

## Agricultural Knowledge as it is Reflected in The Śaunakīya Atharvaveda

A Reappraisal

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वोज्टिल्ला महाभागः शौनकीयाथर्ववेदसंहितायाम् ऐदम्प्राथम्येन उपलभ्यमानानां कृषिसम्बद्धानां पारिभाषिकपदानां साहाय्येन क्रिस्तोः पूर्वं १२००-८५० मध्यकाले प्रयाग-कौशाम्बी-वाराणसी मध्यदेशे सञ्जातां कृषेः समुन्नतिं प्रमाणपुरस्सरं व्यवस्थापयति। लाङ्गलीयफालभागस्य अयोनिर्मितत्वदारुनिर्मितत्वरूपपक्षद्वयं परिशील्य दिलीपचक्रवर्त्यादि-पुरातत्त्वविदां मतं निराकुर्वश्च स्वाभिमतं द्वितीये पक्षे दर्शयति।

Due to the scarcity of archaeological evidence the Vedic corpus is an indispensable tool for research into the stand of agricultural technology in the period between c. 1500-700 B.C. Accordingly, there is a wide range of scholarly endeavours dealing with the evaluation of references to agriculture as well as of the agricultural terms inlaid in the texts belonging to this corpus.

The relevant part of Zimmer's classical book still has great merits (Zimmer 1879, 235-243), however, it suffers from a shortage: it treats the Vedic corpus as a whole irrespective of whether the data are from texts of different ages and geographical place of origin. The same statement is valid for Acchelāl's treatment of the subject (Acchelāl 1980, 31-60). It is a pity that this fine book is available only in Hindi. In his monumental work Randhawa discusses this period in two independent chapters (1980, 290-300 and 301- 322). A great advantage of this book is the author's professional skill and his wide knowledge of the archaeological evidence. On the other hand, the philological material in the book is taken from second hand and far from exhausting. Kansara's way of treatment is similar to that of Zimmer and Acchelāl. Being a practising

agriculturist, he is tempted to offer modern explanations of old things at places (Kansara 1995). In his book, data from different sources and ages are intermingled and therefore it can be used only with criticism. Ayer's book (Ayer 1949) and some short papers (Gopaldaswamy Aiyangar 1967, Bhattacharjee 1978 and Sagar 1982) were not available to me.

This stand of studies urgently calls for a refinement of research: the individual texts inside the Vedic corpus must be investigated separately; the possibly most precise date and provenance of the given texts must be ascertained; the relevant data must be extracted from them; archaeological correlations must be sought for the picture emerging from the collected and meticulously interpreted data.

The first steps in this direction have been already made: the agricultural data have been thoroughly researched from the Ṛgveda (Wojtilla 2003), the Śatapathabrāhmaṇa (Mylius 1964, 51-54) and a series of Brāhmaṇa-texts (Rau 1957, 25-26; Mylius 1971, 174-176).

On the other hand, these data of the Atharvaveda, 'an irreplaceable source of material culture' (Witzel 1997, 275), has been investigated only at random (cf. Karambelkar 1959, 59; Kharade 1997, 13-22). In short, a reappraisal of the Atharvaveda material is well in order.

It's common knowledge that the Atharvaveda has come down to us in two versions. The considerable differences in the text of the Śaunakīya and Paippalāda schools and their slightly different provenance call for separate studies. As the stand of studies of the Śaunakīya version is more advanced, my present choice fell on it.

Following Witzel, the provenance of the Śaunaka version must be sought in the land of the Pañcālas (eastern Uttar Pradesh, up to Kausambi/Allahabad/Kāśī)' (Witzel 1997, 280). On the basis of the phrase *śyāma ayas* (XI, 3, 7), which he takes iron, Witzel dates it from c. 1200 BC (Witzel 1995, 4). Recent work on the archaeological evidence of iron industry in India reveals that there are levels yielding iron objects at Kausambi datable to 1100-1000 B.C. (Tripathi, 2008b, 42). Taking into account that the Atharvaveda as a whole is later than the Ṛgveda and earlier than

the Śatapathabrāhmaṇa and the possibility of dating the Late Vedic Age c. from 800-540 (Mylius 1970, 368), we may tentatively put the genesis of it in the period between 1200-850 BC. This approximately covers the period which Witzel calls Middle Vedic Period (cf. Witzel 1997).

