would be unchronicled and unsung.

A refusal to adapt itself to new conditions is not unknown among savage races, nor among classes of civilized society. Tribes have perished off the face of the earth, owing to a voluntary refusal or to inability to adapt themselves to new conditions of life. But, so far as we know, this has always taken place in the presence of races of superior adaptability.

Civilizations have perished. We do not know, of course, how many civilizations have disappeared without leaving a trace. But we do know that races have existed, even in our own islands, who were capable of transporting and

building up great pieces of rock, and of arranging them in an astronomically significant manner. Did these races perish under the attacks of an enemy? Or did they die off owing to the exhaustion of their own vitality? We may suppose that it was the former rather then the latter alternative. For in view of the great and increasing power of the human race we hardly need fear any enemies from without. Our destruction, if ever it comes, will come from within. It will come if and when we develop a Will to Die.

Such a Will to Die has been observed on a small scale in the wave of suicide sweeping over Central Europe after the Great War. But it was only a symptom of readjustment. It was partial, and practically confined to the class bound up with social and govern-

mental stability, and incapable of adaptation to radically changed conditions.

A more ominous phenomenon is the fall in the birth-rate of most of the insular tribes of the Pacific, which in some cases has led to their total extinction. The causes of this fall have never been fully cleared up. If it is due to the introduction of diseases by Indo-European germ carriers, or the adoption of modern clothing, or the destruction of native standards of morality by the introduction of Asiatic religions, there is no cause for alarm concerning the future of the human race as a whole. But if the mere discouragement of the tribe when faced with new conditions can act directly upon the instinct of procreation, and affect, so to speak, the *élan vital* of

the germ-plasm, then we are faced with the gravest danger to which the human race can be exposed.

For such an effect would be too insidious to be dealt with by public measures. It would be a psychological disease of the most fatal and virulent kind. It might affect the whole human race during some crisis in its fortunes, and might bring about its destruction by the failure of the sex instinct.

Although such a failure must always be a menacing possibility, it is a remote one, and at no time has it threatened the human race as a whole. Hunger and Love have kept our race going up to now, and, barring unforeseen developments, they will do so *in sæcula sæculorum.*

But there are other dangers. A new germ might be evolved which, like the

gonococcus, might attack the germ plasm, and produce general sterility. This is one of the dangers that *can* be fought by hygienic and sanitary measures, and the wiles and intricacies of bacteriological novelties may be safely left to the ever-increasing resources of bacteriology itself.

Again, there is the danger of new "rays." It is now a well-known fact that X-rays produce sterility when penetrating the human body in considerable strength or for any length of time. The effect can be guarded against by an armour of lead screens. X-rays are cut off by a thin sheet of lead. There are other rays, known as gamma-rays, which can penetrate several inches of lead. And higher up in the atmosphere, about seven miles up, another kind of radiation is found from which

even a plate of lead five feet thick would be no protection. If the sun, entering an unknown part of space filled with denser matter, were to develop a form of radiation leading to a considerable increase in the penetrating atmospheric rays, the persistent action of these rays upon the human germ plasm might bring about the total destruction of the human race by reducing its birth-rate to zero. The effect might not even be discovered until it was too late to remedy it. And even if it were discovered in time, the action of the rays upon all life on the earth's surface might have produced havoc enough to stop all food-supplies and produce universal starvation.

It is difficult to see how even the greatest resources of science could meet such an emergency as that. But

short of such a new danger, there is little doubt that the resources of humanity will be able to meet all conceivable situations which may threaten it with destruction.

In order to ensure the indefinite continuance of the human race on earth, it is necessary

(1) to maintain adequate food supplies and (2) to conserve the procreative impulse.

The latter condition, might, indeed, be put first on the list.

These are the conditions of bare existence. Progress and happiness are, as they always have been, secondary considerations. Many minds have regarded one or both of them as unessential. Thus, it is not at all necessary to contemplate an *increasing* population of the globe. The leader-

ship of the human race can much more effectively be maintained by educating individuals than by increasing their numbers. And as regards happiness, that can safely be left to take care of itself. All progress is progress towards greater happiness. Even mere existence can be a source of supreme happiness, as when a great danger has been successfully averted.

Once we are sure that the human race has a reasonable chance of indefinite survival, we can proceed to contemplate the changes, if any, which are likely to take place as the centuries and millennia roll on.

Anthropologists put the age of the human race roughly at half a million years. In that comparatively long period—long as compared with history,

but short as reckoned by geology—man has evolved from an ape-like, tree-dwelling nut-eater into a plodding, illiterate, monosyllabic tiller of the soil. (I take the majority of mankind as representative of its state of progress rather than the *élite*.) The 500 millennia of human evolution have had but little effect on the human form and the average human character. The brain is somewhat larger generally and the mouth rather less protruding. The mental equipment of the representative man—the man representing the majority—is in many ways inferior to that of the dog or the ant. He is full of greeds and lusts and superstitions which place him on a level with the higher animal life, or even below it.

It is in his possibilities rather than in his actual state of development that

man is a superior being. Those possibilities have to some extent been realized in the educated few. When we speak of civilization, of modern life and scientific advance, we fix our attention exclusively on the educated *élite*. In asserting, for instance, that nowadays nobody doubts that the earth is round, we are referring to a very small minority of the human race, composed of perhaps half the adults of Europe and America and Australia, with a small sprinkling of Africans and Asiatics, in all perhaps 10 per cent. of the total population. If a vote were taken of every man, woman, and child in the world to decide whether the earth is flat or round, there would be a majority of perhaps 9 to 1 in favour of a flat earth.

Again, "everybody" is supposed to

know that a whale is not a fish, that it does not spawn or lay eggs, but that it suckles its young like any other mammalian. What proportion of the human race actually *does* know that simple fact? How many human beings even know that the sun is larger than the moon? A great many, no doubt, but how many out of the whole race?

Scientific knowledge is the birthright of every human child. But on that very account, perhaps, it is neither prized nor cherished. In the markets where thoughts are bought and sold, an ounce of illusion is worth a ton of fact.

