Trans. Inst. Indian Geographers
Vol. 8, No. 1 January 1986

AGRICULTURE IN THE VEDIC AND LATER VEDIC INDIA

V. S. Datye, Pune

ABSTRACT : Vedic literature provides a wealth of information of agriculture practised by the Aryans. An attempt is made here to trace the evolution of agriculture in the Vedic and Later Vedic period. The early Aryan settlers cleared the land for cultivation by burning and cutting the trees. The Aryans had a notion about types of land based on fertility and quality. The land was laid out in fields. They were aware of the influence of climate on agriculture and used different methods for irrigating the fields. They also used manures and followed crop rotation system. In Rigvedic period, barley was the staple crop; while rice and wheat are not mentioned. Cotton is conspicuous by its absence, though the Later Vedic literature mentions several different kinds of crops.

The Indian subcontinent is the home of one of the greatest ancient civilizations. The progress of civilization and the history of agriculture are interwoven in ancient India. Even today agriculture plays a dominant role in the Indian economy. It is, therefore, pertinent to study the history of agriculture from a geographical view point. An attempt is made here to study the agriculture in the Vedic and Later Vedic period in order to highlight some salient features, as the foundations of civilization of India was laid by the Aryans.

SOURCES OF INFORMATION

Information on the types of land, reclamation of land, ownership of land, fields and lay-outs, seasons, crops grown, implements used and irrigation is available from the Vedic and Later Vedic literature.

The Vedic literature is formed of two classes. The first are the four Vedas called Samhitas which actually belong to a period when the Aryanization of India took place. The second class of work are the Brahmanas, Aranyakas, Upanishads and Sutras, composed in the succeeding period called the Brahmana period. The Rigveda is the most ancient work in the whole range of Indian literature. It contains many references to agriculture. It is a collection of 1028 hymns, divided into ten mandalas or books, believed to be composed between 1200 B. C. and 1500 B. C. Of the three later Vedas, Samaveda is of great importance to the history of Indian music. The Yajurveda supplies the formulas and rituals for the whole sacrificial ceremony. The Yajurveda introduces us to a new geographical area and a new epoch of religious and social life in India. The Atharvaveda contains charms and spells to ward off evils and diseases (Bhargava, 1956). The Later Vedic literature (1000 B.C. to 600 B. C.) is the main source of information on the life and culture of the Aryans. We learn a great deal about the agriculture and animal husbandry of the period besides other social systems.

VEDIC AND LATER VEDIC ARYANS

The home of the Aryans has been a subject of great controversy, some scholars believe it to be in south Russian steppe region. About 1800–1600 B. C. they left their home lands and dispersed east and west. The Aryan conquest of the Harappan Towns is mentioned in the Rigveda. God Indra is described as Purandara or the destroyer of fortresses. Aryans met with a stubborn resistence from black skinned, flat-faced, snubnosed Indus valley (Fig. 1) people of short stature whom they called Dasyua or Dasa. These people knew agriculture. The best evidence of agriculture in the Harappan areas is in granaries. They used plough and cultivated bread wheat (*Triticum aestivum*) *T. Saphaerococcum*, barley (*Hordeum Vulgare* and *H. Lexastichum*), seasamum, gram, peas, melons, date-palm and species of Brassica (rape). Cotton was also cultivated. According to Wheeler (1968), one of the major factors of the decline and fall of Harappan culture was the widespread deforestation to meet the demand of firewood for baking millions of bricks. Piggott (1950) suggested eastward shifts of the edge of south-west monsoon as the cause of increasing aridity. Final blow was dealt by the Aryans who massacred the inhabitants (Chaudhary, 1979).

The extent of the area occupied by the Aryans as mentioned in the Rigveda is eastern Afganistan and N. W. F. P. Within this territory, called as Saptasindhu or land of seven rivers Sindhu (Indus) was the westernmost river and Sarasvati (Saptathi) the eastern most. The other five rivers were the Vitasta (Jhelum), the Asikni (Chenab), the Parushni (Ravi), the Vipas (Bias) and the Sutadri (Sutlej) (Fig. 2).

