

directing religious rites and ceremonies. As punishment was not within the normal jurisdiction either of the king or of the priests, the ancient law usually laid down duties to be performed rather than the remedies or sanctions that would follow non-performance.

Debt.

But though the law with regard to civil matters seems to be so meagre or so scantily referred to, on the contrary civil relations do not appear to be so simple. Debts were frequently contracted and as frequently repaid. The divine Adityas are called the acquitters of the debts of the worshippers.¹ Sayana considers *rinani* in this connection to be real debts. Even if the word be metaphorically used, as is suggested by some, that would not vitiate the fact of the existence of debts in actual life. Varuna is propitiated in one hymn² and asked to discharge the debts (*rinani*) contracted by the worshipper and his progenitors. He wishes again to be independent of another for his livelihood. Just as in the modern times, the ancient people used to gamble, and at the dice betting seems to be the usual custom as it is at the cards to-day. Here also we find mention of the losing dicer being in debt. The gambler, ever in fear, anxious for wealth, is referred to as going by night to the dwellings of others (to steal).³ This passage is significant from another point of view. Why should the gambler be so much distressed and so much in fear, why should he be so desperate as to contemplate theft, unless there were effective means by which the debts could be realized? From the other slokas of the hymn, it is to be seen that he did not care for his wife, mother and his home, so that any harm to them would not have affected him much. The punishment must have been then corporal. This would support our theory about private revenge as the prevailing custom. He must pay or suffer punishment at the hands of the creditor. Perhaps he could be reduced to slavery, as seems to be probable from a verse where it is mentioned that the father, mother, and brothers of the debtor said that they did not know him

¹ ii, 27, 4.

² ii, 28, 9.

³ x, 34, 10.

(i.e., recognize him as their relative) and asked the creditor to take him away bound, wherever he might will.¹ In an obscure passage² perhaps the punishment is referred to as "held bound in ropes as the thief is held for stealing." But as in modern days punishment is not the only nor the principal incentive to the fulfilment of a contract, so also it seems to be the case in those days. The references to debts points to a practically universal practice; and frequent default would not be favourable to the subsequent contraction of debt. In fact, we have to assume that repayment of debts was as usual as they were contracted. In one hymn we actually find mention of such repayment, *ṛṇani samni*, which means "to pay off a debt."³ Attempt has been made to read in this verse details as to the repayment of the principal or the interest. But that does not seem to be reasonable, the comparison to hearts and hoofs must be taken as merely metaphorical.

¹ x, 34, 4² vii, 86, 5³ viii, 47, 17

CHAPTER VI.

AGRICULTURE.

WE have already dealt with the pastoral life of the Aryans of the Vedic Age and we have seen how they were as much pastoral as agricultural. A race that is settling down to a life of agriculture must remain, for long, primarily pastoral. Of course, pastoral life tallies more with the nomadic state than with a settled one, because in the nomadic stage of life, hunting and pasturage must form the mainstay of the people. That is why we find that the ancient Teutons, with very little known arts of agriculture, were proceeding along the Elbe, always halting by the side of a river or in a valley where they could get good pasture lands and where, probably, they could get as much fish and flesh as was necessary to maintain them. Otherwise, for purposes of protection we would expect them to travel by the natural fastnesses only. Before they settled down in Frisia they already knew the rudiments of agriculture. But agriculture by a nomadic tribe, living in one place for a few years, cannot develop much, and the more scientific and the more efficacious system of intensive culture of the soil and alternating cultivation with fallow cannot develop in such a state. The ever-shifting strip of the German *mark* land could not have been favourable to such progress. It is uncertain whether the predominant element in Frisia was pastoral or agricultural. But when they came to England by the fourth, fifth, and sixth centuries, they were already settling down to a life of agriculture which continued unabated even when the war of conquest was going on with the stubborn but retiring Welsh. Yet even now pastoral life was not the least important aspect of

their busy life, busy as conquerors, busy as agriculturists, and busy as settlers on an entirely new country. So, it need not surprise us if we find that the Indo-Aryans in the age of the Rig Veda were pastoral, but at the same time expert agriculturists, having individual ownership of land and not varying plots as in the case of the English invaders. They knew the arts of fertilizing the soil by artificial means, had some irrigation system, and used to manure their lands for the purpose of improving the natural qualities. The processes of sowing and reaping the crops, the threshing and the winnowing, as well as their means for measuring the corn, all testify to the amount of progress that they had achieved even in the time of the Rig Veda.

The Monsoon.

It will indeed be highly interesting as well as important to learn all these in detail as far as it is possible to know them from the Rig Veda. It is not exactly certain whether the people were acquainted with the Indian monsoon as such, which is even now the only crux on which a fruitful cultivation of the soil depends. But as they knew the division of the year into seasons and also the rains coming on to fertilize their soil, it might not have been impossible for them to look for the rains as the great benefactor of *krishi* or cultivation. There is a good number of hymns in the Rig Veda to the Maruts and in some of them it is possible to read the propitiation of the deities as the approaching south-west monsoon. Of course, we must not expect the scientific knowledge which, by the help of the meteorological department, we get to-day. Their knowledge about it was fundamentally the same as that of the ordinary Indian cultivator of the present day.

We find in the Rig Veda a passage¹ in which Agni and the Maruts are recognized as those who scatter the clouds and agitate the sea, and who spread through the sky, along with the rays of the sun, and, with their strength, agitate the ocean. Thus the people of the time were acquainted with the sea and the influence of the winds upon it. Rishi

¹ 1, 19, 7-8.

Kanwa again, addressing the same deities, speaks as if they were rising along the firmament. They are the agitators of heaven and earth.¹ The householder plants firm buttresses to protect his family and cattle.² The Maruts drive before them, in their course, the long, vast, uninjur-able, and rain-retaining clouds.³ The deities can even give animation to the clouds.⁴ They spread out the waters in their courses; they urge the lowing cattle to enter the water up to their knees (to drink).⁵ The lightning roars like a parent cow that bellows for its calf, and hence the rain is set free by the Maruts.⁶ They spread darkness over the day by water-bearing clouds and then inundate the earth.⁷ Thus do the Maruts delight their worshippers,⁸ perhaps by giving the rains which foster agriculture. Rishi Bhauma calls Parjanya ⁹ (perhaps Indra), the showerer, the bountiful, who impregnates the plants with rain. He, driving the clouds before him, makes manifest the messengers of rain; the roaring of the lion like cloud proclaims from afar that Parjanya overspreads the sky with rainy cloud. The plants spring up, the firmament dissolves; earth becomes fit for all creatures when Parjanya fertilizes the soil with showers. The deity is propitiated as one through whose functioning plants assume all kinds of forms, and hoofed cattle thrive. Send down, Maruts, the rain from heaven; come down, Parjanya, sprinkling water by means of the thundering cloud; thou who art the sender of rain and thus art the protector. Cry aloud over the earth and draw open the tight-fastened, downward-turned water-bag, and may the high and low places be made level. Raise on high the mighty sheath of rain, pour down its contents; let the rivers flow unimpeded, saturate with water both heaven and earth, and let there be abundant beverage for the kine. Finally, perhaps after it has rained sufficiently, the hymn goes on: Thou hast rained, now check well the rain; thou hast made the deserts capable of being crossed, thou hast given birth to plants for men's

¹ i, 37, 6.
² i, 37, 12.
³ i, 38, 9.

⁴ i, 37, 7.
⁵ i, 37, 10.
⁶ i, 64, 8.

⁷ i, 37, 11.
⁸ i, 38, 8.
⁹ v, 83.

enjoyment ; verily thou hast obtained laudation from the people. This is the strain of all the hymns to the Maruts and of some verses devoted to some other deities. It is useless to quote all of them and we finish with the following one to Varuna.¹ Varuna waters earth, mid-air, and heaven when he pleases to send forth the milk of the cloud ; thereupon the mountains clothe their summits with the rain-cloud and the heroes (Maruts), exulting in their strength, compel the clouds to relax.

It may appear to those unacquainted with the climatic conditions of the Punjab that this praise of the rains is in hyperbolic language. Of course, we do not exactly know if the climate of that part of India has undergone a reversal of what it was in the Vedic age. But the probability is that, though it may have changed much, yet it is not an altogether new thing. The rivers were wider and more fast flowing. The sea was perhaps nearer than it is now. The desert of Rajputana existed still, though it might have been less arid and less extensive than it is now. This latter fact will be evident from the rainfall described in the Rig Veda, whereas the modern monsoon can rarely bestow much water there, the water vapours being absorbed by the hot desert air and carried directly towards the Himalayas, without letting in much to the arid and irrigation-cultured Punjab. Making all these allowances, it seems that the climate of the Punjab as it was and its climate now must agree in fundamentals ; for example, in the extremes of heat and cold, want of much water for cattle, etc. The present writer has had some experience of the modern Punjab, and he appreciates fully the sentiment of the Rig Veda when he recalls in mind the parched months of April, May, and June, and feels how delightfully agreeable must have been the advent of the rains in such a climate at a time when the modern system of extensive canal irrigation did not exist.

The Fields.

The organization and arrangement of fields are very

¹ v, 85, 4.

interesting and instructive, showing the holding of the cultivated lands and also the waste lands lying between them. Agriculture must have been universal in the period of the Rig Veda, as will be seen from the practice of intensive culture of the soil. There is almost a continuous reference to fields and cognate matters in the whole of the Rig Veda, showing the importance of agriculture. Various words have been used for the fields or cultivated lands, for waste lands, and for meadow lands. We shall take them up in turn to study the conditions of the agricultural life of the Aryans of the Rig Veda period.

Urvara.

The word *urvara* occurs repeatedly in the Rig Veda¹ in the sense of fertile land or plough land. The antiquity of this word may be traced to that early period of the Aryans, when they had not separated in different directions. In Greek the same word, practically in the same form, occurs for the same idea. *Aroura* stands there for what *urvara* means in the Rig Veda. So that philology would establish the origin of cultivation of fertile lands, however crudely it might have been, in that distant original home of the Aryans. *Urvara* in the Rig Veda means the land which is acquired for the purpose of cultivation. But whatever is acquired for cultivation may not be equally suitable for the purpose; some naturally pay for their culture, while others do not, so there must be the distinction between fertile and waste fields. In the Rig Veda *apanasvati* means fertile whereas *artana* means waste fields.² There is some uncertainty as to whether these are subdivisions of *urvara* lands or whether *urvara* must be identified with *apanasvati*. Whatever that may be, the point for us is that the people made the distinction, even in nomenclature, between culturable lands and waste lands. The fields were not held in communal ownership but each householder had his separate share which belonged to him definitely. This is proved, among others, by the

¹ 1, 127, 6, 14, 41, 6, 5, 33, 4; VI, 25, 4, 8, 30, 3; 8, 142, 3.
² 1, 127, 6

three prayers of Apala, daughter of Atri. When Indra, pleased with her, consented to grant her three boons, she asked him to cause three places to grow, viz., her father's bald head, his barren field, and her body.¹ The next verse practically repeats the same prayer. This fact of individual ownership is further confirmed by references to the winning of lands. After getting them through the favour of Heaven and Earth, Trasadasyu is said to have bestowed upon many the ancient gifts which include *urvarasam* and *kshetrasam*.² The word *urvarasa* is again used in connection with Indra who is called the owner of cultivated land.³ The deity Indra, in another passage,⁴ is called *urvarajit*; whatever may be the meaning of *jī*, it is clear that, whether by conquest or as *adhipati* (as Sayana explains it), he is the owner of the *urvara*. Rishi Sobhari calls Indra *urvarapati* or lord of corn land.⁵ The word is also used in one passage in connection with children,⁶ which may have some significance as to the nature of the authority that could be exercised on the lands. From this collation of facts found in the Rig Veda it is, we hope, fully proved that cultivated or plough lands were held in individual ownership.

Kshetra.

Kshetra is another word which means usually field. It seems to be of wider significance than *urvara*, which is corn land, i.e., cultivated field. But this distinction is not so certain and it would be advisable not to press it too far. Like *urvara*, *kshetra* was also subject to individual ownership.⁷ Rishi Kavasha, in consoling Upamashravas on the death of his father, alludes to a pleasant field given to a beggar.⁸ Surely what could be given away to the beggar belonged to the giver; and gift to the beggar made the *kshetra* subject to his separate ownership. Further evidence is not wanting for the conclusive proof of this. The son of Svitra is said to have been protected by Indra

¹ viii, 91, 5.

² ii, 21, 1.

³ iv, 38, 1.

⁴ viii, 21, 3.

⁵ vi, 20, 1.

⁶ iv, 41, 6.

⁷ iii, 31, 15.

⁸ x, 33, 6.

when the former was fighting for his land (or, it may be, for the acquisition of land), *kshetrajesā*.¹ *Trasadasyu*, through the grace of Heaven and Earth, gained land, *kshetrasam*.² As a corroborative evidence we may accept that the expression *kshetrasya pati*,³ lord of the field, meaning the presiding god of the field, indicates that there was a separate deity for each field. But this is more or less uncertain and it may be so interpreted only in the light of the other passages cited above, establishing the fact of individual ownership of the *kshetra*.

Another important fact in connection with the *kshetra* is that it was very carefully measured, so that the lands of each might be easily distinguished. This looks like the modern cadastral survey. We do not exactly know what was the principle or what was the immediate object of it, but its reference in a passage⁴ in the *Rig Veda* may be safely taken as conclusive evidence of the existence of such measurement. But it must be remembered that there is no such reference with regard to the older and the more important division of land, *urvara*. The reason may be various. *Urvara* and *kshetra* may have been used for the same fields, so that what applied in one case applied as well for the other. Or, it may be that the *kshetra* was supposed to be more important than *urvara*, which may have been the relic of an age when agriculture was not sufficiently developed. But the more probable explanation seems to be that the distinction between *kshetra*, as the whole field, and *urvara*, as the cultivated portion only, was one of real vitality. *Kshetra* was the subject of private ownership as well as *urvara*. But naturally the *urvara* portion of a man would fall under, and be included in, his *kshetra* portion. And if the *kshetra* was carefully marked out and measured, *urvara* of one person was necessarily distinguished from that of another. This explanation of course assumes that the measurement was for the purpose of distinguishing the owners of lands rather than that of different kinds of land of the same owner. This assumption

¹ i, 33, 15.
² iv, 37, 1-2; vii, 35, 10; x, 66, 13.

³ iv, 38, 1.
⁴ i, 110, 5.

is quite reasonable if we remember that the property of the family was the property of the father, and that the family was never in the Vedic age a corporation jointly holding property (*see ante*, under Family Ownership); if so, what need was there to divide an individual's plough land and other lands by such careful measurement?

From the above discussion it must not be inferred that *kshetra* includes the waste land as well. Its frequent use¹ in connection with cultivated lands tends to imply that the system of fallow was known to the Aryans, and that all lands which were capable of cultivation or which were cleared and acquired for cultivation came under *kshetra*, whereas *urvara* would imply the actual plough land, that is, land under actual cultivation, thus excluding the fallow and the meadow land. On this point it is impossible to be certain, especially when the word *kshetra* is vaguely used in the sense of "place" in some passages in the Rig Veda.²

We also come across the waste land where cattle used to graze. *Khilya* is used in this sense in the Rig Veda. Agni or fire is propitiated so that he may not, as he has done in some cases, lay waste the sites of the tilled fields.³ But it is uncertain whether the waste lands were scattered between the cultivated lands as some think them to be, or whether they were, like the Teutonic waste lands, entirely separate and distinct from the cultivated lands. The use of the expression *abhinna khilye*⁴ is perplexing. Sayana takes *khilya* as waste land but gives its special meaning in this passage as *apratihatasthanam*, an unassailed or unassailable place, that is, *anyair gantumashakye sthale*, one which is unapproachable by others. This special meaning is attached to the word *khilya* because of the adjective *abhinna*, which is explained as *shatrubhirabhetavye*, that is, not to be breached by enemies. The expression would thus mean an inaccessible fortress. This is, of course, an unusual use of the word *khilya*.