The enormous disproportion between the amount of knowledge accumulated by the human intelligentsia and the general level of knowledge is productive of many evils and anomalies. It

necessarily breeds an attitude of contemptuous superiority towards the uninformed masses, and supplies a temptation to profit by that superiority in order to dominate and oppress the majority. Many wars, strikes, revolutions, and other social crises are the outcome of this anomalous condition. On the other hand, the very existence of empires requires the presence of a great substratum of the half-educated uncultivated to follow the lead and obey the behests of the Imperial few.

The British Empire derives its strength from the numerical strength of its *élite*. The Russian Empire and its direct heir, the present Oligarchy, have had a small *élite* raised above an enormous mass of what is probably the least-educated population in the world, outside Africa. The French African

Empire disguises the hegemony of Paris under the liberal concession of a nominal French citizenship to its subject tribes. The French *élite* is broader than the British, as wealth in France is more evenly distributed. In Germany, on the other hand, and in certain smaller countries, like Denmark and Finland, it is education rather than wealth which is more or less impartially distributed. This also tends to broaden the *élite* and make the nation (as distinguished from the empire) more intrinsically powerful.

We thus get an *élite* among nations as well as individuals. This *élite* is, however, based upon force rather than intellectual leadership, owing to the fact that a nation regarded as an organism is in a much more primitive stage of evolution than is a civilized

individual. Nations have no morality, no curbs upon their greed, their hatred, their jealousy and vindictiveness.

The rivalry among nations makes for progress, but its most active manifestations may produce a serious set-back of long duration, involving irreparable loss.

So long as peace and goodwill do not prevail among individual men it is absurd to expect them to prevail among a collection of beasts of prey such as we have in the nations of the world. Yet it is obviously desirable that the human population of the globe should advance as one man. There is one thing, and one thing only, which can unite humanity into one closely-knit organism, and that is *an external enemy*.

If Mr. H. G. Wells's *War of the*

Worlds were to come true, and an expeditionary force of Martians were to land on earth with a view to its annexation, then the human race might instantly unite to repel the invader. It would be an inspiring sight to see Japanese and Turks, Abyssinians and Zulus, Eskimos and Swiss, Brazilians and Mexicans and Doughboys, Tahitians and Britishers and Russians, Irish and Egyptians, Persians and Chinese, all vying with each other in devotion and bravery, fighting for their native planet against a ruthless and merciless invader.

Without such a danger from without, the close federations of the nations of the world is almost unthinkable. Take the case of Ireland. There we have two nationalities in one island, as opposed to each other as any two nations in the same continent. In the North, a hardy,

stern, rough and unbending type of Scottish origin, who despises the "natives" of Ireland as an inferior race, and makes good by converting a large slice of the "distressful country" into a garden of prosperity. In the South, a graceful and indolent peasant race, with all the mingled diffidence and bravado of a conquered people largely pervaded by the blood of its conquerors, and imbued with the idea of martyrdom for the twin ideas of religion and nationality (in this case, as it happens, quite incompatible). How can anyone expect peace under such conditions? The situation is the very stuff that ruthless wars are made of. The Ulsterman will not "go under" a Dublin parliament run by what he considers to be ignorant cornerboys. The Munsterman looks upon the

"blaack Praatestant" of the North as dirt, which Ireland must disgorge before she can rise to the height of her destiny. England, with her good-natured religious and ethnical tolerance, is despised by both parties, though the Ulsterman clings passionately to the Empire, which he provides with the largest ships afloat.

That sort of thing makes international tribunals and Leagues of Nations look ridiculous. Here are two populations in a small island, ready to rend each other limb from limb on the slightest excuse because the country is not large enough to hold both.

On the other hand, it is an undoubted fact that international trade, finance, and intercourse has increased enormously with improved means of transport. The Postal Union is a fine

achievement towards the unification of the whole human family. Its successful working shows that enterprises covering the entire civilized population of the globe can now be undertaken and carried through. It so happens that the two greatest States of the world, the British Empire and the United States of America, are also the States whose home countries are freest from national intolerance and race prejudice, both consisting of a mixture of many nationalities. It is to them, as well as France, that we must look for the greatest advances towards the ideal of a world federation. Germany before the War cherished dreams of World Supremacy, but lacked the schooling which might have led to success.

The two great Empires—British and

Japanese—and the two great Republics —France and U.S.A.—will, if they can agree, form a good nucleus for a federation of the world. The world, in its present state, requires leadership, and if the leaders are a representative and benevolent oligarchy, it is about the best we can hope for.

Given a reasonable degree of stability, guaranteed by a combination of the best instruments of government yet devised, we may expect a very rapid progress. What direction will this progress take, and what will be the fruits of it?

Do not listen to those futile people who say there is no progress, and that there is "nothing new under the sun!" So far from maintaining that what is has been and ever shall be I should

assert that nothing that is has ever been before, that there are new things evolved every day, and that every child born is a unique personality, unprecedented in the annals of creation.

And not only are things new, but the new things are, on the general average, a bit more advanced than the last. Advanced towards what? Towards perfection, towards greater happiness, a fuller and more enduring life.

Who will dare deny that life in England—to take the nearest example—is happier now than it was even fifty years ago? Some people will sigh for the good old times of the Victorian reign, when money and employment were plentiful, when there was ample leisure for the rich, with pleasant ways of spending it, when masters were masters indeed and servants were loyal,

respectful, and dutiful. But in recent times, apart from the tragedy of the Great War, there has been an immense improvement in the life of the average Englishman and his dependents. The general level of education has risen, infectious diseases have been successfully fought, schooling has become brighter and more effective, clothing has become more rational. There is more fresh air and less drudgery. The workman draws a larger share of the product of his effort, and often drives his motor car while his employer goes by train. The workman draws his bloated wage under the protection of his trade union, while his employer lies awake at night wondering how best to keep the works running and find new markets for old. That is nearly all to the good, since there are many more workmen than

employers, and the general level of contentment is raised.

Even the aged, instead of being thrown on the scrap heap, are guarded from destitution by pensions honourably drawn from a wise government.