The Vedic Aryans were primarily pastoral. They considered animals, metals and manpower as the main forms of property. Cows were very useful in their economic life and horses were required on battle fields so the people prayed to the gods for obtaining brave sons, large number of cows, oxen, horses and metals. The invasion of India by the Aryans was not a single action. It extended over centuries and wave after wave of the Aryans came and poured into India. It seems that about 1100 B. C., a large wave of iron using Aryans entered India. They entered western U. P. about 1000 B. C. From about 1000 B. C., the use of iron spread from Baluchistan, Gandhara to eastern Punjab, western U. P. and Rajasthan. It reached eastern U. P. and Bihar in the seventh century B. C. The P. G. ware is also associated with later Aryans (Randhawa, 1980).

AGRICULTURE

Though initially animal husbandry was more important than cultivation of crops, Aryans realised that without thriving agricultural base they cannot defeat the Asuras (Indus valley people). A son who would own agricultural fields was also desired. Even the gamblers were advised not to play dice but to pursue agriculture and acquire wealth. However, the upper strata of the society considered agriculture as an inferior occupation. The tiller of the land was looked upon as a dull, stupid individual because he was neither wise nor learned. Even his speech exhibited low level of culture (RV, 10.34.7). Agriculture required physical labour which was considered as a handicap to gaining the Vedic knowledge. But very soon this notion came to an end (Roy, 1984).

The Aryan settlers cleared the forests and brought the land under cultivation. Fire was an efficient agent and there are references of vast areas being burnt in Satapatha Brahmana (SB, 1.4.1.10-14) and Taittiriya Samhita (TS, 5.a.5). Early Aryans were bronze age people and they used axes made of bronze and copper to clear the forests. After clearing the forests they demarcated the area and established their claim over it. Shifting cultivation was practised because of loss of fertility due to continuous cropping. To prevent regeneration of forest, animals were grazed in it.

TYPES AND OWNERSHIP OF LAND

Land was classified into two main categories viz. *Ksetra* – settlement and *Vana* – forest. *Urvara* was the fertile land and *Arnurvara* was the barren land. Different aspects of land are also described. In addition to the surface features, reference is made to the different kinds of soils such as *Sarkara* (Salty), *Aikata* (Sandy) and *Asman* (stony) (VI, 1.182). *Ksetra* was used in the sense of farmland which was carefully measured and protected (AV, 1.110.5). *Khila* denotes waste land. *Suyava* signified a pasture. *Gavyuti* or *garva* was the grass land for cattle grazing.

Like the Harappans, the Vedic Aryans also had conceived the idea of the goddess of fertility in the form of the mother earth. Fertile and productive lands were prayed for thus . "Land rich with milk and wet with honey and ghee" (YV, 189.20); "May Yagna give me clayey soils, stony soils, hilly soils on hills and mountain slopes, land yielding both cultivated crops and wild produce."

Ownership of land is a much discussed and disputed issue (Maine, 1890; Bopkin, 1901). The king was considered as the owner of entire land in his kingdom, but the individuals and joint families also owned it. It is thought that the ownership of land by King denoted only the exercise of political power by him. During the early Vedic period tax like *bhaga* (kings share in agricultural produce) did not exist. The king realised *bali* which was a voluntary tax. Rigvedic hymns frequently refer to the offerings of gold, cows, horses, chariot, female slaves as gift to priests but not agricultural land. There are ample evidences to prove that the cultivators right over agricultural land was recognised. The Rigveda refers to one's own field being as essential as one's hair on the head as a personal possession. The terms like *Ksetrapati* (owner of land) and *Ksetrapatni* (wife of the owner) prove the individual ownership of settlement even if it was on temporary basis.

During the later Vedic period the King also was concerned with the promotion of agriculture. He granted lands (not on ownership but with certain privileges) to his own associates and favourite ones. During the post Vedic period the Dharma Sutras state that the document offering such grant of land should be written on a piece of cloth or a copper plate. There were land disputes and divisions among the family members. Land grabbing was a practice and Rudra was regarded as the lord of land grabbers. Aitareya Brahmana informs that mainly Vaisyas were cultivators of land (AB, 7.22.3). The Jatakas and some of the older Dharma Sutras clearly differentiate between the private land and the crown land. The Vedic texts mention that generally the head of the family (grahapati) was considered the owner of the family property (including land), but the major male members had their share in it.