¹ 1, 100, 18, ix, 85, 4, ix, 91, 6.

² v, 2, 3; v, 45, 9; vi, 47, 20.

³ x, 142, 3 ⁴ vi, 28, 2.

Pharvara.

Another word, *pharvara*, of very uncertain meaning, occurs only once in the later portion of the Rig Veda.¹ It may mean a field in bloom, which, in connection with the context, will mean the overgrown pasture land. But Sayana explains it as filler, *parpharat* being taken as the intensive form of *pharvara*, derived from a root meaning to fill. Others again interpret it as sower. So we do not think that we should take it as the same thing as *khilya*.

Cultivation.

We now come to the actual cultivation of the soil. *Krishi* is the word used for ploughing, and the different forms of the root *kris*, to plough, are frequently used in the Rig Veda. Rishi Medhatithi alludes to a husbandman who repeatedly ploughs for *yava*.² Again, Indra is praised as one who causes men's desire to bud like *yava*.³ Later on, the gamester is advised to give up gambling and pursue agriculture, *krishu*.⁴ In another passage⁵ the ploughshare, furrowing the field, is said to provide food. Rishi Devamuni, in addressing Aranyani says that it is *akrisha vala*, that is, not agricultural.⁶ In more or less the same sense, the word occurs in various other passages of the Rig Veda.⁷ The deities, the Aswins, are said to cause the *yava* to be sown in the fields that have been prepared by the plough, or perhaps it means that the Aswins are concerned with the sowing of the grain by means of the plough.⁸ Thus the importance of agriculture as a means of livelihood is very clear from the Rig Veda. In fact, it was one of the most absorbing pre-occupations of the Vedic Aryans, as it is of the Indians to-day. This importance is specifically recognized in two at least of the passages cited above.⁹

¹ x, 106, 2.

² x, 34, 13.

³ iv, 57, 4; ix, 57, 8; viii, 20, 19; viii, 22, 6, x, 1, 14.

⁴ i, 117, 21.

⁵ i, 23, 15.

⁶ x, 117, 7.

⁷ x, 34, 13, x, 117, 17.

⁸ i, 176, 2.

⁹ x, 146, 6.

Implements of Agriculture.

Let us turn to the exact process of cultivation and the instruments used in connection with that. *Kinasa* was the name given to the ploughman.¹ He was thus differentiated from others who might have been doing other works in the field. Of course, these differences refer to the different functions only and do not prove that the division of labour was actually prevalent to that extent. The same person might have been doing various functions and so might be called *kinasa*, *pasupa*, etc. The *kinasa* used to cultivate land by means of the plough. *Stega* in the Rig Veda² has been doubtfully interpreted as the ploughshare, its meaning in the Yajur Veda Samhitas being distinctly something else.³ But *phala* certainly means ploughshare in the Rig Veda. The prayer is found thus: May the ploughshares break up the land happily.⁴ Again, the ploughshare *phala*, furrowing the field, provides food for the ploughman.⁵ The furrow itself was called *sita* and, in an agricultural age, must have been held in high veneration. Thus we see it personified and propitiated: Auspicious Sita, be present, we glorify thee: that thou mayest yield us abundant fruit.⁶ May Indra take hold of *sita*; may Pushan guide her; may she, well stored with water, yield it as milk, year after year.⁷ The whole plough was known, as it is known even now, by *langala*. In the Rig Veda we find in a hymn⁸: may the plough furrow happily. The plough was also called *sira*.⁹ Rishi Budha, perhaps on the advent of the rains, asks the people to harness the ploughs.¹⁰ The ploughs were drawn by ox, as they are nowadays.¹¹ At the time of harnessing the ploughs the yokes had to be put apart.¹² This perhaps shows that the cultivation was with the help of one ox rather than two. But the point is doubtful since in the later Samhitas there are copious references to the *sira*

¹ iv, 57, 8.² x, 31, 9.³ Taittiriya Samhita, v, 7, 11, 1, Vajasaneyi Samhita, xxv, 1.⁴ iv, 57, 8.⁵ x, 117, 7.⁶ iv, 57, 6.⁷ iv, 57, 7.⁸ iv, 57, 4.⁹ iv, 57, 4.¹⁰ x, 101, 3.¹¹ iv, 57, 4.¹² x, 101, 4.

being drawn by six, eight, twelve, or even twenty-four oxen. When the ox at the plough slackened its work, the goad, *astra*, was used to make it mindful of its work.¹ Pushan is asked to give the "service of that thy weapon which is the guide of cows, the director of cattle."² Pushan is also described as brandishing his loosened goad.³ Indra is called the wielder of goad, *astravin*.⁴ Once in the Rig Veda the sense of a goad is conveyed by the word *toda*.⁵ Its earlier meaning is uncertain, some authorities considering it to mean the prince as the wielder of the rod of punishment.⁶ But its later meaning is clear. It is also wielder of the goad but not the prince. It means the impeller,⁷ which may have been only a generalized expression of the act of goading in ploughing.

Irrigation and Manuring.

The ancient people did not depend on the natural water of the river and the rains alone. They enhanced the fertility of the soil, Ricardo's natural and indestructible powers of the soil, by resorting to artificial means. The arts of irrigation as well as of manure were known to them. The use of the word *khanitra*, shovel wherewith to dig, perhaps well, is mentioned in one passage.⁸ It is said that the use here is metaphorical. But metaphors can be conceived only when actual counterparts of them exist in fact. Even if we leave out this reference as of doubtful significance as a proof of irrigation, we are not in want of further evidence for our purpose. Elsewhere⁹ it is found: may the waters that are in the sky, or those that flow on the earth, those whose channels have been dug, etc. This is explained by Sayana as *khanitrama khamanena nivritlah*, that is, formed or perhaps stopped by digging canals or reservoirs. In either case this is a clear proof of the practice of irrigation. In addition to the system of irrigation, the Vedic Aryans also used manures to fertilize the soil.

¹ iv, 57, 4.

² x, 102, 8.

³ vi, 6, 6; vi, 12, 1-3.

⁴ vi, 53, 9.

⁵ iv, 16, 11.

⁶ i, 176, 6.

⁷ vi, 58, 2.

⁸ i, 150, 1.

⁹ vii, 49, 2

In this connection excrement was utilized, and we find the Ribhus separating the *sakrit* or dung from other parts.¹

Reaping and Winnowing.

While engaged in agriculture the people must have been watching for the fruits of their labour most anxiously. The first green shoots must have gladdened their hearts. Thus green shoot or *tokman* was a joyous thing. We find its growth compared with the growth of Manu (Savarni).² As the corn grew up like glad hope they reaped it when ripe, and for this purpose the sickle most probably was in use. Considerable doubt has been expressed as to the right meaning of the word *srini*,³ but it is impossible to deny the existence of some such weapon for reaping the corn, especially when we know that the ancient people knew how to use metal (*ayas*). The corn was cut with the help of the sickle and piled up in bundles.⁴ Further, the wish is expressed that the grain may grow and fall ripe towards the sickle.⁵ The grain was separated in due order after it had been cut.⁶ This passage contains an expression which is highly suggestive. *Anupurvam viyuya* indicates a knowledge of the succession of crops which shows an important advance in agriculture. The grains, after they were cut, were put into bundles and thus the sheaves were thrown on the threshing floor. The *parsa* or sheaf on the *khala*, or threshing floor, is alluded to in a hymn to Indra Vaikuntha.⁷ Thus separated from the chaff, it was still coarse grain and as yet unfit for human consumption. At this stage the grain was called *saktu*,⁸ although in the later Samhitas it signified groat. The next process was to winnow it and thus separate the chaff from the grain. The word *tatau* occurs in the Rig Veda for sieve or winnowing fan. Thus: the wise create speech through wisdom winnowing it as men winnow *yava* with a sieve.⁹ The winnower had a separate name for the function that he performed. He was called *dhanyakrit*.¹⁰ It is said that

¹ 1, 161, 10.

² viii, 78, 10.

³ x, 48, 7.

⁴ x, 62, 8.

⁵ x, 101, 3.

⁶ x, 71, 2.

¹⁰ x, 94, 13.

⁷ 1, 58, 4.

⁸ x, 131, 2.

⁹ x, 71, 2.

the word literally means purifier of *dhana* or corn. But another interpretation would make it producer of *dhana*, according to which it may mean either the winnower or the sower. In any case, this is a word used in connection with some agricultural function. For our special point it is not important to interpret this as winnower, for his existence is proved by the proof of winnowing and the sieve. After the grain had been separated from the straw and the chaff, it was stored up. In this connection the word *urdara* is differently interpreted.¹ Sayana renders it into granary, whereas others say that it means a measure for holding grain. For this meaning the word *sthivi* is used in the plural.² It may mean either a granary (Cowell) or a measure for the grain. *Sthivimant*³ is similarly explained as provided with *sthivi* or the measure. In view of the conflict of opinions, especially in view of the very peculiar and rather forced meaning assigned to the word by Sayana⁴ in his commentary on the first of the above two passages, it would be safe for us not to accept it as a positive proof either of store or of measure, although it must mean either of the two.

Thus we see that all the necessary processes were gone through by the people of the time. Their system of cultivation was neither the crude one of the nomadic Teuton nor that of the settled English in the island.⁵ They had advanced much further, though, in time, they were older than the English by at least twenty centuries. Not only was the whole process separated thus into parts, one after another, with all the nice details, but they had different names for each of these, which fact abundantly proves the superior culture and the more complex ideas attendant on it.

Besides agriculture the Aryans most probably had no other method of rearing up plants for purposes of their use. Some have tried to prove arboriculture, but this is doubtful. Some passages indeed lend colour to this theory.

¹ II, 14, 11.

² x, 68, 3.

³ x, 27, 15.

⁴ He says that *sthisvibhyah* is *kusidebhyah*, that is, usurers.

⁵ Cunningham's *Growth of English Industry and Commerce, Early and Middle Ages*.

Indra is asked to give wealth adequate to the desires of men as a crook brings down the ripe fruit from a tree.¹ Similarly *sakha pakva*,² ripe while still attached to the branch of the tree, and *briksha pakva*,³ ripe while on the tree, occur in the Rig Veda. But these do not prove whether the fruits were gathered from the wild trees or from the trees reared by men. It would be safe to hold, without at the same time denying the existence of arboriculture, that these instances refer to the plucking of fruits of the trees which the people found around them, growing out of the munificent bounty of nature in a tropical climate.

Agricultural Products.

From the available materials in the Rig Veda it is difficult to find out the grains that were produced by agriculture. All the words used for grain have had some special meaning in the later period which was not the meaning in the Rig Veda. But one fact stands out as certain, that is, that the people of the time produced many kinds of grain. This is proved by the various names used. Probably it was an age during which they had just learnt the cultivation or use of some new products, but which, being recent, were not as yet given any special name. These names, then, were usually used for all kinds, though there might have been some attempts to specialize one for any particular grain. From the brief and indirect references in the Rig Veda, it is not possible, at this distant date, to reconstruct the moulding thought and nomenclature of the time. We shall, therefore, examine each of these words, refer them to the context where they occur, and try to learn the nature of the use to which each was put. This is indeed very disappointing, but we cannot help it for want of sufficient information.

First let us take the word *yava*. In later days its meaning was unambiguously barley. In fact this was one of the most important products of ancient agriculture; next came *vrihi* or rice. But *vrihi* does not occur in the Rig Veda and *yava* is used frequently, but it seems to be used

¹ iii. 45, 4.

² i. 8, 8.

³ iv. 20, 5

as a general term for grain, that is, any agricultural product. A husbandman is said to plough the earth repeatedly for *yava*.¹ This repetition may either refer to its culture year after year or, more probably, it may refer to its cultivation more than once in the same year. The latter meaning seems to tally with the mention of the various seasons of the year. If this grain was produced twice in the year, it might probably have been barley, as that would stand two cultivations on the same soil in one year. But Indian soil is unusually productive and even now rice (*rabi* and *kharif*) is produced in some parts of India twice in one year. It is improbable that rice was meant here. It had a distinct and entirely separate name, *vrihi*, in the later *Samhitas*. If *yava* meant any special grain, it must have meant barley. *Yava* was one of the most nourishing kinds of food for the people. Agni protected the people and he nourished them as *yava* did.² In some passages *yava* seems to be some grain which was sown with the monsoon.³ The *adhvaryu* rejoices at the approach of the gods like *yava* at the fall of rain. With *yava* some preparations of cake were made which were sweet to eat.⁴ *Yava* also was a fodder for cattle, and it must have been very useful for the animals, since its effect on cattle is said to be the same as the sustenance given to man by Indra.⁵ We have taken here all those instances where *yava* may possibly have had some special meaning. But from the above it will be seen that we shall not be justified if we attempt to restrict it either to barley or to anything else. Besides these there are various other passages in the *Rig Veda* where the word *yava* occurs in the most general sense of grain.⁶

If we look at the other word, *dhana*, which occurs as frequently as *yava*, we find that the same difficulty arises as to the exact significance of the word, so that the people of the time either did not distinguish one kind of grain from another, or their distinction was not properly reflected in their nomenclature. The latter seems to be probable,

¹ i, 23, 15.

² i, 66, 2.

³ ii, 5, 6; v, 85, 3; viii, 22, 6.

⁴ viii, 2, 3.

⁵ viii, 63, 9.

⁶ i, 117, 21; i, 135, 8; i, 176, 2; ii, 14, 11; vii, 3, 4; viii, 78, 10.

since the distinct words used may be taken as indication of the different grains. *Dhana* in the Rig Veda is used in the plural, except when the adjectival form *dhanya* is used. In more recent Sanskrit it means rice, and from several passages in the Rig Veda this meaning may be attributed to the word. But the difficulty is that in the later Samhitas there is an entirely different word, *vrihi*, which stands for rice. Its so early mention in the later Samhitas at the same time makes it probable that rice was known even in the period of the Rig Veda. This becomes a plausible explanation if we consider the fact that in several references *dhana* performs many of the functions of rice. In offerings to Indra *dhana* was prepared into a food by being steeped into clarified butter.¹ *Dhana* prepared with butter is again mentioned in other places.² Cakes were made out of *dhana* and then they were baked.³ Here it seems that rice could not have been meant unless men pounded *dhana* and then made the cake. *Dhana* was considered a suitable food for the gods; for example, Indra was asked to take them, *sadrisiraddhi dhana*.⁴ *Dhana* was sometimes parched (*bhriṣ*) and then taken.⁵ This passage makes it probable that *dhana* meant rice. Rice can be parched either in the sun or in hot water or, for some other preparations, fried in hot sand, etc. The latter forms even now one of the most popular and cheap eatables of rural India. *Dhana* again was regularly mixed with soma juice in preparing the offerings at sacrifices.⁶ The adjectival form of *dhanya*, literally consisting of *dhana*, also occurs.⁷ The word *dhanyakrit*, literally purifier or producer of *dhana*, is found elsewhere⁸ as meaning either the winnower or the sower. *Saktu* in the Rig Veda,⁹ as has already been said, need not mean a separate grain, but merely the coarse grain before undergoing the process of winnowing.

Use of Cattle.

One other topic remains to be dealt with under agri-

¹ i, 16, 2.

² iii, 52, 5-6.

³ vi, 29, 4.