It will, I hope, be put to my credit that I have not carolled the blessings of the cinema theatre or even of wireless broadcasting. The optimist who emphasizes these is usually met with the reply that these do more harm than good, and spoil young people for ordinary life. Whatever may be said concerning the dull hotch-potch turned out "in bulk" by the American film industry, nobody can deny that an element of romance has been brought into the lives of countless poor people by Edison's and Berliner's great invention.

As regards wireless broadcasting, it is too early to speak of its permanent effects. It has come upon us like an avalanche. For the first time, it has enlisted youth in the highest electrical problems. It has paved the way for the general diffusion of scientific knowledge while ostensibly popularizing the art of music. In any case, it is a complete answer to Ben Akiba and his saying about there being nothing new.

Mr. J. B. S. Haldane[1] believes that the centre of scientific interest now lies in biology, and that physiology will eventually invade and destroy mathematical physics. It is quite possible that the advance of what physicists sometimes playfully call the " inexact " sciences may cast those of physics and chemistry entirely in the shade, but

[1] *Dædalus*, pp. 10 and 16.

although biology has made some difference to human life in the last generation, its effects cannot remotely compare with those of physical and chemical discoveries. The mere increase of speed in transport, due to the internal-combustion engine, has caused a speeding-up of the whole nervous system and a brightening of the intelligence of all but an insignificant fraction of the population. When the choice lies between the Quick and the Dead, even the most sluggish temperament will put on a spurt, and this continued sprinting across the motor traffic has produced a more agile generation. If such a profound difference can be made in twenty years, what will be the effect of even 200 years of continually accelerated progress?

The continual acceleration of the

rate of progress must not be lost sight of in forecasting the future. It happens to coincide with a similar increase in the consumption of accumulated fuels, like coal and oil, and might be expected to slow down when those supplies of preserved sunlight come to an end. But by that time other accumulations will no doubt have been discovered and utilized.

Unless the Russian blight extends over Europe and America, we may confidently look forward to a long era of steadily accelerated progress. What form that progress will take is notoriously difficult to forecast. The main difficulty arises from the fact that the most promising discoveries sometimes turn out to be impracticable, or at least of quite secondary importance. Nobody prophesied the great develop-

ment of the motor car, nor of that gigantic child of the old Zoetrope or "Wheel of Life" which we call the Picture Theatre. A genius like H. G. Wells could indeed write a marvellously accurate forecast of flying achievements, but in one of his books he makes a great deal of the Brennan mono-rail, which, after a sensational beginning failed to reach maturity, probably owing to the temporary failure of that much-maligned but quite essential fertilizer of inventions, capital. Other inventions, such as the speaking film, bear within themselves certain weaknesses which may prevent them from attaining great popularity.

But previous failures to peep into the future effectively shall not deter the author from another attempt to pierce the veil hiding our fate. He will

proceed by " extrapolating " the curves representing progress made hitherto, but will always allow for unexpected new departures in what are already known to be possible directions.

Transport and Communications.—The most conspicuous changes in our mode of life have been brought about by improved means of transport. Railways and steamships have become essential to Great Britain, largely owing to the fact that food-supplies have to be purchased in exchange for exported manufactures. But even in non-industrial countries the railway has entered very largely into the life of the people. It is part of the essential attribute of life which seeks diversity and a fuller activity of the senses. Life is, in fact, prolonged when it is made

to contain more and more detail. The social life of a person is roughly measured by the number of people with whom he converses in the course of a day. Improved transport means facilities for extending this number. It also means an enlargement of a person's sphere of influence, of his "area of effective occupation." In business, it gives an opportunity of increasing turnover, and thus reducing costs. It also facilitates competition, both in buying and selling, and thus tends to enforce the law of supply and demand and other enactments of what used to be called the "dismal science," but now ranks as the most "actual" of all the sciences.

Postal and telegraphic facilities have the same general effect of diversifying and extending life. The telephone has

produced an entirely new form of social intercourse, and a new privileged class. By acquiring a telephone number, we obtain entrance into a hall where rapid and varied communication becomes an abundant source of activity, information and amusement.

Increased facilities of this kind also tend to cement a nation of one language into a closely organized whole, so that its cohesion and its influence abroad are strengthened. The "temperature" of the national life is raised and it increases in proportion. An increased energy also accelerates the rate of progress, so that it tends to spread like a fire. What this acceleration will mean we can as yet only dimly surmise. A time will come, no doubt, when we may crowd into an hour a variety of experiences which our ancestors would

have extended over a lifetime. We need not necessarily do so, but the mere fact that it is possible will add a zest and a richness to life such as we, with all our advantages, can as yet hardly conceive. But the general effect will be to reduce more and more the limitations now imposed upon us by space. It will no doubt be eventually possible to get into communication with anybody on earth at a moment's notice, provided that person is willing.

Privacy.—The last proviso is important. Civilization not only makes us more accessible to those we appreciate, but also makes us less accessible to those of whom we disapprove. An increase in our area of choice would be of little value if everybody else could choose to intrude upon us at any time or place. A limitation of social inter

course to a chosen few, or its total cessation for the time required for rest and recuperation in a strenuous life is one of the greatest boons one can desire. The rank and file is more gregarious than the *élite* and, as one of the ideals of progress is to raise the masses towards the level occupied by the *élite*, the extension of facilities for seclusion is of the essence of progress. Hence commons and open spaces are provided in and around well-planned cities. Houses are provided with sound-proof walls, and gardens are protected as much as possible from "overlooking." A very modern problem of the same kind is the protection of wireless listeners from oscillations produced in neighbouring receiving sets.

Clothing.—The present generation of civilized humanity justly prides itself

on its sensible style of clothing. Although masculine clothing contains a number of "vestigial" elements which are absurd survivals of former necessities, the practice, observed more especially in Great Britain, of wearing a variety of apparel suited to special occasions and occupations adds a certain elasticity to fashions which otherwise are almost comically rigid. If a man wore a wreath of flowers round his head instead of a hat he would not walk fifty yards in any London street without being arrested for "insulting behaviour" or "conduct likely to cause a breach of the peace." Yet a woman could do so with impunity if she did it with the necessary air of assurance.