During the early period probably the size of holding depended on the requirement of the family and capability to reclaim forest land. The Brahmana texts throw considerable light on the grades of land holdings; *grahasthas* were ordinary land holders and *Maha grahasthas* were the big land holders (Singh, 1967).

The arable land was divided into fields. Land was properly measured and fields of definite sizes laid out. Measuring rods of presumably standard lengths were used for measuring fields. Fields were fenced around. The country side was traversed by good roads, on to which fields abutted – presumably farm roads – a much needed facility is provided (Aiyer, 1949). Much importance was attached to good roads and the gift of such roads was often prayed for. Good quality fields and bad fields are mentioned, thus : "Like a pleasant field given to a begger" (RV, X.34.6) i.e. a field ought to be in possession of one who can make proper use of it. Barren fields are referred to and compared to bald head.

AGRICULTURAL OPERATIONS AND IMPLEMENTS

The Vedic texts throw considerable light on the gradual process of agricultural operations. The implements such as spade, picks, plough and sickle were made of wood and copper and rarely of iron. Abhiri (a tool like spade) was used for levelling the piece of land as well as for digging holes. Plough (langala) was used but its origin and use is a debatable topic. The plough was fitted with a plough share made of copper or iron. The first ploughing of the season was inaugurated amidst rituals. In order to maintain soil fertility manure (purisam) was used. The Vedic Aryans were well acquainted with the utility of cowdung. After this followed sowing, this was an auspicious occasion and prayers were offered to the gods. There were several methods of sowing such as scattering the seeds in the fields or pouring them along the furrow (TS, 5-2. 5-5). Continuous cropping was the usual practice but crop rotation and use of fallow was also known. The crops were harvested with sickless. The harvested crop was collected and bundles were made out of it, which were carried to the thrashing floor. Oxen were used for separating grain from stems by treading them. Then with the help of winnowing basket grains were separated from chaff. Finally the grains were measured, if necessary, and were stored in houses. Mostly people of the Vedic age stored grain in *Sthivi*. The Satapatha Brahmana informs that besides earthern jars, grains were stored in leather bags as well as in jar made of wood.

IRRIGATION

The Aryans were aware of the vital role played by water in their life. The Rigveda informs that the peasants depended mainly upon rain for irrigating their fields. They prayed to Parjanya and Indra for pouring adequate rain waters for the production of sufficient grains. Excess of rain as well as inadequate rain both were harmful to the plants, so prayers were offered for timely and adequate rain waters. Besides the rainwaters, the cultivators depended upon flood-irrigation. Artificial means of irrigation like wells, tanks, ponds, canals and lakes are also mentioned in the Vedic literature (AV, 1.6.4).

THE CROPS GROWN

Importance of climate and seasons was realised and the growth of crops in relation to different seasons was noticed. The year was divided into six seasons; Vasanta, Grishma, Varsha, Sarad, Hemant and Shishir. The solar and lunar years were distinguished and the intercalcary month required to keep the later in step with the former was adopted.

After agriculture was established, attention was directed towards the cultivation of grain because the task of feeding the population and animals was not easy. Hunger has been regarded as the real enemy of the people. The grain could be stored for a longer time and could sustain population against crop failure. The early Vedic Aryans had realised the importance of cereals as the chief means of existence. *Dhanya* was a common term used to denote the grains. In the Rigveda the only cereal mentioned is Yava (barley). Other grains were also cultivated. Archaeological excavations have brought to light cereals other than barley from the levels which are assignable to the Rigvedic period. In the later Vedic texts eleven varieties of cultivated grains have been systematically enumerated. The cultivated cereals (gramadhanya) and wild ones (aranyadhanya) were both considered as bestowing vital strength on the sacrificer. *(Misradhanya)* denoted mixed cerals which were produced by mixing and sowing seeds of more than one variety of corn.