⁴ iii, 35, 3.

⁵ iv, 24, 7.

⁶ iii, 43, 4; iii, 52, 1; viii, 91, 2.

⁷ vi, 13, 4.

⁸ x, 94, 13.

⁹ x, 71, 2.

culture, which is equally covered by the pastoral aspect of an early people, viz., the use of cattle. There are various agricultural purposes for which cattle may be employed. So, we may conveniently make here a short study of the variety of animals and their respective uses in connection with an agricultural livelihood. Of cattle properly we have, under Village Community, dealt with the word *pasu*, and it remains only to be said here that it was a general term including all living beings, even man, although usually restricted to the lower animals. By far the most important among these were the ox, the bull, and the cow. The ox was employed for various purposes, and, owing to its sturdiness, it must have been considered as the most useful beast of burden. According to the different functions which a particular ox had to perform, it had different names. The draught oxen used for drawing the cart were called *anadvah*. Thus in one hymn Indra is asked to send the *anadvah* which may bring the cart laden with a particular kind of grass.¹ Metaphorically, the two shining orbs are said to be the *anadvah* of Surya when she went to her husband's house.² *Vaha* is also used to mean ox which performed the work of drawing, but the use of the word is confined to the drawing of the plough; thus *shunam vahah*, the oxen drawing happily or easily³; or, may the ploughman go happily with oxen, *vaha*.⁴ Bull, again, as distinguished from ox, was an animal useful to the people. It has been variously referred to in the Rig Veda. *Maryaka* occurs once.⁵ The bull was supposed to defend the herd of kine when endangered by any outside interference. As such it was called *vamsaga*.⁶ The whetting of the horns of the bull, *vamsaga*, was supposed to be done for the purpose of such defence.⁷ The wild rush of *vamsaga* into the forest is compared with that of Agni, which devastates everything that it comes across.⁸ In another place bull is meant by the word *Vrishabha*, as when its roaring is compared with that of Indra.⁹ The

¹ x, 59, 10.

² iv, 57, 8.

³ i, 55, 1.

⁴ x, 85, 10.

⁵ v, 2, 5.

⁶ i, 58, 4.

⁷ iv, 57, 4.

⁸ i, 7, 8.

⁹ i, 94, 10.

vigorous *vrishava*, curiously enough, are said to sanctify the heaven, as the milch cow the earth.¹ Bull-fights were known almost everywhere where bulls are to be found; thus its tenacity is referred to in a passage where Indra is said to fight with fierceness, like *Vrishabha* in close conflict.²

Usra, *usriya*, and *usrika* are also found in the Rig Veda to mean bull. *Usra* is used to denote its impetuosity and is apparently held in high esteem as the progenitor of the calves.³ *Usrika* may have something to do with sacrificial performances, or it may have been, by its use, held as good wealth, for it is said to be auspicious and as such compared with the auspices attending *Brhaspati*.⁴ The word *usriya* is also used in the same sense in the Rig Veda.⁵

The greatest variety of names occurs in connection with cow, which was certainly the most useful animal as giving milk and thus nourishing the young and the old. *Usrā*,⁶ *usriyā*,⁷ as feminines of *usra*, *usriya*, are used for cow. The word *go*, as meaning cow (sometimes ox as well), has already been seen in connection with Village Community. *Dhena* is also used to indicate the same species, although it abounds in the Rig Veda with various other meanings. But it is used sometimes to mean cow.⁸ A milch cow in particular is its meaning elsewhere.⁹ In plural, however, it generally stands for draughts of milk.¹⁰ But *dhenu* seems to be the proper word always used in the sense of milch cow. The *dhenu* is said to yield *savardugha*, that is, milk which tastes like ambrosia.¹¹ Cows long for their calves in the pasture or in the stalls.¹² *Sahavatsa dhenu*, that is, cow with her calf, is mentioned elsewhere.¹³ Its function of giving milk has been especially referred to in one passage.¹⁴ *Dhenu* and *vrisha* are contrasted again in the hymn to Agni.¹⁵ The barren cows are frequently alluded

¹ i, 160, 3.
² vi, 12, 4.
³ viii, 75, 8; viii, 96, 8; ix, 58, 2.
⁴ iii, 34, 3.
⁵ i, 194, 4.
⁶ i, 190, 5.
⁷ v, 62, 2.
⁸ ii, 2, 2.
⁹ viii, 14, 3.

¹⁰ vi, 46, 4.
¹¹ v, 58, 6; ix, 74, 3.
¹² i, 153, 4; i, 180, 3; ii, 40, 2.
¹³ iii, 1, 9; iv, 58, 6.
¹⁴ i, 32, 9.
¹⁵ x, 5, 7.

to as proper offerings to the gods to be burnt with other animals. *Vasa*, as such, is mentioned in the Rig Veda.¹ *Stari* also stands for a barren cow, as when, for the sake of weary Shayu, the Aswins filled her bags with milk.² Cows also had different names according to their colour,³ and the red cow is especially mentioned as *rohini*.⁴ The young cow was called *grishti*,⁵ and the calf was called *vatsa*.⁶ A special name for the eighteen-months-old ox is found to be *tryavi*.⁷ Such separate names for ox or cow of various ages are especially abundant in the later Samhitas.

All this classification of ox, bull, and cow proves one fact, that is, that the Vedic people were familiar with the use of cattle and that these were put to various uses. The rich vocabulary with separate nomenclature only shows the development of the race, as it is not possible to separate in mind, much less to give separate names to, the various functions performed by the same animal. Of course, it is only natural that a race which was pastoral for such a long time must be observant enough to make such distinctions. But it depends more upon the mental development than on the length of time, as is seen in the case of the early Teutons who, for a period two thousand years longer than that in the case of the Indo-Aryans, were pastoral and yet did not develop these linguistic distinctions.

The Aryans of the period of the Rig Veda were also familiar with ram and ewe (*mesha*, *meshi*). Rudra is said to bestow happiness on the ram and ewe.⁸ Elsewhere a hundred rams (*mesha*) are said to be cut up into pieces.⁹ Indra, again, is said to approach in the form of a ram.¹⁰ The Angirases, in another passage, are said to have cooked a ram in honour of the sacrifice to Indra.¹¹ It seems that the practice of castrating rams existed.¹² The wolf (*vriha*) was the great enemy of the sheep.¹³ The wool of the sheep, whence the expression, *urnavati*,¹⁴ woolly, was an important

¹ ii, 7, 5; x, 91, 14.

² x, 116, 22; x, 117, 20.

³ viii, 93, 13.

⁴ viii, 101, 13.

⁵ iv, 18, 10.

⁶ iii, 33, 3; iv, 18, 10; v, 30, 10; viii, 88, 1.

⁷ iii, 54, 14.

⁸ i, 116, 16.

⁹ viii, 2, 40.

¹⁰ x, 27, 17.

¹¹ i, 43, 6; i, 116, 16.

¹² viii, 34, 3; viii, 66, 8.

¹³ viii, 67, 3.

raw material out of which they prepared their garments¹ (see later under Arts and Crafts).

The goat, *aja*² or *ajā*,³ also was a familiar animal whose milk was taken. It was useful as an important animal in the burial rites,⁴ the fat of the goat being used to wrap up the corpse.⁵ Goat and sheep are usually mentioned together in the Rig Veda.⁶

The ancient Aryans had special arrangements for the keeping of cattle which used to pasture in herds, *yutha*.⁷ The *pasupa* or herdsman was a separate person from the owner of cattle, and it seems that he was the paid servant of the owner.⁸ His function in the field, that is, outside the stall, was to protect cattle and keep them together. For that purpose he used to go frequently round the herd,⁹ so that they may not get scattered and thus lost. *Gopa* was also the herdsman, but its use in the Rig Veda being metaphorical, it should be interpreted merely as protector.¹⁰

¹ viii, 86, 11, ix, 8, 5, ix, 86, 47, ix, 107, 11

² i, 162, 4

³ viii, 70, 15

⁴ x, 16, 4

⁵ x, 16, 7

⁶ x, 90, 10

⁷ i, 10, 2, iv, 2, 18; v, 41, 19, etc

⁸ i, 114, 9

⁹ iv, 6, 4; x, 142, 2

¹⁰ i, 164, 21, ii, 23, 6

CHAPTER VII.

ARTS AND CRAFTS.

FROM our point of view this branch of Aryan achievement is very important. It is really surprising to find the ancient Aryans so highly developed as to possess such a variety of arts and crafts to supply their physical needs. Even in the earliest extant literature, the Rig Veda, they are found smelting metals, making ornaments out of them, using quite a large variety of domestic utensils, weaving clothes both ornamental and for ordinary wear, digging wells, building various kinds of houses and ships. It would be highly interesting to know all these arts and crafts in as much detail as is available from the text of the Rig Veda.

Metals.

The knowledge of the use of metals is evident from various references in the Rig Veda. One word, *ayas*, occurs very frequently.¹ The victim of the Aswamedha ceremony, the horse, is said to have manes of gold (*hiranyasringa*), his feet of *ayas*.² Again, *ayas* is referred to as being purified, which is compared to freeing from impurity by the praise of gods.³ A person, perhaps a warrior, is spoken of as whetting the edge of his *ayas*, *ayaso na dharam*.⁴ That *ayas* was a metal is certain, but what metal exactly it was seems to be a little doubtful. It must have been something different from gold, since it is separately mentioned above with gold itself. It may mean either bronze, or copper, or iron; or again it may have been used in the Rig Veda as a general term for these baser metals. From

¹ i, 57, 3.

² i, 163, 9.

³ iv, 2, 17.

⁴ vi, 3, 5.

the later Samhitas, where also this word occurs in the classification of different metals, it is probable that bronze was meant by *ayas*, since in this later period copper and iron are separately mentioned with *ayas*. In modern Sanskrit, however, *ayas* means iron. Thus the meaning of the word seems to have undergone a change since the time of the Rig Veda.

Besides *ayas*, gold is specifically mentioned as another metal of which the people of the time made extensive use. The word *chandra* is used in this sense in the Rig Veda.¹ Agni is said to be resplendent as gold, *chandramiva surucham*.² The interpretation of *chandra* as moon must be declared wrong as, according to Sayana, *chandra*, in the neuter, meant gold in the period of the Rig Veda. The more popular term for gold was *hiranya*, and as such it was recognized as valuable and used as ornaments. It gave much gratification to the vanity of man, as is the case with the use of gold everywhere. Rudra is said to gratify as gold does.³ Indra gave to the worshippers golden treasures among other things.⁴ The pure and golden lustre of Agni is referred to as shining like an ornament,⁵ which latter, therefore, must have been of gold. Indra, after defeating Vritra and other Asuras, gave the Aryas their cattle, their horses, and their gold.⁶ The use of gold naturally implies its extraction from ores. The fact is referred to in one passage which leaves no doubt as to its being known to the Aryans of that period. Dasras the Vandana fell into a well, or rather was cast into it by the Asuras. He was extricated by the Aswins. The position of Dasras has been compared to gold which is designed for embellishment and is like one sleeping on the lap of earth or like the sun disappearing into darkness.⁷ Gold naturally must have been the object of desire. Garga says that he has got ten lumps of gold from Divodasa.⁸ Further, to Indra the desire of men hastens seeking *yava*, cows, and gold.⁹ In the plural the word *hiranya* stands

¹ iii, 31, 5.² iii, 34, 9.³ i, 117, 5.⁴ ii, 2, 4.⁵ iv, 10, 6.⁶ vi, 47, 23.⁷ i, 43, 5.⁸ iv, 17, 11.⁹ viii, 78, 9.

for gold ornaments.¹ In the Aswamedha ceremony, the horse was covered with gold ornaments² before it was sacrificed. Rudra is described as shining with brilliant golden ornaments.³ The powerful Maruts embellished their persons like wealthy bridegrooms decorating themselves with golden ornaments.⁴

The use of gold and its use as ornaments naturally presuppose the art of smelting. Also, we know that *ayas* was transformed into the point of the arrow-shaft, spokes, ploughshare, etc. The exact process of the operation of smelting is not described anywhere in the Vedic literature, either in the Rig Veda or in the later Samhitas and Brahmanas. But its reference is unmistakable even in the Rig Veda. *Dhmatri* literally means blower. It occurs in the same passage⁵ in two forms, viz. *dhmāta* and *dhmātari*. The former in the nominative case clearly means the smelter. The latter is somewhat less certain in its significance. Most probably it stands for *dhmātari* in the locative (*saptamī karaka*), in which case it means the furnace where the metal was smelted. Another passage⁶ cited above in connection with *ayas* clearly refers to smelting. The smelter is elsewhere⁷ described as using the wings of birds, *parṇa sakun-anam*, for the purpose of fanning the flame, that is, these formed the bellows of the smith. This verse is differently interpreted by some, for example, Wilson and Cowell, to mean that arrows were feathered to make them steady in flight. In another passage⁸ which is a little doubtful from this point of view the kettle or ewer is described as glowing, being prepared for the Soma sacrifice, *gharmashchit taptah pravrije ya asid ayasmayah*. But this glowing may also be interpreted as glowing while preparing the sacrificial food. An indirect proof of smelting is also furnished in a verse where the *druna* is said to be *ayohatam*, that is, smitten with *ayas*, so that it must have had some thing of beaten *ayas*, even if it was not wholly made of *ayas*.⁹

¹ i, 122, 2.² v, 60, 4.³ ix, 112, 2.⁴ i, 162, 16.⁵ v, 9, 5.⁶ v, 30, 15.⁷ ii, 33, 9.⁸ iv, 2, 17.⁹ ix, 1, 2.

Ornaments.