The future of clothing is largely affected by social problems. Masculine clothing ceased to be demonstrative in

Europe shortly after the French Revolution. While aristocracy flourished, it paraded itself aggressively in velvet and ruffles and powdered wigs. In modern times it is bad form to strut and swagger, except on very special occasions. Good clothing is not aggressively ornate or expensive. Its quality is a matter of lines and cut and finish. Its preciousness is disguised from the uninitiated. It is like the sober and almost dingy town houses of the nobility, whose splendour is only shown to favoured friends and trusted servants. In 1794 the dress of the "aristo" was a passport to the guillotine. In later and wiser days it is a disguise to deceive the tax-collector and the demagogue, and to lull their prying rapacity into inactivity.

Feminine attire follows the same

principles, modified by the essential differences between the sexes. The ideal of a well-dressed woman varies widely with her surroundings. In bad weather out of doors, or in an unsympathetic crowd, her garments will be a defensive armour designed to reveal as little of her personality as is compatible with her purpose. Under more favourable conditions, they will become a setting made as suitable as possible to the peculiar qualities and attractions of the jewel they are supposed to contain. Not every woman can, under present conditions, be beautiful, but she can suggest beauty at every turn, remind us of beautiful things, and give us that feeling of holy calm which we experience in the presence of beauty, if she will but dress appropriately to the occasion and to her own personality.

These considerations must affect our view of the probable styles of A.D. 2025. Dress appropriate to the occasion! Dress is, after all, a sort of extension of the physical personality. The body of a naked child at play is the most perfect thing in beauty that can be seen. All its muscles adapt themselves instantly to its activities. Everything is appropriate and harmonious. A thin and clinging covering would detract but little from its grace of movement and expression, and might, indeed, add something of force and swiftness that cannot be perceived in the mere play of muscles. Thus the plumes of a Red Indian add to the sense of speed and purpose conveyed by his movements.

I do not agree with Mr. H. G. Wells that the final ideal of clothing is its

total abolition. Clothing has the effect of enlarging man's sphere of activity until it covers the entire globe from the poles to the equator. Another advantage is that it emphasizes mental qualities rather than physical qualities. If mere physical beauty were the one essential to human well-being, mankind would have long ago insisted on its being freely displayed—and judged—without the diguise of clothing.

Instead, a common agreement among civilized peoples insists that on everyday occasions little but the face is to be visible, because its features and expression give a clue to the mentality behind them. On special occasions, such as balls and dinner parties, more may be revealed by the gentler sex, but even then the area revealed must be confined to what is

least likely to show defects and is of least physiological interest and importance, so that the attention may still be directed towards mental rather than emotional or physical qualities.

The evolution of clothing will, therefore, be in the direction of adaptability to climate and occupation. New fabrics will no doubt be invented, combining the warmth of fur with the softness and flexibility of silk and the strength of linen. Dress will be light, so that half a dozen changes of costume can be carried in a handbag, and will be so designed that each change will involve no more inconvenience than does the removal of a raincoat. And so we shall eventually combine the Greek ideal of expressive drapery with the exacting conditions of a strenuous modern life.

Housing.—Man is an animal with a cubical shell. If the earth were reduced to the size of a football and its surface were examined with a powerful microscope, we should see it studded with incrustations like dried salt, especially about the river mouths. These incrustations would be the cities, consisting of thousands of rectangular or cube-shaped blocks. With a greater magnification we might see minute specks swarming about these shell-like houses, elongated specks with their longer axis vertical, and with a marked tendency to enter the houses at nightfall and emerge again after daybreak.

If a giant had been watching the development of these incrustations for several thousand years, he would have seen them spreading from the Mediterranean and some parts of Asia till they

studded the Atlantic regions. Thence, after a time, they would spread to the other side of the Atlantic, and become particularly numerous along its western shores. Watching them again for several thousand years, he might see these incrustations gradually dissolved, and the disease—he would probably call it a disease—become "generalized" all over the planet, the local incrustations giving way before a universal but only slightly crusted condition of the earth's entire land surface.

This is the most probable solution of the general housing problem. Ordinary and wireless telephony, soon to be supplemented by "television," will gradually reduce the isolation brought about by mere space, while underground and overground transport of goods will render the distribution of

supplies less and less laborious. Houses will, therefore, be built more widely apart than they are in cities, and each will have its own private grounds. The structures will be of a material impervious to heat and cold, but transparent or translucent to light, though there will be means of darkening the whole house if desired. Artificial lighting will not be by lamps, but by a close imitation of diffused daylight, which is coolest and most restful to the eyes. There will be no domestic servants. All the "work" of the house will be done by machinery requiring but the turning of a switch and the aiming of implements resembling magic wands. Cooking will be a pleasant domestic art, most of the preparations being made by the purveyors of food stuffs. As it is unlikely that the anatomical

structure and the physiological functioning of the human frame will be materially changed for thousands of years to come, food will not be very different from what it is now, but there will be a nicer discrimination of what foods, and what quantity of them, are best calculated to maintain perfect health.

Children.—Most prophets concerning the future of the human race postulate many and radical changes in the birth and rearing of children. Some say that advancing civilization will make the present process impossible on account of the steadily increasing size of the human skull, which will eventually make normal birth impossible. Professor Haldane forecasts "ectogenesis" or the artificial ripening of the embryo outside the human body

Whatever may happen to the physical act of birth—it will no doubt be alleviated in many ways—one hopes that the tender joys of watching over the development of a child's body and mind will not be taken away from us.

Much more enlightened care will, no doubt, be bestowed upon the welfare of the infant than is done at present. How many crimes are unwittingly committed against a child's mentality by ignorant parents and nurses! Lies and prevarications and evasions are always reprehensible, but with children they are of fatal and life-long effect. We owe the truth to a child more than to any adult. Our promises to a child should be as binding as an oath. Tell them fairy tales by all means, but tell them with a voice and expression

which inevitably stamps them as such and makes belief optional.