BARLEY (YAVA)

Barley is mentioned in Rigveda and it was the staple food of Aryans. It has been doubted whether it denoted cultivated real barley or was a genetic term to mean all vegetation. Aiyer (1949) thinks that it is

quite probable that wheat (spelt wheat) was also intended by the term barley. Some of the later Vedic texts refer to yava as grass to be fed to animals. From the later Samhitas onward, yava has been used in the strict sense of barley again. The varieties of barley *Govidhuka* (coarse), and *Upavaka* are mentioned. Also two-rowed and six-rowed varieties are mentioned. Remains of six-rowed barley have been discovered from Harappa and another yariety from Mohenjodaro. From Kalibangen (Rajasthan and Atranjikhera (Upper Gangetic basin) also barley grains have been unearthed (Fig. 1). It seems that vast regions of north India were suitable for its production.

RICE (PADDY, VRIHI)

Rice is not mentioned in Rigveda, therefore some scholars think that the early Vedic Aryans did not cultivate rice. It is mentioned in Atharvaveda. The later Samhitas, the Brahmana and Upanisad texts frequently refer to vrihi both for domestic and sacrifical use. The later Vedic texts refer to several varieties of rice grown in different parts of northern India. Archaeological evidences confirm that rice was produced in northern India during the neolithic and chalcolithic periods. It was thought that Harappans did not know rice, but rice husk has been discovered at Rangapur. The excavations at Ahar (Fig. 1) also proved paddy cultivations in Rajasthan, which then might have been a humid region. Botanists think that rice originated in South East Asia and spread in India from east to west but Agarwala (1971) holds the view that the cultivation of rice started at Lothal and Rangapur and then spread to east.

WHEAT (GODHUMA)

In Rigveda wheat is not mentioned though the early Aryans were settled in today's wheat producing areas. Perhaps they liked barley more and considered wheat as staple food of Asuras. In the later Samhitas and the Brahmana texts godhuma has been frequently referred to. The later Vedic Aryans popularised wheat cultivations in the Gangetic valley. The Indus valley people cultivated wheat (club wheat).

COTTON

A crop very conspicuous by its absence is cotton. The Indus valley people knew and cultivated cotton. But after that it seems to have disappeared. Even Rigveda refers to the Indus valley as the land of wool. Weaving was known and an elaborate reference to garments, both stitched and unstitched is contained in the hymns relating to marriage ceremony. But these must be woollen or silk garments.

SUGARCANE

Sugarcane was grown and perhaps crushed and gur or jaggery made, although there is no specific mention made of sugar or gur, honey being the article used for sweetning.

SEASAMUM

The Rigveda refers to it, but in the later Samhitas and the Brahmana texts, it has been mentioned in several contexts. The Indus valley people cultivated seasamum. It grains were commonly used in sacrifices.

VEGETABLES

Many fruits, flowers, vegetables, roots and medicinal herbs were also cultivated. Cucumber and bottle gourd are specifically mentioned. Grapes were probably cultivated, the methods of prunning understood, the art of fermenting the juice into wine also known and practised.

PULSE CROPS

Urada (*Masa*) is mentioned in the

Vedic texts. Gram (*Khalra*) is also mentioned in Atharvaveda. Besides these crops, some millets (*Anu*) and other vegetable fibres have also been mentioned.

CONCLUSION

In conclusion, one can say that the bronze age Aryans who defeated the Indus Valley People realised the importance of agriculture soon. The need to feed the population resulted in reclamation of land and continuous cropping. Aryans had a notion about the different types of land based on quality and fertility. The land was properly measured and laid out in fields. The agricultural operations were closely related to the environmental factors. The implements used were of wood and copper in early period. Aryans used manures and followed crop rotation system in order to increase productivity. They realised the significance of water in agriculture and besides rain and river water, they also used artificial sources like tank, wells, ponds, canals and lakes for irrigation. They cultivated many crops, barley being the staple crop in Rigvedic period. Cotton is conspicuous by its absence. Rice and wheat also are not mentioned in Rigveda, but in later Vedic literature they are mentioned. The Vedic and Later Vedic literature provides many direct and indirect reference to agriculture from which inferences are drawn. The author feels that there is a need to look into various other sources including the archaeological excavations and interpret the results from geographical point of view.