In this connection it will be interesting to notice the various ornaments of gold and other metals which are mentioned in the Rig Veda. *Karnashobhana*, literally ornament for the ear, was a sort of ear-ring used by men. A prayer to Indra asks for this ornament for the worshippers.¹ The Viswadevas again are asked to give them a person decorated with golden ear-rings.² The same idea is perhaps conveyed when the word occurs in connection with the Maruts.³ *Kurira* was an ornament of the head which also perhaps was made of gold.⁴ They had anklets, armlets, and rings on the hands. *Khadi* as anklet occurs in one passage.⁵ The Maruts are said to have *khadi* on their shoulders⁶; this can only mean armlets, perhaps as a protection against the lance which the Maruts are usually supposed to bear on their shoulders. In the latter passage Sayana explains thus: *khadayo alankara visesah*. The word may have a reference either to the lance or to the rings on the hands when used in connection with the Maruts in another passage of the Rig Veda.⁷ The priests, again, at the sacrifice are described as *khadihasta*,⁸ that is, having *khadi* on their hands. This must be either bracelet or ring, most probably the former. Another form of the word, *khadin*, is used in the description of the Maruts⁹ and again in connection with Indra¹⁰; it seems to have some reference to a gold ornament. *Vrisakhadi* means a strong ring or bracelet and is usually said to be an ornament on the person of the Maruts.¹¹ *Nyocini* was another ornament most probably of gold and was worn by women at the time of their marriage. The word occurs in the Rig Veda in connection with the marriage of Surya.¹² People also used to wear necklaces made of gold. The word *nishka* is found in connection with Ushas,¹³ and Rudra

¹ viii, 78, 3.² x, 85, 8.³ i, 168, 3.⁴ ii, 34, 2.⁵ i, 122, 14.⁶ v, 54, 11.⁷ v, 58, 2, also *khadishu* in v, 53, 4.⁸ x, 38, 1.⁹ x, 85, 6¹⁰ i, 64, 10.¹¹ i, 166, 9, vii, 56, 13.¹² x, 64, 10.¹³ viii, 47, 15

is also said to wear *nishka*, which Sayana explains as *hara*. Agni is propitiated by men having necklaces of gold round their neck, *nishkagriva*.¹ One passage in the Rig Veda curiously refers to Kakshivat unhesitatingly accepting a hundred *nishkas*,² which therefore must have been used as currency, for why otherwise would a man have so many of them, which he could not possibly use for personal adornment? The expression, *sacha mana hiranyaya*,³ is used as one of the gifts from the gods. Its exact meaning is not definite; Sayana explains it as *mananiyani*, in which case they must be some ornaments. Another ornament, apparently more manly than the preceding one, was prevalent. *Rukma* denoted some ornament of gold shaped like the disk which was worn on the chest. The Maruts are said to have been wearing it and it is described as brilliant and conspicuous.⁴ The brightness of its gold must have made it the subject of comparison with the lovely radiance of Agni, shining upon all.⁵ People used to wear *rukma* along with other ornaments when they went to the sacrifice to praise the deity.⁶ Sometimes its place on the chest is specifically stated by saying *rukma-vakshas*.⁷ The brilliance of lustre that was in the *rukma* is sometimes referred to as *rukmin*.⁸

Ornaments, again, were not only of gold and *ayas* but also of jewels or *mani*. As is the case usually with the more primitive people, *mani* was worn as an amulet to drive away all sorts of evils that might have been influencing them with or without their knowledge. In one case even when the aborigines were thus protected they were dispersed and defeated by Indra.⁹ Here the exact expression is *hiranyamani*, which must mean gold and jewels. Jewels were also strung together and, thus being made into a *hara*, were worn round the neck. The expression *manigriva* suggests this practice in one passage.¹⁰

We may turn our attention now to the various things which the people used in their daily life. Of these, under

¹ v, 19, 3.² i, 126, 2.³ viii, 78, 2.⁴ i, 166, 10.⁵ iv, 10, 5; v, 56, 1.⁶ v, 53, 4.⁷ ii, 34, 2. 8; v, 55, 1; v, 57, 5.⁸ i, 66, 6; ix, 15, 5.⁹ i, 33, 8.¹⁰ i, 122, 14.

Agriculture we have already dealt with the implements which they used for cultivation. We have seen the *langala* or *sira* the plough, the *phala* or *stega* the ploughshare, *astra* or *toda* goad, *khanitra* for purposes of irrigation, *srini* the sickle, *titau* the winnow, *urdara* or *sthivi* the granary or measure. In short, all the implements that are ordinarily required for cultivation were known, though their manufacture might have been crude. But this at any rate is certain, that the different processes in agriculture were already recognized and that a sort of system and method was in evidence in the time of the Rig Veda.

Sacrificial Utensils.

The next item of study most conveniently consists of those things which were used for domestic requirements. Of these, again, the things connected with Soma sacrifice are more fully known than the others, since the Rig Veda consists of hymns only and refers to this sacrifice more than to anything else. *Amatra* was a vessel into which the soma juice was poured after it had been pressed with a stone between two boards.¹ The word is also used, perhaps meaning the same, where the libation of the gods is said to be offered to them out of the vessel.² Considering the popularity of the sacrifices and the proportion of the deity's grace according to the material offerings to it, it is only reasonable to presume that the vessel was a very large one. It is not mentioned whether it was made of wood or of metal. The former is probable since most of the Soma vessels were made of wood. For the same use another vessel was used perhaps of the same material. This was *chamu*.³ Thus the three purifying vessels are referred to in connection with the three daily sacrifices to the deity.⁴ Indra is again asked to drink whatever soma juice there is seen in the vessels and whatever there is in the bowls (*chamu*).⁵ Soma, after being cleansed by men's hands, repose in the vessels, *chamushu*.⁶ Being effused by the priests the pure Soma rushes forth, as if to

¹ ii, 14, 1; vi, 42, 2.

² x, 29, 7.

³ iii, 48, 5; ix, 97, 46.

⁴ viii, 2, 8.

⁵ viii, 82, 7. 8.

⁶ ix, 20, 6.

battle, to alight vigorously upon the *chamu*.¹ It is again addressed as sitting on the *chamu*.² As the water flows out of the filter, so does Soma into the *chamu*.³ Soma is clothed, that is mixed, with the milk of cows as with newly washed robes⁴; the comparison is to the whiteness of the milk. Indra is asked at the sacrifice to pour water (i.e., himself) from the firmament into the *chamu*.⁵ The vigilant Soma sits down in the *chamu* after being purified, that is, filtered.⁶ When effused and collected by priests Soma is guided to the filter from where it alights on the *chamu* of Indra.⁷ Soma rejoices (i.e., brings rejoicings) amongst the gods, being purified in the *chamu*.⁸ Here *chamu* is used in the singular as also in another passage,⁹ where the oblation is said to have been poured into the mouth of Agni, like soma juice into the *chamu*. Practically the same meaning is conveyed by the word *kadru*.¹⁰ The drinking-vessel out of which the gods were supposed to have their fill of soma juice was called *chamasa*, that is, cup.¹¹ Reference is made to one *chamasa* being converted into four by Twashtri,¹² who, in the later Pauranic age, was identified with the carpenter of the gods. Elsewhere Agni is asked not to shake the *chamasa*, for it is dear to the gods, it is the drinking-cup of the gods, and in this the immortal gods delight.¹³ The *chamasa* was made out of wood, as, in a comparison, it is said that Brihaspati seized Vala without a shout, cutting him off like a *chamasa* from a tree.¹⁴ *Chamasa* seems to be the same thing as *dru*, a wooden vessel, very frequently referred to as such in the Rig Veda, but the usual use of the latter is any such vessel without, like *chamasa*, confining itself to a Soma vessel in particular.¹⁵ In some instances this special sense is attached to it.¹⁶ In one case the word *kosa*, which must have meant a vessel in general, has been used in the special sense of a Soma vessel¹⁷; it seems to denote a larger vessel

¹ ix, 62, 16.² ix, 92, 2.³ ix, 97, 37; ix, 99, 6.⁴ ix, 93, 3.⁵ ix, 99, 8.⁶ x, 91, 15.⁷ i, 20, 6; i, 110, 3.⁸ viii, 45, 26.⁹ x, 16, 8.¹⁰ i, 161, 1; v, 86, 3; viii, 66, 11.¹¹ ix, 1, 2; ix, 65, 6; ix, 98, 2.¹² ix, 63, 2.¹³ ix, 97, 21.¹⁴ ix, 107, 18.¹⁵ viii, 82, 7; x, 96, 9.¹⁶ x, 68, 8.¹⁷ ix, 75, 3.

than usual. Out of all these different Soma vessels the juice was taken out with the help of a ladle or *juhū*.¹ Its shape was like a spoon but much larger in size. Just after being pressed between two boards, soma juice would naturally be mixed up with a quantity of soma plants also issuing out with it. This would have to be eliminated before the juice could be thought proper for drinking either by men or by the gods. So it had to be purified, and we have seen many references to this process of purification. The exact mechanism was something like a sieve through which it was made to pass. The sieve itself was straightened by being fastened on to the tops of pegs, and the juice, issuing out of the presses, flowed through it into the Soma vessel. *Pavitra* in the Rig Veda stands for a sieve. Thus the priests milk the soma plant and purify the sweet juices as they fall in drops through the *pavitra*.² The praisers of the deity pour forth to him the soma juice; they worship him in the streams falling from the *pavitra*.³ Again, it is said that the bright Soma is being kept for Agni, poured out upon the middle of the *pavitra*.⁴ In one obscure passage people are asked to bring the *uchchhishta*, that is, the remainder or leavings, of the soma juice upon the *pavitra*.⁵ It is not clear for what purpose it was filtered after the sacrifice, unless it was for the drinking of the men themselves. The sieve or *pavitra* itself was made of wool⁶ and not, as some have erroneously supposed, of *kusa* or other grass. The evidence on this point is abundant and particularly convincing. The rapid streams of the soma juice when being purified are collected to pass through the interstices of the fleece, *anvani meshyah*.⁷ Soma is said to have been strained through woollen filters, *avibhih*, literally with sheep.⁸ It is cleansed by sheep's hairs,⁹ the word used being *avayah*. In another passage soma juice is filtered and cleansed by sheep-skin, *avya* or *avaya tvach*.¹⁰ Soma is described as streaming on the water (according to Sayana) and the woollen sieve, *mesyah*.¹¹

¹ viii, 44, 5; x, 21, 3.² iii, 36, 7.³ viii, 33, 1.⁴ viii, 101, 9.⁵ i, 28, 9.⁶ ix, 16, 2.⁷ ix, 86, 47; ix, 107, 11.⁸ ii, 36, 1.⁹ ix, 86, 11; ix, 91, 2.¹⁰ ix, 69, 3; ix, 70, 7.¹¹ ix, 8, 5.

Again, Soma is purified in his woollen robe, *rupa avyaya*.¹ All these passages leave no room for any doubt, and we can positively say that the *pavitra* or sieve must have been made of the wool of sheep. It may, in some cases, mean goat's hair, as *avi* sometimes stands for goat as well. But in any case it was something manufactured out of the hair of either or both of these animals. Whether it was woven or plaited is, however, uncertain. From the use of the expression, *ati hvaramsi dhavati*,² it may be taken as plaited rather than woven; a woven sieve would not possibly allow the juice to pass so fast. The same expression, *hvaramsi*, is also used in another passage.³

The juice was pressed out of the soma plants; stones were used to crush them. *Upāra* as such occurs frequently in the Rig Veda.⁴ There are a few hymns⁵ from which it will be clear how the various stones, five in number, were so contrived as to crush the plants and bring out the juice. However, we are not much concerned with this beyond the contrivance itself. One element in this method of pounding was the *drishad* or the pounding stone.⁶ The separate name for it only shows its importance in that work of pounding. Besides this contrivance the people of the time seem to have developed another which was more like a mortar. Its special name as distinguished from the *upāra* or the *drishad* raises the question as such. *Dru*⁷ and *chamu*⁸ have also been used in passages where their meaning seems to be mortar for pounding the soma plant. The soma plant was always pressed between stones. But the domestic mortar, to which a few verses are addressed in the Rig Veda,⁹ was made of wood, since it was called *vanaspati* or lord of the forest. The reference to the soma juice does not here mean the public sacrifices. The mortar and pestle together have two verses devoted to them,¹⁰ from which it is clear that they were wooden. *Ulukhala* in the Rig Veda stands for domestic mortar. A slight variation

¹ ix, 16, 6.² ix, 3, 2.³ ix, 63, 4.⁴ i, 79, 3.⁵ x, 94; x, 175.⁶ vii, 104, 22; viii, 72, 4.⁷ x, 101, 10.⁸ i, 29, 9; iv, 18, 3; v, 51, 4; viii, 4, 4; viii, 76, 10; ix, 46, 3; x, 24, 1.⁹ i, 28, 5-6.¹⁰ i, 28, 7-8.

of the word is the modern Indian name of it even now, and the shape and construction are substantially the same.

Domestic Utensils.

Of other domestic things the utensils naturally become important. Meat was cooked in a cauldron, *ukhayah*, and *nīkshanam* was the instrument by which they tested whether the cooking was properly done. *Asechanani* were the vessels in which the broth was distributed, *asechanani patrani yushna*. *Ushamanya* were vessels for confining the heat, and *pidhana* were the covers of the dishes, *charunam* as explained by Sayana. *Anka* or slips of cane, *vetasa-sakha*, were used as skewers to keep the meat in form while roasting, and *sunahavadanasadhana* were the implements of dissection, performing the function of knives.¹ In this special instance the flesh was of horse, but this was not so usual in the Vedic age as some other meat.

Patra was a drinking-vessel generally,² although its technical or special use as a vessel for the meat juice occurs in the *Rig Veda*.³ *Patra* seems to have been made of wood, as in one case there is a reference to its being burnt in the fire.⁴

Of the other domestic utensils, *drona* or a trough of wood was used for ordinary purposes, as also for holding soma juice. The word *kalasa* stands for a pot which was used both for domestic and for religious purposes. The discovery of a buried vessel full of gold is not a happy surprise in modern folklore only. It is told in one of the hymns of the *Rig Veda*.⁵ It seems probable that the *kalasa* was made either of gourd or of clay, but reference to either of these is not conclusive for want of sufficient information. The same sense is conveyed by *kumbha*,⁶ which was of a larger size. Cask or vase would be a more suitable rendering of the word. The birth of Agastya and Vasistha from a *kumbha* may be remembered in this connection.⁷ *Kumbha*

¹1, 162, 13.

²1, 82, 4, 1, 110, 5. ³1, 175, 1, 11, 37, 4; vi, 27, 6.

⁴1, 162, 13.

⁵1, 175, 3

⁶1, 117, 12.

⁷1, 116, 7, 1, 117, 6.

⁸vii, 33, 13.

was made of clay and was easily broken. Thus Indra shattered the clouds like a new *kumbha*.¹

Inside the house the fireplace, *astri*, may mean either the oven where the cooking was done or the spot where the perpetual fire of the family stood. In all probability the two were identified, since, in those days, every food cooked for man was formally offered to the gods and then the food was taken as the remainder left by the gods. The practice is substantially the same among the more orthodox Hindus of to-day, especially the Vaishnavas and the Tantrics. *Pachana*, after its etymological meaning, stood for a cooking-vessel, but the only instance of it in the Rig Veda is in connection with the cooking of the food for horses.² The cauldron for the purpose of cooking the food of man was called *ukha*. It is not mentioned of what it was made. It must have been either of metal or of clay. The probability is that it was made of the latter, although its so general use in sacrificial as well as domestic cooking implies its durability. The boiling of the flesh of the horse in the *ukha* ³ has already been mentioned. The glowing *ukha* with its odorous contents is spoken of.⁴ Again, the *ukha* that is injured or struck, *prahata*, is said to be leaking, *yeshant sravanti*, and to scatter froth or foam.⁵ Another instrument for cooking or boiling was known as *charu*, kettle or ewer. Indra and Soma are asked to destroy the Rakshasas like the thing put into the *charu*.⁶ Soma is asked again to send him who is like a *charu* ⁷; the exact significance of the comparison is obscure. It is also mentioned by Indrani in her conversation with Indra.⁸ The preparation of the food in a *charu* is spoken of by Rishi Viswamitra in his hymn to Indra.⁹ According to one interpretation, which, however, differs both from that of Sayana and of Mahidhara, *pidhana* and *anka* in the Rig Veda¹⁰ are rendered as the lids and the hooks of the cauldron, in which case it would be a *charu*. Thus it could be hung on the fire by means of the hooks. This interpretation is

¹ x, 89, 7.² 1, 162, 6.³ 1, 162, 13.⁴ 1, 162, 15.⁵ iii, 53, 22.⁶ viii, 104, 2.⁷ ix, 52, 3.⁸ x, 86, 18.⁹ x, 167, 4.¹⁰ 1, 162, 13.

made probable by the use of the word *nikshanam*, which is interpreted in this connection not as the instrument to test the cooking, but as a spit or peg with which the kettle was hung. *Sula* occurs in the Rig Veda to mean a spit, and it is also said that some portion of the meat was falling off from it, which makes it very similar to the skewer.¹

Other Domestic Implements.