I cannot see any effective substitute for family life so long as there are children to bring up. Children feed on love as they do on food and fresh air. and no vicarious love can take the place of the natural affection between children and their parents. The institution of marriage may undergo many and far-reaching changes,[1] but nothing is likely to change the para-

[1] Its early history shows it to be a contrivance for the safe-guarding of infants in their earliest years by allocating a large proportion of responsibility to the father. Among Semitic and other Asiatic tribes this allocation of responsibility was fortified by the somewhat crude precaution of secluding women. Marriage as a means of allocating responsibility will become superfluous as soon as parentage can be infallibly traced with the aid of the microscope, as some biologists confidently foretell. The chief *raison d'être* of marriage will then be gone, but it will no doubt continue for a considerable time as a picturesque survival of an ancient custom.

mount necessity of parental care of, and responsibility for, children. Children are rooted in their parents. They are, in a sense, survivals of their parents' personality, and constitute their chance of physical immortality. It is, therefore, absurd to suppose that the human race will at any time in its history consent to the "nationalization" of its children. On the other hand, the supervision of ill-disposed or incompetent parents by the State will, no doubt, become more and more strict.

Education.—In spite of the prodigious advance in educational methods in the last two generations, education is still in a state of primitive barbarity. We may, therefore, expect some very profound changes in the centuries to come. There is still too much of the methods of the pump about our education.

The idea seems to be that the teacher draws from the well of knowledge and administers copious draughts to his pupils, and when they have swallowed these they are educated! There is no better illustration of this curious view than the modern method of imparting "higher" education. The University lecture is, of all methods of imparting knowledge, about the least effective. The student sits in a stiff attitude and maintains a pose of strained attention. He endeavours to keep his mind concentrated on the words and meaning of the professor. Every now and then he succeeds, but then his thoughts persist in following their own train of associations and the thread is broken. He jots down disconnected notes, hoping to piece them together afterwards. This piecing together is often the only

process which really advances his knowledge. It brings his own will-power and faculties into action. The lecture only requires will-power for concentration on somebody else's thought, and this effort is negative and sterile.

If lectures must be, then they should be interrupted after every ten minutes or so. The lecturer should then sit down and invite and encourage his students to ask pertinent questions or advance sound criticism.

In a class-room it is easier to keep the interest of the pupils alive. Every effort should be made to let the information come from the pupils rather than the teacher. In teaching history, for instance, I should not have set lessons at all, but ask the pupils to collect facts within a certain period, and reward them in accordance with their success

in presenting the facts and linking them up with others.

The education of the future will be like the medicine of the future. Both will aim at eliciting and enlisting the powers of the pupil (or patient) rather than dosing them. For the real learning and the real cure must come from them.

Every normal child is anxious to learn, and can be easily brought to feel and appreciate the intellectual joy of comprehension. But in most children this joy is marred in early infancy by insufficient attention to their struggles to understand the great world about them. It is the years of infancy—the pre-school years—which are most important in forming habits of thought. The closest watch should be kept for early efforts at trains of reasoning. These efforts begin at the

age of three or thereabouts. They are often absurd and ludicrous, but they should be treated with an indulgent and helpful respect, and wrong conclusions should be modified, not by contradiction, but by conviction of the contrary by example. If that is done, the child will learn to trust his own powers of reasoning. If it is neglected, the child's mind will become shallow and unenterprising.

No child that can talk is too young to be asked for his opinion. He will enjoy stating it, and will, as a rule, receive protests or contrary opinions with interest and amusement.

All this may be a "counsel of perfection" to parents who are too busy to look after their infants themselves and are content to entrust their tender minds to more or less incom-

petent nurses. But the future will realize more and more the great importance of the growing minds of infants. In the United States this is to a large extent the case already, and, as a consequence, their infants are the brightest and most delightful creatures imaginable.

Labour.—In one of his earliest works, "The Time Machine," Mr. H. G. Wells forecasts a development of the labour situation very different from that of the ordinary socialist Utopia. He figures an arrangement by which all labour is done underground, and is done by creatures (one can hardly call them "people") whose bodies and minds are thoroughly adapted to their task. The picture seems to be a skit on the Victorian ideal of the "family" upstairs and the servants in the basement, but a grim and novel touch is

added by the information that the workers actually live on those that dwell in the light, coming up at night to take them away in their sleep.

Such a solution, though it may draw some justification from the bee-hive or the ant-heap, is not at all likely to be adopted by the human race of the future. The essential service of Christianity, the kernel which will remain after the mythological and dogmatic accretions have been shed, is to provide mankind with an imagination capable of conceiving and realizing the sufferings of other people and creatures, and the will to remedy or obviate them as far as possible. Through centuries of abuse, neglect and misinterpretation that gift has gradually worked into the mass of civilized humanity. The humanitarian ideal is explicit and

articulate in France, while in England it is disguised under such expressions as "decency" and "playing the game," or "live and let live."

That it has not yet remade the world is due mainly to two causes: the arrogance of those to whom money or social position gives advantage over smaller people, and the hatred and mistrust engendered by this arrogance among the masses.

A workman in a physically fit condition does not object to working. He sometimes feels the drudgery, boredom, or discomfort of it, but if he is a skilled craftsman, his pride in his work gives him an interest and satisfaction which helps him over many hours of toil. What he does object to is to be driven and bullied by an unsympathetic and perhaps unjust overseer, who turns

out the master on every occasion and lets him feel his power. He wants and sometimes admires a leader, but he does not want a slave-driver.

In war, there is the same difference between the "come-on" officer and the "go-on" officer, and the same effect on discipline.

I believe that the co-operation of larger organized masses of men will not only be required in the future as in the past, but that its scale will eventually exceed anything yet seen in our history.

The key to the smooth working of such organizations is the spirit in which the enterprise is undertaken. Let us give two examples, one from the present day and one from, say, the year 2,000.

(1) A.D. 1925:

(a) Navvies required. Apply Eastern Counties Railway Co.'s Depôt . . .

(b) Eastern Counties Railway Co., Ltd. The 250,000 5% Cumulative Participating Preference Shares are now offered for public subscription, payable as follows . . .