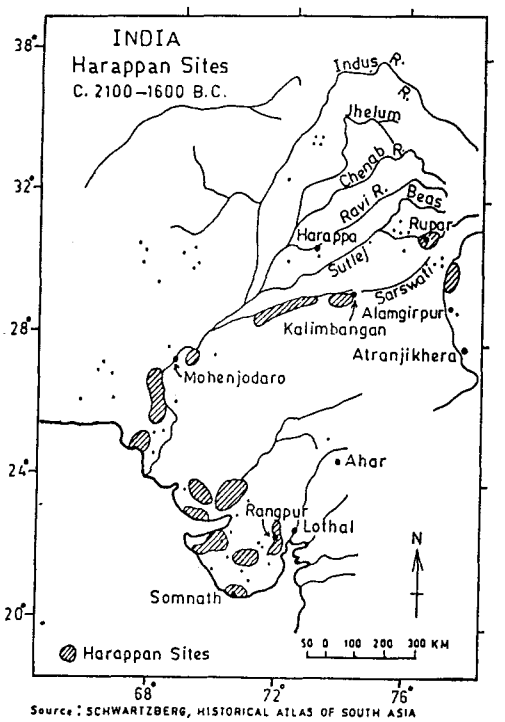

Fig.1

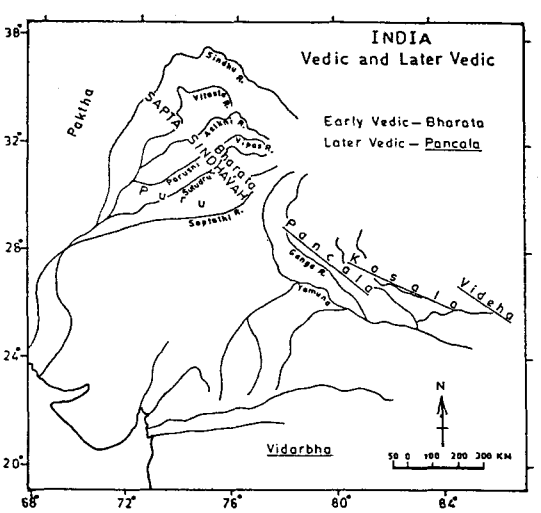

Fig.2

ABBREVIATIONS

AB	–	Aitareya Brahmana
AV	–	Atharv Veda
RV	–	Rigveda
SB	–	Satapatha Brahmana
TS	–	Taittiriya Samhita
VI	–	Vedic Index
YV	–	Yajurveda

REFERENCES

Agarwala, D. P. (1971). *The Copper Bronze Age in India*, pp. 40–107.

Aiyer, A. K. Y. N. (1949). *Agriculture and Allied Arts in Vedic India.*

Bhargava, P. L. (1956). *India in the Vedic Age*, p. 9.

Bopkins, E. W. (1901). *India Old and New*, New York, p. 218.

Chaudhury, N. C. (1979). *Mohenjo-Daro and the Civilization of Ancient India with Reference to Agriculture*, Delhi.

Maine (1980). *Village Communities of the East and West*, London, p. 105.

Majumdar, G. P. (1951). Origin and Development of the Science of Agriculture in Ancient India, *Proceedings of All India Oriental Conference*, Pt. III, pp. 113–116.

Om Prakash (1961). *Food and Drinks in Ancient India*, Delhi.

Piggott, S. (1950). *Prehistoric India*, London.

Randhawa, M. S. (1980). *A History of Agriculture in India*, Vol. I, ICAR, New Delhi.

Roy, B. P. (1984). *The Later Vedic Economy*, pp. 117–167.

Singh, M. M. (1969). *Life in North Eastern India in Pre-Mauryan Times*, Varanasi.

Wheeler, M. (1968). *The Indus Civilization,* Cambridge, pp. 32–35.

ADDRESS OF THE AUTHOR

Dr. V. S. Datye
Lecturer
Department of Geography
University of Poona
Pune - 411 007