Among other things of domestic use that occur in the Rig Veda is the word *bhurij*, always used in the plural. This latter fact makes it probable that *bhurij* stood for scissors. But it is, by some, identified with *kshura* or razor. Both these words occur at the same time in one passage,² from which fact, as also from the use of *bhurij* always in the plural, it would be reasonable to interpret the two differently, rendering *bhurij* by scissors and *kshura* by razor. In the verse quoted, *bhurijor iva kshuram* is interpreted by some as sharpening of the razor on some strop, a grindstone in this case. The use of *kshura*, however, is very clear in the later Samhitas, and we should not be far from truth if we assume the meaning of *kshura* to be razor in the Rig Veda. This view is confirmed by the use of the word *vaptri* in the Rig Veda, which clearly means the shaver or barber. When the wind fans the flame, Agni is said to shave the earth as a barber shaves the beard.³

Needles were known and used. It seems to have been made of metal since the conception of cutting is attached to it. Indra is said to have performed three impossible feats, one of which was to cut the angles of the sacrificial post with a *vesi* or needle.⁴ *Suchi* also means needle, and the work of sewing is explicitly connected with it. In praising Raka, Rishi Gritsamada wishes that she may sew her work with a needle which will never break, *sivyat apah suchyachchhidyamanaya*.⁵

Rope or cord was used for various purposes, and separate names, practically meaning the same thing, existed, some-

¹ i. 162, 11.

² viii, 4, 16.

³ x, 142, 4.

⁴ vii, 18, 17

⁵ ii, 32, 4.

times according to the peculiar use to which the rope was put., Thus the rope round the head of the horse while in the stall is denoted by *rasana* with *sirsanya*. *Rasana* is also the name for the straps by which a vehicle is drawn.¹ In these passages as well as in some others² the word may be translated either by traces or by reins. In one passage *rasana* is used in the general sense of rope, as when Varuna is asked to cast off all sin as if it were a *rasana*.³ *Dama* and *sandana* are names of ropes fastening respectively the horse's neck and feet.⁴ These are all special terms for the rope connected with the horse. *Varatra*, on the other hand, is used primarily in agricultural and domestic work. It was more like a thong or strap than rope. Thus : May the *varatra* bind happily or easily,⁵ which means here the traces of the plough. *Varatra* is used in speaking of the yoke being bound with the rope for its support.⁶ The oxen, again, were fastened to the yoke by means of *varatra*, as Indra did in one case.⁷ It was also used for drawing out water from the well, *avata*.⁸

Some commentators have read in the Rig Veda some sort of tube used by the Aryans. But the meaning of *surmi* as such in one passage is doubtful, *ajasraya surmya*.⁹ It is difficult to imagine how the youthful fire can shine before men through numerous tubes. The better and more probable rendering of Mahidhara is either kindled wood or red-hot iron post. The word *surmi* occurs again where its meaning may be a tube, *surmyam sushiram wa*.¹⁰ Sayana leaves the passage unexplained. Yaska renders it as a fair-flowing stream into an abyss. Ballantyne's explanation is "across whose palate the seven rivers keep flowing as fire penetrates and purifies a beautiful perforated iron image." From this the inference may be that it was a tube of iron. But knife as an instrument to dissect the sacrificial horse was surely used.¹¹ The same word, *svadhiti*, means axe for cutting wood in other passages.¹² Thus

¹ 1, 163, 2 5. x, 79, 7 ² iv, 1, 9, ix, 87, 1, x, 18, 14.

³ ii, 28, 5 ⁴ 1, 162, 8 16.

⁵ x, 60, 8 ⁶ iv, 57, 4

⁷ x, 102, 8 ⁸ x, 101, 6.

⁹ viii, 1, 3 ¹⁰ viii, 69, 12

¹¹ 1, 162. 0 18. 20 ¹² v. 7. 8. vii. 3. 9.

the Aswins are asked to give sharpness to the praises that are addressed to them, as people whet an axe upon a grindstone, *lashnotrena wa svadhiti*.¹ Human beings, by their praises, add lustre to Agni, as they add lustre to *svadhiti* by polishing it.² *Svadhiti* was used for cutting trees. To Vanaspati the wish is expressed that those posts (sacrificial *yupa*) which devout men have cut or which the *svadhiti* has trimmed may bestow wealth and progeny.³ Vanaspati is referred to as one whom the sharpened *svadhiti* has brought for great auspiciousness.⁴ Again, in another verse no *svadhiti* is at hand to cleave wood.⁵ Indra also slew Vritra as a *svadhiti* cuts down a tree.⁶ Axe was perhaps the meaning of the word *atka* ⁷ in some passages. Indra is said to have cut his foes in battles with *atka*.⁸ But it seems to mean a battle-axe rather than one used for domestic purposes.

The wickerwork basket for crockery was called *sunā*,⁹ but, according to Sayana, its meaning is knife or other instrument for dissecting the flesh when cooking it. *Akshu*, in one passage, seems to mean wickerwork, by means of which Dasras was perhaps dragged out of the well into which he was cast by the Asuras.¹⁰ Net was known, but it is doubtful whether the net was used for catching fish. It was like a trap to catch game. A hunter is said to arrest *padī* (perhaps a wandering animal) by his *mukshija* ¹¹

Madhukasa seems to mean honeywhip,¹² as when the Aswins are asked to invigorate the worshippers by means of *madhukasa*.¹³

House.

We come now to the house itself. *Gaya* is used frequently in the Rig Veda ¹⁴ It means the house together with all its contents, both animate and inanimate. Thus, Agni is asked to augment the *gaya* and its prosperity.¹⁵ Again, Agni is called the food and *gaya*, *svadha gayah*, that is,

¹ ii, 39, 7

² viii, 102, 19

³ vi, 33, 3

⁴ i, 180, 5

⁵ i, 157, 4.

⁶ iii, 2, 10

⁷ x, 89, 7

⁸ i, 161, 10

⁹ i, 125, 2

¹⁰ i, 74, 2.

¹¹ iii, 8, 6

¹² x, 99, 9

¹³ i, 162, 13, x, 86, 18

¹⁴ i, 22, 3

¹⁵ v, 10, 3, v, 44, 7.

annam griham cha.¹ The word *pastya* is sometimes interpreted as house, but the expression, *ni shasada pastyasva*,² is perhaps more aptly rendered as *pastyasu daivishu prajasu*, that is, divine progeny. This would be more in keeping with the *samrajya* or sovereignty of Varuna. *Pastya* undoubtedly means house also.³ Brahmanapati is said to have some *pastya*, abounding with precious things.⁴ Life endowed with breath is said to repose steady in the midst of its proper abode.⁵ *Yajatam pastyanam* shows that *pastya* is house used here for the householder.⁶ A separate word for big mansions is found in some passages, which proves that the house of the rich was different from that of the ordinary folk. It was something like the modern country house with extensive lawns attached to it, including the stables and other sheds, the necessary paraphernalia of a rich man. *Harmya* in this sense is found in the Rig Veda.⁷ When people of the *harmya* worship Indra he is seen to exult greatly.⁸ That the *harmya* included the stables is found in one passage where the Maruts are compared to horses and are said to reside in the *harmya*. In the same verse *harmyesthah* must mean the people standing on the house. This may mean the high dignitaries on the roof of the house. This would make the house much better built than what we find ordinarily to have been. The mansion again was surrounded by a close fence or a wall shutting out the man "who sits, he who walks or he who sees us."¹⁰ But the dwelling itself would in a general sense be conveyed by *durona*,¹¹ as when it is said that the immortal being has sat down in the dwelling of mortals.¹² The same idea is conveyed by *nivesena*.¹³ *Vesman* seems to mean a wider thing, perhaps meaning domicile in the abstract or at least a settlement,¹⁴ as when by the grazing of the cow it was inferred that there was a *vesman*.¹⁵ Another word, *dama*, occurs for house proper, derived from *dam*, to

¹ vi, 2, 8. ² i, 25, 10. ³ iv, 1, 11; x, 46, 6 ⁴ i, 40, 7.

⁵ i, 164, 30. ⁶ vi, 49, 9, also in vii, 97, 5.

⁷ i, 166, 4; ix, 71, 4. x, 73, 10.

⁸ i, 121, 1.

⁹ iii, 25, 5; iv, 13, 1.

¹⁰ iv, 19, 9; vii, 19, 5.

¹¹ vii, 56, 16.

¹² vii, 55, 6.

¹³ iii, 1, 18.

¹⁴ x, 107, 10.

¹⁵ x, 146, 3.

control, that is, a place where one indisputably controls.¹ Its use only shows the power of the father of the family. But the most usual word for the house is *griha*, found in many passages of the Rig Veda, both in the singular and plural. It was the ordinary dwelling-house of the people. At night the cattle most probably lived in the *griha*.² In the house there was a sacrificial chamber in which the fire was kept continuously burning.³

The construction of the house is not clear from the Rig Veda. There was one pillar or post fixed firmly in the ground which supported the main beam or roof. Beyond this reference to the *upamit*⁴ we find nothing about *parimit*, etc., of the later Samhitas. *Sthuna* was perhaps another such pillar.⁵ The heaven is said to be stable like a well-constructed *sthuna*.⁶ The pillars of *ayas* in a chariot were also called *sthuna*.⁷ Some authorities say that the thatch was made of grass (*trina*), but the word has been otherwise rendered by Sayana and the other Indian authorities.⁸ In the house there was what was called the hall of sacrifice. It had many doors, each with a special appellation.⁹ The door was called *dur*.¹⁰ In connection with *griha* the more popular name for door was *dvar* or *dvara*. Thus the bright *dvars* of the hall in the house are said to be set open.¹¹ The doorpost was called *darya*, as in Ghosha's hymn there is a prayer for reaching a husband's *durya* or door.¹² The door was fastened with a latch which was a strap called *syuman*.¹³ *Prostha* was either a bench or less probably the courtyard. The people used to lie on it and go to sleep.¹⁴ In the same passage the word *vāhya* occurs which means a couch; perhaps it was in reality a litter, as Wilson renders it.¹⁵ Here also we find the word *talpa* used, which undoubtedly means the bed. It is the same in later Sanskrit. *Upabarhana* was the pillow, as *chitti* is called the pillow when Surya went to her husband.¹⁶

¹ i, 1, 8. i, 61, 9, etc. ² vii, 56, 16; x, 106, 5.

³ i, 69, 2. ⁴ i, 59, 1. iv, 5, 1. ⁵ viii, 17, 14.

⁶ v, 45, 2. ⁷ v, 62, 7.

⁸ i, 161, 1; i, 162, 8. ii, 11; x, 102, 10. ⁹ i, 188, 5.

¹⁰ i, 113, 4; i, 121, 4; ii, 2, 7.

¹¹ i, 13, 6.

¹² x, 40, 12.

¹³ iii, 61, 4.

¹⁴ vii, 55, 8.

¹⁵ Wilson, Vol. IV, p. 123.

¹⁶ x, 85, 7.

Wells.

Outside the house, for domestic purposes, wells were extensively used. Sometimes natural fountains were called *avata*, but in most cases it meant a well artificially dug.¹ Indra is asked to drink the soma juice as a thirsty ox hastens to an *avata*.² The exact process is described elsewhere, where Indra is entreated to come down as a bucket is lowered into an *avata*.³ Soma juice flows copiously like a deep *avata* that supplies water.⁴ Indra looks down with favour upon his praisers as a thirsty man looks down on *anavata*.⁵ The praises converge towards Soma, as herds towards the *avata*.⁶ Rishi Budha says: set up the cattle trough, bind the straps to it; let us pour out the water of the *avata*, which is full of water, fit to be poured out, and not easily exhausted.⁷ Most probably a well was not provided in each house, but one or a few for the whole village. Thus the gathering at the well is mentioned.⁸ It must have been deep and well provided and inexhaustible, as is seen in a passage cited above, as also from another.⁹ There used to be a wooden trough by the side of the well called *ahava*, into which water was poured after it had been raised with a smaller vessel, *kosa*, which was dragged by means of a strap or *varatra*.¹⁰ The work of dragging was performed with the help of a stone wheel (*uchchachakra*). The process, it will be noticed, was exactly the same as it is to-day in Northern India, particularly in the Punjab, probably the place of its birth.

Tanning.

The people of the time of the Rig Veda also knew the use of leather. *Charman* as hide or skin is referred to in various places. In many places hide is meant,¹¹ referring to the covering of the new cow by the hide of the dead one to deceive the calf. But it was also used in the general

¹ 1, 85, 10, 1, 116, 22² 14, 17, 16.³ x, 25, 4.⁴ x, 101, 6.⁵ 14, 50, 3.⁶ x, 101, 5.⁷ x, 101, 5-7.⁸ 1, 110, 8; i, 161, 7; iii, 60, 2.⁹ 1, 130, 2.¹⁰ viii, 62, 6.¹¹ 1, 55, 8.

sense of skin.¹ Hide was used in the instrument to press the soma juice.² The rendering of *charman* by bag made of hide in x, 106, 10, as is done by Macdonell, is simply absurd. Here it means the milk-bag of the cow, the udder. The use of hide could have been possible only with the knowledge of the art of tanning. Tanning of hides, *mā*, is mentioned in the Rig Veda,³ as also the tanner or *charmamāna*.⁴ But the latter word is also interpreted otherwise as cuirasses of leather, practised in wearing leathern armour. The exact process of tanning cannot be gathered from the Rig Veda. In one passage it is mentioned that hide was moistened by water⁵; this was of course as a preliminary to tanning, but nothing else is said anywhere else. Besides *varatras*, straps, and the hide used in the pressing-board of Soma, leather bags also were prepared out of hides. The grog shop had leather bottles,⁶ as perhaps these were the only effective means to keep the wine in good condition. The Maruts are asked to draw open the tight-fastened downward-turned water-bag, so that the high and low places may be made level.⁷ A leather bag was also used for keeping curds, and as such it is said to be unbroken and without a defect.⁸ Soma juice was sometimes kept in a leather bag, and we have the Aswins invited to drink soma juice out of it.⁹ In one case it is called *dhmata*, that is, inflated, when the effect of dropsy is compared with it.¹⁰ Skins were also used as clothing, but this must have been at an age previous to the period of the Rig Veda, since by this time weaving was well known. The reference can only be to a custom which was a thing of the past. The Maruts are said to wear or have in their persons *ajina* or deer's skin.¹¹ The other reference is to a *muni*,¹² or one who has renounced the life of a householder; but here it is uncertain whether *mala* means skin or soiled garment, probably the latter. Both these allude to persons who are not ordinary or normal personalities and cannot be taken to represent the usual dress in society. Of the art of weaving we have ample

¹ iv, 13, 4.² viii, 5, 38.³ v, 83, 7.⁴ vii, 89, 2.⁵ x, 94, 9; x, 116, 4.⁶ i, 85, 5.⁷ vi, 48, 18.⁸ i, 166, 10.⁹ viii, 55, 3.¹⁰ i, 191, 10.¹¹ viii, 5, 19.¹² x, 136, 2.

evidence to show that the people were far too advanced to depend on *ajina* for daily clothing.

Wearing Materials.

The wearing material most popularly used was wool. *Vasas* is the most usual word used for clothing in general.¹ Before the sacrifice of the horse in the Aswamedha ceremony it was covered with a piece of *vasas*.² Pushan is said to be the weaver of the cloth (that is, the wool) of sheep.³ The wind raised the *vasas*, meaning the vesture, of Mudgalani.⁴ Among the givers of *dakshina* or present at the sacrifices is mentioned the giver of *vasas*.⁵ *Vasas* was, as already said, the general term for clothing, in which of course was included dress. But special words to denote the latter are not wanting. *Vasana* ordinarily means a dress, as Agni is said to clothe the earth with new dresses, derived from the rains.⁶ The more usual term for dress is *vastra*. Agni is asked to assume his clothes of light, *vastrani*.⁷ *Bhadra vastra* or auspicious raiment is spread for Vayu.⁸ The praise to Indra, the hymn itself, is said to be auspicious and clothed with white raiment, *bhadra vastrani arjuna vasana vach*.⁹ The word *atka* has also been sometimes used in the Rig Veda in the sense of garment.¹⁰ Some authorities interpret it as mantle rather than the garment itself. In an obscure passage¹¹ it is supposed to be said as woven, *vyuta*. The Maruts are described as wearing *hiranyan atkan*, that is, mantles adorned with gold.¹² *Vasas* has also been sometimes used as mantle, although its usual meaning is clothing in general; in such cases it is called *adhivasa*.¹³ The æsthetic taste must have grown with regard to dressing. *Atka* is sometimes spoken of as *surabhi*¹⁴ or well fitting, *vasano atkam surabhim*.¹⁵ The mantle seems to be a common dress of all, perhaps like the toga of the Romans. The deity Varuna wears one set with gold,

¹ i, 34, 1; i, 115, 4; viii, 3, 24.