(2) A.D. 2000 :

Norfolk Water Supply Undertaking. A public meeting will be held on . . . at the Norwich Auditorium, to announce and explain the purpose and plan of this Undertaking. Workers and Contributors will be enlisted on terms to be announced at the meeting. Qualification papers may be sent to the undersigned . . .

It is obvious that the " contributor " who places his savings at the disposal of the Undertaking must not only not lose them thereby, but must be compensated according to the risk he runs. In effect, he provides the manual worker with the food he requires to exert his strength, and he does so

without any immediate benefit to himself. If, after the Undertaking had got to work, his "contribution" were simply refunded, he would receive no reward for his public service, a service which implied a reduction in his own resources. This would be unjust and would make his treatment worse than that of the wage-earner.

To this simple plea a Communist would rejoin that nobody should be allowed to have savings or accumulated resources or private property of any kind. The absurdity of this contention is very easily demonstrated, but let us add a few hard cases to the usual arguments:—

(1) A tribe of shepherds requires water. There is one man who knows the location of a well. His knowledge is his private property,

which he offers to sell for a number of cows. What should be done, if the man is (a) accessible and undefended; (b) inaccessible?

(2) A girl has a beautiful head of hair, which could be sold abroad for a considerable sum. Whose property is it?

(3) In a small and isolated town, 20 per cent. of the inhabitants have good sets of false teeth. Another 20 per cent. require false teeth, but have no means of getting them. What will be the action taken by the Communist municipality?

The workman going to his work has quite a respectable capital to accompany him on his way. He has clothes to keep him warm, boots to save his feet from wearing out, a set of tools, perhaps

and accumulated stores of food in every muscle of his body. Even if his stomach is empty, he is still capable of work, though it will probably be of inferior quality. There was a craze towards the end of last century for living without food, the idea being that the body was not nourished by food, but by "vibrations" of some mysterious kind. The craze, for obvious reasons, did not last long, but some prodigies of fasting were performed while it lasted, and the leaders of the movement prided themselves on doing their daily work and business as usual. The truth was that, like the badger, they were living on their own fat and consuming their own tissues. In the end they were thinner and sadder, but little the worse otherwise.

Everybody in a physically fit con-

dition is necessarily a capitalist. That arch-capitalist among the animals, the squirrel, jumps on the shoulders of the amiable Communists strolling in Regent's Park and then goes to "rattle in his hoard of acorns."

There will be no discouragement of the acquisition of private property in the centuries to come, but care will be taken that the happiness accruing to the owner is not set off by misery inflicted on others. Misery due to mere envy or jealousy will not be considered, but, as a matter of fact, there is much less of that than there is commonly supposed. The spectators of the Lord Mayor's Show do not envy the Lord Mayor his pomp and magnificence, but they are there to delight their eyes with an unusual display. The crowds collecting at the church

door to see the blushing bride do not come to turn green with envy, but to feast their eyes on something exquisite and heartening to behold.

And the work of the future, the labour of thousands on a great enterprise, will be accomplished in the spirit of adventure and comradeship, like an Arctic expedition, let us say, and the distribution of rewards will be conducted in the same spirit as the prize-giving at a sports meeting.

The spirit of adventure is a most valuable incentive to work, an incentive that is much neglected at present. It is part of the workman's grievance against capital that the capitalist has the adventurous part of the undertaking.

The need for adventure in everyday life is proved by the enormous preva-

lence of betting on horses, which is about the most stupid way of adventuring money that one can conceive. The prodigies performed under some piecework agreements show that it is not the quantity of work that is felt as a burden, but the consciousness of being driven by a will other than one's own. Many schemes of profit-sharing also introduce an element of chance which is most welcome to the worker, though logically it should be under a proviso of loss-sharing in the same proportion.

A profit-and-loss-sharing understanding between employers and workers would make every worker a capitalist. Indeed, as soon as the workers (or the State, it matters not which) are sufficiently organized to guard workers from undeserved destitution, it may be quite feasible to organize public

undertakings without wages of any kind. Each worker would contribute "capital" in the form of a certain amount of work. In case of a total loss on the undertaking he would receive no reward or wages whatever any more than the capitalist who engages in a profitless scheme. If the undertaking succeeded, he would have a permanent interest in the revenue from it, in proportion to the work contributed. Since it is easier to assess the value of manual piece-work than mental work, it might well happen that, though no wages were paid, salaries would be paid to organizers, architects, overseers, and the like, who would thus be the only "proletarians" in the concern!

Government.—"The first duty of a Government is to govern." This

platitude sounds as if there were some hidden pearl of meaning behind it. But on etymological analysis we find that the duty of Government is to work the rudder of the ship of State. It is to give a general direction to the activities of its citizens. The same or a similar word is used in all countries based upon Roman law and citizenship. The German equivalent, *Regierung*, is different. It means reigning or doing the business of royalty, but as the origin of the word " Rex " is the same as that of the main syllable of the words " Rector " and " Director," it comes to the same thing, a " directing " action.

Will this directing or controlling action ever become superfluous?

Its chief function is at present to determine the policy of a large aggregate of human beings. In democratic

countries this determination is settled by a majority vote, from which there is no legal appeal, though passive resistance or the threat of rebellion are weapons which a minority can sometimes use with effect. A majority vote would be practically certain to be wrong on most questions of the day, but fortunately such a vote has no effect unless it is put into action by a body of expert politicians comprising the Ministry, and these again are largely guided by experts in the particular matter with which the vote in question is concerned. Laws are not made by Parliament. They are born in Government offices under expert advice. The Cabinet, on the advice of its experts, decides to bring in a Bill which is likely to be of some benefit, will probably be passed by Parliament,

and will encounter no serious resistance in the country. Our Government is thus really a Government by Experts, but is cleverly disguised in such a manner as to appear " broadbased upon the People's Will." A similar camouflage might very properly be adopted in the management of factories and industrial enterprises. But the State is older than the Factory, and has learnt more wisdom.