² x, 26, 6.

³ i, 95, 7.

⁴ vii, 39, 2.

⁵ i, 122, 2.

⁶ x, 123, 7.

⁷ ix, 102, 2.

⁸ i, 26, 1.

⁹ iv, 18, 5; v, 55, 6, etc.

¹⁰ v, 55, 6.

¹¹ vi, 29, 3.

¹² i, 162, 16.

¹³ x, 107, 2.

¹⁴ i, 134, 4.

¹⁵ i, 160, 16; x, 5, 4.

bibhrad drapim hiranyayam.¹ Nasatyas stripped off, from the aged Chyavana, his entire skin as if it had been a *drapi*.² Savitri is said to put on *drapi*, *pishangam drapin pratimunchate*.³ Sayana, however, renders the expression by *hiranmayam kavacham achchhadayati pratyudayam*, so that *drapi* would mean a golden cuirass. The adorable, again, wear *drapi*,⁴ as also Pavamana.⁵

There was a great variety of dresses. Some would be worn ordinarily for all times, others again were reserved for special occasions, and were of a much better quality. Thus Soma is asked to bring *suvasanani* or handsome garments.⁶ Ushas puts on becoming attire like a wife desirous to please her husband.⁷ The sacrificial *yupa* is said to be clad well.⁸ *Jnana* or knowledge of the supreme Brahma is said to deliver her person to the devotee as a loving wife well attired presents herself to her husband.⁹ The bridal garment was a special one, and must have been appropriate to the joyous ceremony by its splendour and beauty. *Vadhuya* as such is referred to in one passage of the Rig Veda.¹⁰ Embroidery as an art was known. The exact method of such embroidery cannot be discovered, but reference to it is found in the Rig Veda. The dancing girl (*nrityur*) used to wear embroidered garments, *pesansi*.¹¹ In the next verse Ushas is said to wear *pesas*. The border or skirt of a garment was called *sic*,¹² and the mother used to cover her child with it¹³ just as a modern mother in India does. In the Rig Veda itself we do not find any direct reference to washing or cleansing of clothes, as we do in the later Samhitas. We come across soiled or dirty garments as worn by the *munis*.¹⁴ Reference is also made to newly washed robes, when it is compared to clothing the soma juice with milk, thus making it whiter.¹⁵ Cleansing of garments is compared to Pushan's purifying all around by light and heat.¹⁶

Woollen garments are referred to as being worn by the people as well as by the gods. Pushan is said to be the

¹ i, 25, 13.⁶ ix, 86, 14.⁷ i, 124, 7.¹⁰ x, 85, 34.¹⁸ x, 18, 11.² i, 116, 10.³ ix, 100, 9.⁹ iii, 8, 4.¹¹ i, 92, 4.¹⁴ x, 126, 2.⁵ iv, 53, 2.⁸ ix, 97, 30.⁹ x, 71, 4.¹³ iii, 53, 2.¹⁶ x, 26, 6.¹⁵ ix, 93, 3.

weaver of the cloth (the wool) of sheep.¹ The ewes, *avi*, of Gandhara were famous for their wool.² *Urnam parushnim* occurs elsewhere.³ *Urna* means wool. The sheep is called *urnavati*, that is, woolly.⁴ The *barhis* are said to be soft as *urna*,⁵ as also the virgin earth.⁶ In all uses of the word *urna*, it must be remembered that goat's hair may have been included. But wool was certainly used, as is proved from the allusions to *avi* or sheep. *Samulya* again is understood by some as woollen garment.⁷

Weaving.

The art of weaving developed wonderfully well. The exact process is not described, but the special terms used in the text show the complications that were already attained in the weaving industry. The word *vaya* as weaver is found in the Rig Veda.⁸ Pushan is called the weaver of wool.⁹ Weaver, perhaps, is also the meaning of *siri*.¹⁰ The weaver worked with the warp, the woof, and the shuttle. *Tantu*¹¹ means the warp, and was derived from the idea of stretching.¹² *Tantru* used with *siri* may also mean the same thing.¹³ *Olu* means the woof. Rishi Bharadwaja says: I understand not the threads of the warp, nor the threads of the woof, nor that cloth which those who are assiduous in united exertion weave; *naham tantum na vijanamyotum, na yam vayanā samare atamanah*.¹⁴ Agni Vaiswanara is said in the next verse to understand the threads of the warp and of the woof. The shuttle, *tasara*, was used in weaving, and it is said that devotees have made the prayers serve as *tasara* for weaving.¹⁵ The web was spread by means of pegs, *mayukharh*.¹⁶ The stretching of the web in this way is also mentioned in another passage.¹⁷ It will be seen from the original texts referred to above that the weaving industry must have been very common and widely known, so that it was the subject of

¹ x, 26, 6

² iv, 22, 2; v, 52, 9

³ x, 18, 10.

⁴ x, 26, 6.

⁵ x, 130, 2.

⁶ x, 130, 2.

⁷ viii, 56, 3

⁸ x, 85, 29

⁹ x, 71, 9.

¹⁰ x, 71, 9.

¹¹ vii, 99, 3.

¹² i, 126, 7

¹³ vii, 3, 4

¹⁴ ii, 3, 6.

¹⁵ vi, 9, 2. 3.

¹⁶ vi, 9, 2.

¹⁷ x, 130, 2.

apt comparisons even in religious hymns in which they occur. Most probably each village had its separate weaver. The industry was not confined to each family, as in that case *vaya* and *siri* would be meaningless, whereas they are referred to as professions.

Dice.

The state of progress of the Vedic Aryans can also be understood from their pastimes. Gambling was one of the most popular recreations as it was one of the causes of ruin.¹ Dicing (*aksha*) was known in the Vedic age, and it continued to be a pastime even in the Epic age, when Yudisthira lost everything at the game. *Aksha* or dice was prepared from the *vibhidaka* nuts. Thus in one passage *bibhidaka* itself stands for gambling.² It is also used for dice.³ Being made of that particular nut it naturally took the same colour. So, the tawny (*babhru*) dice are said to rattle as they are thrown.⁴ The vivid picture of the ruinous condition in which the thoughtless gamester may be launched is so brilliantly drawn by Rishi Kavasha⁵ that we are tempted to consider gambling with dice as one of the most frequent pursuits. This supposition would naturally lead to the manufacture of dice out of the *bibhidaka* nut. But this need not have existed as a separate industry, for there could not have been any such large demand as to necessitate its existence in the village. Most probably there was some public-house to which people resorted for gambling, for the gamester is said to go to the gambling hall.⁶ Moreover, in one passage the creditor had to go to the house of the debtor, who had lost in gambling, to realize the debt, where his mother, father, and brothers disowned him.⁷ The lost man was apparently gambling outside the house. Gambling was the pastime not only of the ordinary people; it was largely the practice among the higher dignitaries. Even the king paid homage to the dice.⁸

¹ x, 34.² vii, 86, 6.³ x, 34, 1.⁴ x, 34, 5.⁵ x, 34.⁶ x, 34, 6.⁷ x, 34, 4.⁸ x, 34, 8.

Navigation.

Navigation was known as early as in the period of the Rig Veda, though it was not so frequent on the sea. This is rather strange. Whatever may have been the exact original home of the Aryans, it never could have been near the sea or even near a large river. But in the Rig Veda we not only find the Aryans easily crossing the rivers of the Punjab, but they were also venturing out into the sea. From this two facts can be reasonably deduced. The first is that the Aryans must have settled for a long time in the Punjab previous to the composition of the Vedic hymns. A new art was, in the meantime, learnt up and extensively practised. Specially is this the case if we remember the slow growth of such arts among a primitive race. The Greeks learnt the art of navigation, and were adepts in it only at a later stage of Phœnician maritime activity. But here a race absolutely unused to the sea, or to any vast expanse of water, suddenly came near the five rivers which, at the time, were very wide and fast flowing. They learnt gradually the art of managing the rivers. The land was fertile and sufficient for their sustenance. The non-Aryans were powerful, and the constant war with them was engaging the best attention of the new adventurers from the north. Yet we find them sailing down the Indus and going out into the sea. The reason for this must be sought either in the economic pressure due to the growth of population in a fertile soil and a tropical climate, or to the essential spirit of adventure that characterizes a race marching out and conquering all the four regions in Asia and Europe.

The second fact that we are led to assume is that the Aryans learnt the art of navigation, at least at the cruder stages, from the non-Aryans. The original inhabitants possessed a culture which presupposes their knowledge of crossing the rivers. The Aryans must have been taught about it by the slaves and the conquered. They had to take it up and improve it, if they wanted to live in a land divided by so many rivers. If the Aryan settlements were to be kept as a homogeneous unit, and if solidarity was

essential for effective conflict against the non-Aryans, they were bound to develop this art as a necessity for race-preservation and race-development. This impetus to navigation led, in time, to that further adventure into the sea, which they must have reached very early by moving, as all primitive races do, along the rivers, easily getting food and water as they marched on.

Thus we see that the Aryan advent into India must have been for a long time before the *Rig Veda*, and that the art of navigation was developed as a necessity, and most probably the nautical elements were learnt from the barbarians themselves whom the Aryans had been dislodging.

Means thereof.

The state of navigation that opens before us from a study of the *Rig Veda* is much better than what we should expect from a people just used to it and just learning it up from others and adopting it. *Nava* or boat is referred to in the *Rig Veda*, and the deity, Agni, is asked to convey the devotees in a *nava* across the sea.¹ The same deity is again asked to send off the adversaries, as if in a *nava*, to the opposite shore,² so that they may not any more trouble the praisers of Agni. The more frequent words, however, for boat or ship was *nau*. The devotees meditate on the deity, as a *nau* bears across (the river)³ The Aswins are asked to bear the praisers across (the sea of life) like two *naus*.⁴ Again, for the safe bearing of the *nau*, the divine Varuna is propitiated.⁵ The Viswadevas are asked to conduct the worshippers through many difficulties, as in *naus*, across the waters⁶ The *nau* was built of wood, most probably dug out of a tree. It is described as *daru* or wood only,⁷ so that it may have been nothing but a piece of wood crudely fitted for the sea. The passage, however, is obscure, Sayana explaining it as the wooden body of the deity called Purushottama.

¹ 1, 97, 8

² 11, 39, 4

³ 1, 97, 7.

⁴ VIII, 42, 3

⁷ x, 153, 3

⁵ 1, 131, 2

⁶ VIII, 83, 3.

Navigation and Samudra.

The question has often been discussed as to whether the Aryans merely went to the sea for sporadic excursions or whether regular trade by sea existed. The subject properly comes under trade, which we shall study later on. But it is necessary to refer to this for the purpose of understanding the extent of their development in this line. Ships must have been much bigger when used for the sea than when they were built for river service only. The story of Bhujyu, son of Tugra, tells of the *sataritra*, the vessel with one hundred oars, by which the Aswins saved him.¹ The fact may have been exaggerated, but the existence of big sea-going vessels is proved by the story. The idea of such a ship could have been conceived only by the existence of seaworthy vessels. The most decisive proof of ocean voyage is to be found in i, 182, verses 55-7. The Aswins are said to have constructed a pleasant, substantial, winged bark, *plava*, borne on the ocean waters, *samudra*, for the son of Tugra by which, with mind devoted to the gods, they bore him up and, quickly descending, they made a path for him across the great waters. Four ships, *chatasro navah*, launched into the midst of the receptacle of the waters, *arnasi samudre*, sent by the Aswins, brought safe to shore the son of Tugra who had been cast headlong into the waters and plunged into inextricable darkness. Professor Roth has rendered *samudra* by *antariksha* or mid-heaven, and, with characteristic obstinacy, tried to explain away the whole affair about Bhujyu and his misfortunes at sea. But certain difficulties arise if we follow Roth. They are:—

- (i) How could Bhujyu fall into difficulties in the sky?
- (ii) How could he get there in the sky? By means of an aeroplane? If so, what proofs are there of this more wonderful feat?
- (iii) Bhujyu went to fight with the enemies who were ~~in~~ a *dvipa*. The barbarians also must have been conversant with aeroplanes by which they defeated Bhujyu. Professor Roth has not raised the question of aeroplanes, but there are

enthusiasts who attempt to explain every indefinite passage in the Vedas by reading into them the latest achievements of science.

(iv) *Sindhu*, *kshodas*, and *arnas* can never be translated by *antariksha*, not even Roth attempts that. All these are synonyms of *samudra* and all these imply water. How can this anomaly be explained away?

(v) The expression, *arnasi samudre*, used in relating the story of Bhujyu,¹ is unequivocally the ocean; one is almost tempted to call it a tautology by means of which the author has tried to be explicit.

(vi) The word *nava* in the same passage makes it impossible to understand the sense of it except as a disastrous voyage against an enemy island, *dvipa*, in the course of which Bhujyu was either defeated in a naval battle or met with shipwreck.

Zimmer again attempts to explain *samudra* by identifying it with the mouth of the Indus where it is pretty wide. This is something more rational. But yet this would not explain all the contexts where *samudra* occurs. All sacrificial viands were supposed to concentrate in Agni, as the seven great rivers flow into the *samudra*.² The contrast between the *samudra* and the rivers is undeniable. How could the one be identified with the other? This passage is not an exceptional one nor does it stand alone. As the rivers are solicitous of mixing with the ocean, so are the priests bearing efficient libation to Indra.³ The soma juice enters the vast and profound Indra as rivers flow into the *samudra*.⁴ Varuna has performed the wonderful act whereby the lucid water-shedding rivers do not fill the *samudra* with water.⁵ Powerful praises in the sacred song are said to centre in Indra as rivers flow into the *samudra*.⁶ Saraswati, the chief and the purest of rivers, is described as flowing from the mountains to the *samudra*, *yati giribhya asamudrat*.⁷ In Indra all praises, all kinds of sustenance concentrate, like the aggregation of waters in the *samudra*.⁸ May the loud

¹ i, 182, 6.

² i, 71, 7.

³ iii, 36, 7.

⁴ iii, 46, 4.

⁵ v, 85, 6.

⁶ vi, 36, 3.

⁷ vii, 95, 2.

⁸ viii, 16, 2.

praises proceed to Agni as rivers to the *samudra*.¹ After being filtered, the soma juice flows promptly to the pitchers, as rivers running downwards flow into the *samudra*.² Soma is asked to enter Indra's heart as the rivers enter the *samudra*.³ The material at our disposal is very abundant, considering the meagre references with which we usually meet in the Rig Veda.

This demolishes beyond any hope whatsoever Zimmer's interpretation of *samudra* by river. It may not, it seems, be surprising to find somebody advocating the rendering of *samudra* by land. Against this also there are passages which, with equal strength, contrast land with *samudra*.⁴ In researches into the history of a race a fact must be recognized as a fact, and the greatest and the most distinguishing marks of the development of a race, its agriculture and its adventures, must be fully appreciated before its true history can be told. Obsession of pre-conceived theories is as fatal to this as the more perverse attempt to belittle its past. The assertion of aeroplanes is as unfounded from the available evidence as the denial of sea-voyage.

The argument against sea-voyage is merely negative. The critics say that in that case there ought to have been mention of masts, etc., the necessary equipments. But we should not expect much, in the Rig Veda, of what were not the main occupations of life. Still there is a passage which refers to the sails, where the *plava* or ship is called winged.⁵ Ordinarily, however, the boat was propelled by the oar or *aritra*. We have already referred to the word *sataritra*, or the vessel with one hundred oars. The Viswadevas are requested to construct the ship which is propelled by oars, *aritra-parṇa*.⁶ So also *aritra* means the rower of a boat or the helmsman. The bird is said to give due directions to its voyage, as a helmsman guides a boat.⁷ Soma is said to propel the voice that indicates the path of truth as the boatman propels his boat.⁸ A less complete means

¹ viii, 44, 25.² ix, 88, 6.³ ix, 108, 16.⁴ i, 163, 1; iv, 21, 3; v, 55, 5; viii, 6, 39.⁵ i, 182, 5.⁶ x, 101, 2.⁷ ii, 42, 1.⁸ ix, 95, 2.

of crossing a stream was *dyumna*, raft.¹ It was much cruder than the *nau* or *nava*. Navigable rivers were distinguished from shallow ones. They were called *navya*,² evidently a variation of *nava*, that is, such as must be crossed by a boat.

Hunting.

The art of navigation developed out of necessity for the preservation and co-ordination of the race, and it was then utilized for purposes of trade and commerce. Hunting, on the other hand, was prevalent before the race was settled in any permanent habitat, when it had to depend on game for its livelihood. So, we should expect this to be well developed. With the conflict with the non-Aryans, the weapons also must have improved, and these again must have been, as far as possible, utilized for purposes of hunting. In the Vedic age hunting was one of the many arts of a previously pastoral life, which were nonetheless practised as supplementary to the main occupation, viz., agriculture. It is not possible to speak definitely about the extent to which hunting was resorted. But we find many references in the Rig Veda, from which we can ascertain that the practice of hunting existed, and the hunter was practically a professional man. In the hymn on the bird, the wish is expressed that no archer, armed with arrows, may reach it.³ The wild ox was also considered a game.⁴ But the arrow was not the usual weapon employed for this purpose. For the more harmless animals, birds, antelopes, etc., nets were used, and these occupied the major portion of hunting. So the hunter was called *pasin* or *nidhapati*, because his occupation was to handle the *pasa* or *nidha*, the net. We have already referred to *mukshija* as the net.⁵ But *pasa* and *nidha* occur more frequently. Thus to Indra it is said: let no person detain thee, as fowlers throwing snares, *pasin*, catch a bird.⁶ The *nidhapati* is said to seize with a snare.⁷ Indra is asked to release his praisers who are like men bound in the net.⁸ The

¹ viii, 19, 14.

² ii, 42, 2.

³ iii, 45, 1.

⁴ i, 33, 11; i, 80, 8; i, 121, 13.

⁵ x, 51, 6.

⁶ ix, 83, 4.

⁷ i, 125, 2.

⁸ x, 73, 11.

boar-hunt was one of the pastimes in the period of the Rig Veda. It was a famous function in the annual ceremony (*aheria*) of the martial Rajput, and the wild excitement attending it has been the theme of many a national bard.¹ In the Rig Veda also it is mentioned when hunters were accompanied by the dogs who used to discover the boar from its hiding-place, but here it is not mentioned whether the hunt was with arrow or with lance as in Rajputana. Indrani in her contempt for Vrishakapi says: may the dog which chases the boar seize him by the ear and devour him.² But in the pursuit of the more fierce animals, the less dangerous method of catching them by means of pitfalls was used. Thus was a lion confined.³

Archery.

But by far the most important weapon for defence as well as for offence against non-Aryans and the wild animals was the bow and arrow. Warfare in those days was universally carried on by means of this, and the instruments were developed almost to perfection.⁴ The sky is once compared to the bow, *dhanus*.⁵ Indra's well-made and auspicious bow is said to be far-darting, and his golden arrow unfailing.⁶ The worshippers stretched the bow of manhood for the beloved and courageous Soma.⁷ A Kshatriya used to die with his bow in hand, and it was removed only before the funeral ceremony.⁸ This, it may be remembered, was the prevalent sentiment throughout India during her days of military glory. For a soldier to die in harness in the field is still the highest ambition. For the Mahomedan, too, it was the most direct road to Behesta to die fighting for the cause of his religion. The sentiment is one of the earliest in the human breast, and it tends to continue to be so. Thus *Vach*, or speech personified, seeks to bend the bow of Rudra to slay the destructive enemy of the Brahmanas.⁹ The bow was indeed the most effective • weapon known to the ancient Aryans. It was the chief

¹ Todd: *Rajasthan*.

² x, 86, 4.

³ x, 28, 10.

⁴ Implements of war are reserved for treatment in a later volume.

⁵ viii, 72, 4.

⁶ viii, 77, 11.

⁷ ix, 99, 1.

⁸ x, 18, 9.

⁹ x, 125, 6.

instrument in battle. A whole verse¹ is devoted to bow in the hymn on weapons, persons, and implements, where the prayer is thus: May we conquer the cattle of our enemies with the bow; with the bow may we be victorious in battle; may we overcome our fierce exulting enemies with the bow; may the bow disappoint the hope of the foe; may we subdue with the bow all hostile countries. In another verse²: may the two extremities of the bow, acting in good harmony, like a wife sympathizing with her husband, uphold the *bibhritam* (either the warrior or the arrow), as a mother nurses her child upon her lap; and may they, moving concurrently, and harassing the foe, scatter the enemies. Another word which is frequently used for bow is *dhanvan*.³ The bow was handled with such skill that Brahmanaspati is said to attain, with the truth-strung quick-darting bow, whatever he aims at.⁴ The bow was no doubt constructed out of some pliant yet strong wood. The bow-string was made of straps of leather. In colour the *godha* was tawny.⁵ It was more popularly called *jya*.⁶ It was drawn tight upon the bow and, while in action, repeatedly approached the ear of the archer.⁷ In this passage the *jya* is said to be a strap made of cowhide. It was usually allowed to lie loosely bound to the ends of the bow and was tightened when meant for action.⁸ The end of the bow itself with which the string was fastened had a special name, *artni*.⁹ The arrow itself was given so many names that one is apt to be puzzled at them. The exact significance of all these names is not quite clear. It may have been that the importance of the arrow secured for it so many appellations, or it may have been that each name stood for some special kind or for some special function. It is almost impossible now to discover what exactly was the peculiarity which was conveyed by these names. *Bana* stands for arrow in one place,¹⁰ where, obscurely enough, it is said to alight like shaven-headed boys. *Bunda* is another name used rarely.¹¹

¹ vi, 75, 2.² vi, 75, 4.³ ii, 33, 10; vi, 59, 7; vi, 75, 2; viii, 20, 12; ix, 69, 1.⁴ ii, 24, 8.⁵ viii, 69, 9.⁶ iv, 27, 3.⁷ vi, 75, 3.⁸ x, 166, 3.⁹ vi, 75, 4.¹⁰ vi, 75, 17.¹¹ viii, 45, 4.

Indra smote rain from the clouds with his far-stretched *bunda*.¹ So also unfailing was the golden *bunda* of Indra.² *Sara*, it seems, was a general term for a missile weapon, but its special use in the sense of arrow is not rare in the Rig Veda.³ *Saryā*, literally one made out of reed, was used for the arrow, as when the winds are said to blow the flames like the swift *saryas* of an archer.⁴ The expression, *yuvatim saryam*⁵ means perhaps the unfailing arrow. *Isu* stands for the same thing,⁶ but it is important for our purpose as it occurs in the hymn on weapons, persons, and implements,⁷ where its construction is described. The expressions *alakta* and *ayomukham* are used with *isu*. From this some authorities think that two kinds of arrows are meant, viz., one which is anointed with venom, that is, a poisoned arrow, and the other whose tip is made of *ayas*. But this division seems to be a little forced. The meaning may be put that the same arrow was poisoned and possessed an *ayas* blade. Thus *isu* here stands for a metallic arrow with poison anointed at the tip. *Sayaka* is sometimes used for an arrow,⁸ as when Indra Vaikuntha speaks in self-praise that by his *sayaka* he conquered the wealth consisting of kine, horses, herds, water, and gold.⁹ The arrow is sometimes called *karnayoni*,¹⁰ that is, having their abode in the ear, because while discharging the arrow it had to be pulled as far back as possible to give to it the greatest speed. Thus it would start from very near the ear. The bow-string also is thus said to approach the ear repeatedly.¹¹ Feather is mentioned in connection with the arrow. The real intention might have been, as in later days, to keep the balance of the arrow by making it steady, or it might have been merely ornamental. Considering the importance of the arrow in primitive times, and also considering the perfection of the art of archery, we may reasonably assume the introduction of feather for its utility rather than for mere ornamentation. The arrow is said to put on a feathery wing, *parma*.¹² The dead man is placed in the grave like the feathers of an

¹ viii, 77, 6.² viii, 77, 11.³ x, 87, 6; x, 125, 6.⁴ i, 148, 4.⁵ x, 178, 3.⁶ ii, 24, 8.⁷ vi, 75, 15.⁸ ii, 33, 10.⁹ x, 48, 4.¹⁰ ii, 24, 8.¹¹ vi, 75, 3.¹² vi, 75, 11.

arrow.¹ Therefore, the feather was not permanently attached to the arrow, but used to be laid aside and put on while using it. The quiver containing the arrows was fastened to some convenient part of the body, so that the shots might come in quick succession. *Nisangin* occurs in the Rig Veda, but its meaning is obscure except in one passage,² where the expression *sudhanvana isumanto*, that is, having good bows and arrows, and *nisangina*, are used together, so that the latter can only mean the quiver containing arrows. *Isudhi* or holder of *isu* is certainly a quiver.³ The commander of the whole host bound his *isudhi* on his person.⁴ The *isudhi*, the parent of many, of whom many are the sons, is mentioned elsewhere.⁵ The word *isukrit* is also interpreted by some as the quiver, but it should more properly be rendered as the person who makes the arrows. It occurs rarely in the Rig Veda.⁶ In discharging the arrow from the bow there was the danger of bruising the hand by the twang of the bow and the flight of the arrow. So it was protected by *hastaghna*, literally the protector of the hand.⁷

¹ x, 18, 14.² vi, 75, 5.³ v, 57, 2⁴ i, 184, 3.⁵ x, 95, 3.⁶ i, 33, 3.⁷ vi, 75, 14

CHAPTER VIII.

UNITS OF MEASUREMENT AND EXCHANGE.

Weights and Measures.

FROM the Rig Veda we do not find any clue to a measure of weight. Most probably there was no such measure, as things were measured either by number or by volume. It is doubtful whether any measure of weight was ever known to the Aryans during the whole of the Vedic age. The conception of weight as a standard of comparison is always a matter of late growth in the history of a nation. Among the Greeks and the Romans we do not find any trace of it in the earliest stages of their development. Owing to insufficiency of evidence we cannot ascertain even the approximate date from which they began to use weights as such. But in their case these systems were not developed by themselves; they were borrowed from the Egyptians. Among the latter, these existed only at a very late stage of their growth, and considerable doubt has been cast on their popularity in the ordinary transactions of daily life. The history of the Teutons is much better known. In their case weights as measures were unknown at the time of the conquest of England. Even during the period just following the Norman conquest, we do not hear anything about weights, although otherwise, particularly in political and administrative matters, they were well developed.

Measures of distance, on the other hand, grow at a very early stage. Distance is the most familiar conception in the life of a people, especially during the periods of migration. One day's march or a few days' march would readily become a sort of measure. When settled in a locality, this conception helps equally. The distance from village to village, from one end of the field to the other, all begin with certain

indefiniteness, but all tend ultimately to crystallize into definite measures of distance, suiting, for all practical purposes, the habits of thought of a primitive people. The Aryans in the Vedic age also had such conceptions of distance as measures. *Garyuti* is frequently found in the Rig Veda. Its meaning has been the subject of much discussion leading to very wide differences of opinion. But in one passage it clearly indicates a distance, although what exactly it is cannot be ascertained. Agni is asked to drive away further than a *garyuti* from the devotee poverty, hunger, and the strong demons.¹ Most probably it signified an indefinite and very long distance, since one would like to be as far away from those evils as possible. In the Brahmana period also the word was recognized as a measure of distance. *Yojana* was definitely a measure of distance. It means the distance which can be covered by one ride, that is, what can be traversed at one stretch without unyoking the horses. Thus the Dawn is said to precede Varuna (here identified with the Sun) by thirty *yojanas*.² With fast horses Indra can traverse many *yojanas* at one stretch.³ The Maruts are described as swift-moving like rivers and as having traversed many *yojanas* like mares who have journeyed from far.⁴

For purposes of trade and exchange it is essential that some standard should be devised by which comparisons can be made. If measure by weight was not there at so early a date, the people had to substitute for it a measure by volume. This was essential for even the elements of economic and social life. The Soma sacrifice was the great occasion in those days when the communal life was represented, and it is in this connection that we hear of the measure by volume. *Khari* was a jar which measured the quantity of the soma juice. Indra is asked to give a hundred *kharis* of soma juice.⁵

To other measures used in ordinary life we have already referred while studying agriculture. *Urdara* ⁶ was either such a measure or it was a granary. In either case, it

¹ viii, 60, 20.² x, 78, 7.³ i, 123, 8⁴ iv, 32, 17⁵ ii, 16, 3.⁶ ii, 14, 11.

could broadly compare one heap of grains with another. *Sthivi* also occurs in the Rig Veda¹ with the same meaning. It occurs also in its adjectival form, *sthivimant*.² That they helped measurement is certain, but it is equally certain that measurement by volume, like measurement by distance, was crude. This only shows an imperfect growth of the elements of retail trading.

Currency.

In the period of the Rig Veda, barter was the form of exchange, so that there had not as yet arisen any need for a medium of exchange. In one passage³ suspicion is raised about it, where Rishi Kakshivat speaks of having received a hundred *nishkas*, *nishka* being a golden necklace. So many could not be used for personal adornment. It must have served the purpose of getting other necessities of life. Still we cannot say that it was the usual currency, because its mention is so rare, and because its value could not be consistent with its use as a medium of exchange. Here also we cannot be positive, as we do not know the value of gold in comparison with that of other things. The safe course would be to allow *nishka* as having been the medium of exchange, but to restrict its use to rare occasions or a limited circle owing to the very rare occurrence of the word as such medium and to its probably high value.

¹ x, 68, 3.

² x, 27, 5.

³ i, 126, 2.

CHAPTER IX.

TRADE AND COMMERCE.

Barter.

TRADE of course existed in the period of the Rig Veda, but the villages being self-sufficient units, and the wants of the people being limited, it was naturally confined within narrow limits. *Kraya* is the word for exchange in the later Samhitas, derived from the root *kri*, to buy. In the Rig Veda we find the use of this root only.¹ Ordinarily sale and purchase constituted exchange of things only. Barter was the normal system and no popular medium of exchange as such existed. Indra is offered libations in exchange for ten milch kine.² From this, some have concluded that cattle formed the medium of exchange. But the use of the word does not seem to justify such an assumption.

Higgling of the Market.