The other primary function of government is the maintenance of public order—in other words, the enforcement of the laws it has enacted. Among the Medes and Persians, whose laws were never altered, this was the main function of government. And in a non-progressive world the task of keeping everyone " in his place " and preventing him from encroaching on his neighbours

might well fill the whole sphere of government. The Anarchist ideal of the abolition of all government is only possible if we can abolish the natural tendency of all living things to expand and extend their sphere of action; or if we can endow its neighbours with sufficient reserves of energy to be able to oppose any undue expansion. If a motorist knocks down a pedestrian, we discourage that undue extension of his sphere by a fine or imprisonment. If we could endow every pedestrian with the physical power of stopping a car, say, by raising his hand; or if, alternatively, we could make him invulnerable, indestructible, and untraversable, there would be no need for prosecutions, and Anarchism would, in that particular case, become a possible system.

The idea of a government being

something superior to ordinary humanity is somewhat ludicrous. In actual practice, government is the servant of the public, and not its master. There are countless cases of the processes of law being used for private ends. The rule of conduct among some powerful individuals and corporations is to "go on until you are stopped," in other words, to do what you like until somebody objects, or until you are stopped by the law. The law is thus used as a sort of indicator or "automatic cut-out" much as an electrical engineer would use a safety-fuse. The main difference is that the "blowing" of some particular fuses leads to explosions and permanent damage, as when a crime is committed.

The business of government is hard and sometimes very exacting work.

One can imagine some misdemeanant of the future being condemned to carry on the government, or some important function of it, for so many months, as the most exacting form of hard labour.

This elementary fact has of late been recognized by most modern parliaments in the payment of their members. Government should be recognized as a profession and rewarded as such.

The late Mr W. T. Stead's alternative to Democracy was an "Autocracy tempered by Assassination." There is another alternative, viz., Bureaucracy tempered by Emigration. It is the system practised in such institutions as Proprietary clubs. Members are not worried to elect committees and honorary officers. If they are satisfied with the management they remain in the club. If they are not, they join

some other club. The same process on a larger scale led to the foundation of the American colonies and the United States. It is largely at work at the present day, but is complicated by all sorts of restrictions and difficulties, the divergence of languages being one of the most serious obstacles. As intercommunication increases, the natural tendency to go where one can be happiest—*ubi bene, ibi patria*—will no doubt come increasingly into action, and will be a wholesome check upon the extravagances of cranky legislatures.

But I doubt whether there is any tendency at all of governments to become less effective. Almost every advance of science and invention makes the maintenance of public order and security easier. The tracing of criminals by wireless telegraphy and broad-

casting is a striking illustration of the aid science can give to the police. Almost everywhere science and invention are on the side of the established order. Although every researcher and inventor is, in a sense, a revolutionary, in that his work is likely to produce immense changes in human activity, his general outlook tends towards aristocracy, since he is imbued with the sense of the immense differences in the personal equipment of individuals, which no equalitarian sentimentality will ever wipe out.

The Farther Outlook.—So far, we have looked but little ahead, a century at most. The prophet's task becomes more arduous as the time is extended. Historical guidance fails us. Familiar landmarks get blurred and disappear. We are in danger of getting lost in a

bog of unreal speculation. Yet the task has often been essayed, and it is necessary and desirable that it be essayed now and again. Let me make my own humble attempt, in the light of what knowledge I have acquired and what great thoughts I have encountered in many lands and languages, and in discussions with many thinkers.

We must extend our time scale from centuries to millennia, and from millennia to geological eras. Above all, we must take into account not only the rapid advance of science and invention, but the constant *acceleration* of that advance.

The consequence of that constant acceleration is that new developments and achievements succeed each other with bewildering rapidity. Hardly

have we got accustomed to the idea of telegraphy without wires when radio-telephony becomes an accomplished fact, and within a few years there is a rich crop of listeners with their wireless receiving sets counting by the million. An entirely new form of publicity comes into being, and a speaker on Savoy Hill is able to speak to an audience of millions and sway them by his voice more effectively than he can do by cold print in the newspapers.

And this is only a beginning. Communication will become closer and more general. Already the earth is a network of lines and cables, linking continent to continent. Soon a speaker will have the earth for his sounding board and his hall of audience, and the privilege of addressing the human race will be prized above a coronation.

Human sight and hearing will extend its range enormously, not only in space, but in time also; for the cinema film and improvements in the recording of sound will make it possible to make minute and comprehensive records of past sights and sounds for future reproduction, so that nothing of any value may be lost.

Other progress will go hand in hand with the rapid development of "signalling" communications, such as telegraphs and the like. The transport of goods and passengers will rapidly gain in speed, comfort, and safety, until the whole earth becomes accessible to all. It will not only become accessible, but also habitable. The tropics, the original cradle of the human race, will once more be reclaimed from our most formidable enemies of the

insect world and the ever-present bacterium. The higher organism will assert its much-contested supremacy over those minute organisms which owe their influence to mere numerical superiority. Our descendants will pay an afternoon's visit to Timbuctoo or Mount Ararat, much as we should visit the British Museum or the Lake District. Everybody will be a globe-trotter, but the "globe" will not be confined to the ordinary tourist resorts. It will include every part of the world, even the Poles. And wherever they go they will find friendly voices, long familiar in the home through the service of radio-telephony. There will, of course, be an international auxiliary language, understood everywhere, a language artificial in its structure—every literary language is largely artificial—but

utilizing those roots which have already become part and parcel of all cultured languages. This will not mean the displacement or loss of native languages which have proved their title to survival by their literature.

War will not cease for perhaps a century or more. But it will finally cease when the truth has sunk in that war is a loss to every belligerent and to the whole world. Human rivalry and competition will take other forms. There are many ways of killing men, women and children, besides suffocating them with chlorine. If a tribe is to be exterminated, nobody will be killed, but all its members will be painlessly sterilized by X-rays or some such modern means, so that the next generation will know them no more. It will be more humane than the Biblical

expedient of "dashing their children against a stone."

The mass of interconnections between human nations and individuals will be like a closely-woven fabric. Even now the digging up of a city road reveals a tangled network of water pipes, electric mains, gas pipes, and drain pipes suggestive of the dissection of an animal body. It is but a faint foreshadowing of what is to come. The substratum of life will become more and more complete as conscious life becomes simpler.