Human nature being what it is, the attempt on the part of the parties to depress the exchange value of the commodities of others must have been the same. The higgling and bargaining of the market were known in those early days. Even as it is to-day, an exchange transaction was complete and irrevocable as soon as it was arranged and delivery of things made over. This is clearly indicated in a hymn to Indra by Rishi Vamadeva.³ A man realized a small value for an article of great value, *bhuyasa vasnam acharat kaniyas*, that is, by (giving up) much a man acquired in exchange a little wealth or value. Coming again to the buyer he says; 'This has not been sold, I want the full price. But he does not recover the small price by a large equivalent; whether

¹ iv, 24, 10.

² iv, 24, 10

³ iv, 24, 9.

helpless or clever they adhere to their bargain. *Vasna* in this passage clearly means price. But *sulka* is the usual word for price. Thus Indra's image is so dear that it would not be sold, even for a large *sulka*.¹ The idea of price also underlies another verse where the sacrificer and his wife, by their praises, confer strength on Indra and Varuna to receive, for this price, great wealth from the gods.²

Merchant.

The merchant went by the name of *vanij*, and his position was distinctly inferior to that of the other important classes in society. Dirghasravas is called *vanij*, and as such he has been distinguished from the other descendants of the same line as his, who were all rishis, simply because, according to the legend, he was compelled to trade during a period of famine.³ The merchant is referred to as going to the wood and obtaining water, *vanijvankur āpa purisham*.⁴ The avarice and greed of a merchant is mentioned, and Indra is asked not to deal with the praisers like a merchant.⁵ The word *pani*, as it occurs in the Rig Veda, is so variously interpreted as merchants, *dasas*, demons, members of a special tribe, etc., that we deem it prudent not to rely upon it for our purpose here. Another word, *bekanata*, is identified by some with usurer, especially as it is mentioned with *pani*.⁶ But its meaning is as uncertain as that of *pani* itself. One authority has even identified it with Kashmir and explains the passage as referring to its conquest by Indra.

Maritime Commerce.

We have already discussed *in extenso* the art of navigation as developed among the Aryans of the period of the Rig Veda. These voyages into the sea were mostly sporadic expeditions either for fighting or for mere adventure. There is nothing to prove that there was any commerce carried on with any country outside India. The Babylonian trade must have been of a much earlier date before the advent of

¹ viii, 1, 5.

⁴ v, 45, 6.

² vii, 82, 6.

⁵ 1, 33, 3.

³ 1, 112, 11.

⁶ viii, 16, 10.

the Aryans into India. At the same time we cannot deny the existence of some coastal trade as well as that of voyages for the treasures of the ocean.¹ The Aswins are said to bring riches to King Sudas and they are requested to bring wealth to their praisers from the *samudra*.² Indra is asked to pour riches upon the worshippers from the *samudra*.³ Not only are the treasurers of the sea referred to, as in the above passages, but positive evidence is not wanting for the proof of actual going out to sea for gaining these treasures. Ushas is described as the exciteess of chariots which are harnessed at her coming, like those who, being desirous of wealth, send ships to the sea, *smudre na sravasyavah*, literally, like those, desirous of wealth, going for the sea.⁴ The adorers of Indra, bearing oblations, throng round him as merchants, covetous of gain, *sanisyavah*, crowd the ocean on a voyage.⁵ The worshippers praise the deities for desirable things as those, desiring to acquire riches, praise the ocean on traversing it,⁶ *samudram na sancharane sanisyavah*, explained thus 'those wishing to possess riches for the sake of going through the midst of the ocean praise it! From the above references it seems to be undeniable that maritime trade did exist, but its extent seems to be limited. The want of reference to masts, etc., necessary for going out far into the sea or cross over to Africa or Babylonia, suggests that no such communication was kept up by the Aryans. Along the coast, by the sea, there certainly was commerce, and this commerce was extremely lucrative, so that a merchant desirous of wealth could be fully satisfied by the profits of trade in those regions. Unfortunately no reference specifically alludes to the commodities obtained by this trade.

Pearls were, of course, obtained thus, since we find the use of *mani* or jewels (*see ante*, Ornaments). With regard to other things brought and with regard to the commodities exported, we are in the dark.

¹ vii, 6, 7.
² i, 48, 3

³ i, 47, 6
⁴ i, 56, 2

⁵ ix, 97, 44.
⁶ iv, 55, 6

CHAPTER X.

ECONOMIC CONCEPTS.

CONCEPTS are always generalized terms and often abstractions. We should not, therefore, expect many of them in the earliest literature of any race. The Greeks and the Romans had currency reforms but not much of economic abstractions during the early periods of their history. Later Greeks were famous for philosophic concepts, and we find some economic ones in Aristotle's Politics. The Teutons had none at all while on the Continent, or, if they had, Cæsar and Tacitus failed to notice them. But with the growth of wide economic activity concepts naturally grow. These, when found, are the surest and the truest guide to the economic achievement of a nation, since these invariably follow and never precede economic evolution.

Wealth.

Let us now look at the wealth of the ancient Aryans and study their conception of it. The general term for wealth is *rayi*.¹ The usual prayer to the gods is for wealth. *Rayi* must have included all valuable things, the possession of which would advance the material interests of early man.² Ribhus are asked to give *rayi* which they possess. This is said to comprise cattle, food, progeny, dwellings, and abundant sustenance.³ Men glorify Indra, the lord of riches, for the sake of obtaining sons, valiant grandsons, and rain.⁴ Indra is propitiated so that the devotees may obtain that wealth which comprises cattle, horses, and food,⁵ these being the most important and most valuable possessions. There are also special uses of the word *rayi*

¹ i, 73, 1; ii, 21, 6; iii, 1, 19; iv, 36, 9.
² v, 4, 11. ³ iv, 34, 10. ⁴ vi, 31, 1. ⁵ viii, 6, 9.

standing for valuable things. This is helpful in understanding the things which were considered to be exceptionally valuable and therefore might be identified with *rayi* itself. *Vira* or hero is one of them, *vira* of course standing for a son who is valiant, otherwise the prayer in general terms for a hero would be meaningless. Indra is asked to give the coveted wealth, the source of great power and of numerous progeny.¹ The Maruts are propitiated so that the praisers may thereby daily enjoy great affluence consisting of valiant progeny.² The Dawn is prayed to for wealth, comprehending progeny.³ Horses were included in wealth, and as these formed one of the most important assets in war and in religious ceremonies, they are frequently spoken of specially as wealth or *rayi*. The Maruts are asked to bring wealth comprising horses.⁴ Cattle and food have been very frequently mentioned as *rayi*. Thus the wealth of the early Aryans consisted of progeny, without which the domestic worship and the integrity of the family would be endangered. It consisted of horses, without which it would be impossible to carry on war and all aggressions and defence against the non-Aryans. Cattle were also recognized as wealth, for without them the main industry, agriculture, would be difficult, and sustenance of life would be hopelessly reduced. Finally, food was included, by which of course they understood agricultural products mainly, because without this the very foundation of the social structure, the settlement on Indian soil, would be destroyed. Thus it is true indeed that the conception of wealth is the index of the state of a society. The Aryans had gold, jewels, and ornaments, but these are not specifically mentioned as wealth. This fact would, apart from all other proofs, go to show that the system of exchange was not prevalent to any large extent, so that the conversion of stock was not contemplated in the computation of one's wealth, and the aggregate stock of the most useful things was recognized as such. This is so, not because gold was, volume for volume, less valued than cattle or horse or food, but because gold

¹ II, 11, 13.
² IV, 51, 10.

³ II, 30, 11.
⁴ V, 41, 5.

could not, in times of stress, satisfy those immediate needs of food and protection which, in a primitive race, naturally loomed large owing to the lack of what may be called the "telescopic faculty" of the mind in looking to and making provisions for the future.

Private Property.

In India, besides cattle, progeny, horse, and food, there was another element which must be recognized as important. This is the right on land. (The idea of private property is the last thing that a people develop, because it is directly the outcome of a series of abstract ideas. First, there must be the idea of possession. It must be based on the conception of some abstract right based on prescription, which would condemn any intruder who comes in by the same right to occupy and appropriate like the original man. This possession would thus develop into and confirm ownership. This is too much for a community which is emerging out of a nomadic state and which, in the beginning, finds ample land for appropriation without occasion for any dispute. In Greece and Rome this conception of the ownership of land developed very early. But that was due to the peculiar beliefs of their religion which dominated their whole being. Ancestors had to be worshipped separately because they would not accept libations at the hands of one who was not of their blood. His presence would disturb their rest. Thus family worships were separated from one another. The tombs also had, for the same reasons, separated at an early stage. This spirit of exclusion naturally led to the belief that the family tomb must be well defined and be possessed by the family only. Thus one was excluded from the others. So that in Greece and Rome all the intervening stages of abstract theory of rights and possessions were stepped over by the peculiar religious beliefs. This is further confirmed by the fact that, whereas the regular independent growth of ownership, being based on the individual's rights to property, makes it disposable at his will, the ancient Græco-Roman property belonging to the

family gods on whose behalf the family or its representative, the *pater*, was merely the trustee, was inalienable and indivisible; *paters* came and went, but the corporation, the family, including the dead ancestors, the living members, and those who would be born or adopted into it, remained intact. Destruction of the family only would lead to the alienation of its land.

Among the Teutons this religious belief did not prevail. They, in their settlements on land, held it as belonging equally to all the social units which were families. They did not and could not consider a displacement from a settlement as sacrilegious. The only resentment was what arose out of defeat. In all Teutonic settlements the communal *mark* was the basis of the organization of the village community. The land was theoretically shared by all as to the tripartite division into culturable land, meadow land, and the waste; but no family could point to any particular plot of land which belonged to it. It had only a share, the strips being distributed anew every year. In such circumstances the right of ownership, in the case of the Teutons, of the family, could not develop so long as the pressure of population and the improvements in agriculture did not bring in intensive culture of the soil. With intensive culture it would be discovered that an annual redistribution of the strips would lead to the abandonment, by the cultivating family, of whatever improvements it might have made in the land. Therefore, self-interest would generate solicitude for the same piece of land. Thus family ownership of land was established in Britain. But they had not as yet reached the further stage of individual ownership. This was not an indigenous growth but a foreign engrafting. The Normans brought the feudal idea of individual ownership which William made subordinate to the ultimate authority of the king. The work was not difficult of achievement, since Roman and Continental ideas had already been remoulding English society and English institutions through the preaching of the Christian Church.

* - In India conditions were different. The elements of religious beliefs with which the Aryans separated from the

original home were worship of the dead ancestors and worship of the gods of physical forces. The influence of the new environment wrought its work and brought about, in the earliest stages, the predominance of the former in Greece and Rome and of the latter in India. Indra and Agni, Varuna, the Maruts, Ushas, the Aswins, and all the Viswadevas were deities presiding over some natural phenomena. It is not within our scope to trace this development in the changing environment. But we recognize the fact as established in the Rig Veda itself. The bifurcation of the original religion seems to have been complete. Most of the illustrations drawn by Fustal de Coulanges¹ from India in his comparisons of Græco-Roman with Indian institutions are drawn from the Laws of Manu, a much later work in India. Latter-day India did develop her religion of ancestor worship; that was in the Pauranic age; but in the Rig Veda, Angirasa and other *pitris* are not gods of the first rank.

Thus it is clear that the peculiar religious beliefs of the Aryans which developed exceptionally in Greece and Rome and which, by their ideas of exclusiveness, brought on the institution of private property in land were not the cause of private property in India. Nor can we say that anything like the Norman invasion and Christian Church accelerated the growth of private ownership of land in India as they did in Teutonic Britain. To what then is this early growth of private property due? The explanation must be more or less a theory, since we cannot corroborate it by referring to any text previous to the Rig Veda, and in the Rig Veda private property is so easily accepted that it shows only the earlier establishment of the institution in all its completeness. Yet we think that the only reasonable and probable explanation lies in economic causes. If the Malthusian principle of population be combined with the Ricardian principle of intensive cultivation of the soil, the same results would follow as in India. The Aryans in India found a soil which was more fertile and less trying for them to live in. The extreme cold was not there, nor was there the enervating

¹ *The Ancient City.*

effects which are said to be the curse of India south of the Punjab. The first settlement was effected by extirpating or displacing the non-Aryans. The fertile land fell to the Aryans. Cultivation yielded fruits beyond all their previous experience. The spirit of adventure that is the backbone of a conquering race, combined with abundance of food and a bracing climate, would give the greatest impetus to the multiplication of the race. None of the Malthusian checks, either positive or preventive, except war, could have prevailed at that time, at any rate, not intensively. The fertile soil gave produce in abundance, so much so that its limits could never have been reached, at an early stage, by the increase of population. All these causes would combine to accelerate the growth of population. The fecundity of a race grows and becomes part of it just as any other social or moral characteristic. Thus the Aryans began to grow in number. At the same time they were limited, as to further territorial expansion, on all sides by the mountains, the sea, or the non-Aryans who were an active race. The capacity to multiply grew, whereas the extent of the territory could not be so increased. So, in time there was felt the pressure of population; and people had to take recourse to less fertile lands and to intensive culture of the soil. With time this pressure increased continuously, leading to adventures by sea and further expansion toward the south. It will be interesting to remember that exactly the same conditions led to the Teutonic difficulties in Frisia, and, being hemmed in by the Roman armies on the south and the west, the Teutons had to force their way into the sea and settle in Norway, England, and Iceland. In India the Aryan culture of the time of the Rig Veda was much superior to that of the Teutons in Frisia. Their arts and crafts, their methods of agriculture and warfare, their construction of the chariot, the bow and arrow, and the houses, all point to this. Simultaneously they point to something else. Agriculture or house building could not have developed so much during the nomadic state, nor could the arts of navigation be developed without a sea. The assumption is irresistible that the Aryans had lived in India for a considerable period before the composition

of the Vedic hymns. If so, that confirms our theory of private property. Originally there was no economic pressure of population nor the need of intensive culture. But with time this grew and with intensive culture the ownership of land was gradually evolved. The rapidity of development along this line would exactly correspond to the severity of the pressure of population within, and that of the non-Aryans without, the Aryan settlement. It was only intensified by the development in agriculture failing to keep pace with the tremendous increase of population. To economize the energy of the race and to give it stimulus, the land had to be made the subject of private property, so that the certainty of effects would lead to the greatest improvements of agriculture that were possible with the known methods. Of course, these arguments did not appear to the people of the time. They were impelled by economic needs, and adapted themselves to the changing environment. In doing so they gradually slipped from the state of communal ownership, if ownership at all was there, to the state of family ownership, or, more properly, as we have already seen under Village Community, to that of individual ownership, the head of the family being the real owner.

This process of disintegration with respect to the ownership of land must have had its reflex on other social ideas. Thus we do not find the son a slave of the father, as in Greece and Rome, where he could be sold, and where, in the beginning, he could hold no separate property. In the Rîg Veda we cannot discover a single passage which would relegate the son to such a disreputable position. Yet the Græco-Roman idea of the necessity of the son for the continuance of the family was maintained. The son's position thus was much better here than in the West. In all this we find traces of the working of the idea of ownership dissolving into many and attaching to the individual.

In such a state of society the land, the property, would be recognized as a part of the wealth of the individual or the family. We have abundant evidence of this in the Rîg Veda. *Rekna*s meant inherited property or property in general ;

and it occurs many times in the Rig Veda.¹ Thus our study of the economic and political life of the Vedic Aryans reveals a condition of society which is equally established by a study of their conceptions about wealth and ownership, the only two important and definite conceptions of economic bearing which have come down to us through the Rig Veda.

¹ i, 31, 14, 1, 121, 5; i, 158, 1; i, 162, 2; vi, 20, 7, vii, 4, 7, vii, 40, 2

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