Nobody is conscious of the appalling complexity of his anatomical organization when using his body as a well-poised instrument of thought and intercourse. "The simple life" is not the old-fashioned country life of England or the primitive life of savage humanity. Real simplicity is constituted by the

life in which most things are done by pressing a button, and a man can travel across a continent in such comfort that on arrival at his destination all memories of his journey are dimmed or lost, and he can hardly recall having travelled at all.

We may, therefore, expect that, as facilities for intercourse become more detailed and widespread, the effect will be, not to increase the tax on our nerve force until it becomes unbearable, but to increase our area of selection. There will thus be more consistency in our actual interests and activities and more real harmony and leisure.

The unification of the planet which is being accomplished before our eyes will have some astounding consequences. Mankind will assume a definite mastery of his home in the solar system. Attila could boast that when he plunged his

spear into the ground the whole earth trembled. The earth trembles even now to the electric signals of our powerful wireless stations. What will it be in a hundred or a thousand years? In a hundred years the unification of the human race will be complete. The earth and the fulness thereof will be under the full mastery of man. All animal, vegetable and bacterial life will be kept within strict bounds in the interests of humanity. The earth will be under one government, and one language will be written and understood, or even spoken, all over the globe. There will still be different races and perhaps allied nations, but travel and commerce will be free and unfettered, and calamities will be alleviated and dangers met by the united forces of all mankind.

And all the world will be *young*. The advances of medicine and surgery will have been such that most of the ailments and limitations of old age will have been eliminated. Life will be prolonged at its maximum of efficiency until death comes like sunset, and is met without pain and without reluctance. There will be no death from disease, and almost any sort of injury will be curable.

And in a thousand years? What will become of our globe and its dominant race, if no great catastrophe occurs to stop its exponential curve of progress. But for that exponential curve and its tendency towards constant acceleration, a thousand years would be no great period to foretell. Life has become world-wide in the last thousand years. The intellectual outlook has increased

with the area of travel and communication. Dogmas and shibboleths have lost their force. Art and science have been emancipated from their ecclesiastical fetters. But the immense leap made since coal came into its own as a world-force belongs to our own age. The exhaustion of the coal-fields might slow down progress for a time, but so long as mankind keeps its continuity, its past achievements and its rate of achievement will act as a stimulus and encouragement to further efforts, and new sources of energy will be discovered and utilized.

And so we may feel justified in expecting continual progress for at least a thousand years. Can we imagine the result? A globe laid out like a huge garden, with a climate under perfect control; the internal heat of

the earth brought to the surface and utilized as a source of never-failing energy. Portions of the interior of the earth reclaimed and made habitable; all machinery and sources of power wisely distributed and made instantly available for all legitimate purposes. The earth's surface and the rippling ether in which it swims made into a vast playground of human thought and emotion, and all mankind throbbing in unison to every great thought.

The Earth will have become a sentient being.—It will be as closely unified and organized as the human individual himself. Mankind will be the "grey matter" of its brain. It may not resemble a sentiment being high up in the scale of life, but it will be at least on the level of *protococcus* or some other such humble plant-cell, which also

consists of a minute proportion of material truly "alive" together with a greater bulk of stored foodstuff and waste products.

Man will be conscious of his closer attachment to the earth. He will feel towards it a sort of personal patriotism, or the sort of loyalty that a veteran feels towards the Old Regiment. Specially exalted or sensitive people may even indulge in a kind of Geolatry animated by an old-world religious fervour.

Can we focus our mental telescope into yet farther depths of time? A million years or so?

It seems rather risky to extrapolate our curves so far. But a million years are but a span in the life of the earth. Its records speak to us of many millions. The chalk cliffs of Dover took several million years to deposit on a former sea-

bottom, and many more to rise to their present eminence.

If there is a still farther advance in the life of the earth, what sort of direction can it take? Will a new race have arisen, as much above humanity as man is above the arboreal ape? Or will the further differentiation of man have come to a definite end, and progress be confined to an ever-increasing richness of intellectual, artistic, and emotional life? If there is any progress at all, it must be by *effort*, and the question could be answered with fair probability, if we could find an incentive to effort after the earth is entirely subdued. Such an incentive towards effort will lie in the ever-present danger of a celestial catastrophe, such as a collision with one of the smaller wandering planets or other denizens of outer

space. It may be that the earth will by that time be alive to its own peril, and will take precautions! Its "grey matter"—our own descendants—will be confabulating and organizing in some great scheme of defence. The earth will have to adopt a Foreign Policy, if it is to be the master of its fate for all time.

Here our dreams are checked by the realization that among the older planets of our solar system we can trace no activity attributable to a "foreign policy" of their own. But we must remember that ours is a small planet, which has very little influence upon its neighbours in space, and is certainly not a danger to them. If Mars, millions of years older than ourselves, has arrived at such a stage of advancement that it can think of transcending its

own boundaries, it may make some attempt at communication, but the attempt might take the form which to us would be quite unrecognizable. Some observers thought that the persistent thunderstorms and magnetic disturbances experienced during the last opposition over wide areas were signs of such an attempt, but the coincidence may have been quite accidental.

In any case, we cannot find any sign of the Martians having succeeded in exercising any powers beyond the surface of their own planet, though, if the "canals" really exist, their engineering feats must be truly stupendous.

It may be that the earth, owing to its position between torrid Mercury and ice-bound Neptune, enjoys conditions specially favourable to mental and

physical advancement. And so it may happen that it will for immense ages of time be the only planet to burst into consciousness. Thus it may at some epoch find itself the undisputed master of the solar system, and may be able to influence the other planets and make them subservient in some way to its own needs.

Let nobody think I am unduly optimistic about the future of this earth of ours. The difficulty lies rather in visualizing what recent and current progress, and *accelerated* progress, must inevitably bring about when continued for a long time. The only doubtful element appears to be whether the magnificent *élan vital* of our race, which has enabled it to conquer the world, will last through the vast ages to come.

But, fortunately, there is no sign of its exhaustion. Love is still the ruling passion and inspiration of humanity, which enables men and maidens to brave all the trials and dangers of life in unconscious devotion to a future as yet unimagined and unborn.

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