A cursory glance at the contents of the corpus is sufficient to see the increasing importance of agriculture in everyday life. Pṛthī Vainya, the inventor of agriculture (VINS II, 16), milks from earth both cultivation (*kṛṣi*) and rice (*sasya*) and upon those two men subsist 'successful by what is cultivated (*kṛṣṭarādhi*), one to subsisted upon' VIII, 10, 24? (Whitney 1905, 514). This is a manifesto of a new way of life in which agriculture gradually became the chief means of livelihood of the people.

Verse 5 of hymn II, 4 makes a clear distinction between the forest products and that of ploughing. Special hymns have been recited in order to make agriculture successful (III, 17), to promote the abundance of grain (III, 24), to increase barley (VI, 142). The king of gods, Indra, holds down the furrow and Pūṣan defends it (III, 17, 4). Indra has a hundred abilities (*Śatakrātu*), is called *sīrāpati* the master of the plough (VI, 30, 1). Viṣṇu's stride is 'stirred up by ploughing' (X, 5, 34). Hymn XII, 1 extols the earth. Verse 3 and 4 say that the earth is 'on whom food, plowing, came into being' (Whitney 1905, 661). According to verse 17 she is 'the all-producing mother of herbs' (Whitney 1905, 664).

Much more rewarding is a scrutiny of the agricultural vocabulary containing terms concerning the soil, the agricultural implements and operations, cultivated plants and men and animals employed in agricultural work. Terms connected with gardening and animal husbandry keep out of the scope of the present paper, for they do not pertain to agriculture (*kṛṣi*) strictly speaking (cf. Wojtilla 2006, 11-13).

\*ÁBHRI f. a spade IV, 7, 5. 6. It is used to dig up herbs.

\*ĀBAYU m. name of a plant VI, 16, 1. Both form and meaning are quite uncertain (VINS I, 59). The hymn where the term can be attested is unintelligible (Whitney 1905, 292). Bloomfield takes it as mustard plant (Bloomfield 1897, 465).

\*IKṢU m. sugar-cane, *Saccharum officinarum* L. I, 34, 5.

- \*ĪṢĀ f. the pole of a plough II, 8, 4.  
 URVĀRĀ f. a fertile soil X, 6, 33; X, 10, 8; XIV, 2, 14.  
 \*URVĀRU m. cucumber, *Cucumis utilissimus* Roxb. VI, 14, 2.  
 URVĀRUKĀ m. cucumber, *Cucumis utilissimus* Roxb. XIV, 1, 17.  
 ULŪKHALA n. a wooden mortar X, 9, 26; XI, 3, 3.  
 KĀṆA m. corn XI, 3, 5.  
 KĪNĀŚA m. a cultivator of the soil IV, 11, 10; VI, 30, 1.  
 KṚṢI f. cultivation II, 4, 5; VIII, 2, 19; VIII, 10, 24; X, 5, 34; X, 6, 12; XII, 2, 37.  
 KṚṢṬA mfn. cultivated (of a fertile soil) X, 633.  
 \*KṚṢṬARĀDHI mfn. Successful by what is cultivated (a man) VIII, 10, 24.  
 KṢETRA n. a field IV, 18, 5; V, 31,4; X, 1,18; XI, 1, 22; XIV, 2, 7.  
 KṢMĀ f. ground XVIII, 1, 39.  
 KHANITRĪMA mfn. produced by digging (of water) I, 6, 4; XIX, 2, 2.  
 KHĀLA m. n. a threshing-floor XI, 3, 9.  
 \*KHĀLVA m. black chick-pea, *Dolichus lablab* L. II, 31, 1; V, 23, 8.  
 \*TAṆĀULĀ m. grain (after threshing and winnowing) esp. rice X, 9, 26; XI, 1, 18; XI, 3, 5; XII, 3, 18; XII, 3, 29-30.  
 \*TILA m. sesame, *Sesamum indicum* L. II, 8, 3; VI, 140, 2.  
 \*TILAPIÑJĪ f. Problematic word. Whitney hypothetically renders it as 'sesame-stalk' (Whitney 1905, 49) II, 8, 3.  
 \*TUṢA m. the chaff of grain or rice XI, 1, 12; XI, 3, 5.  
 \*TSARU m. Problematic word. On the basis of some commentaries Whitney renders it as the handle of a plough (Whitney 1905, 115-116) III, 17, 3.  
 DHĀNYA n. grain, mainly rice, *Oryza sativa* L. II, 26, 3. 5; III, 24, 2. 4; V, 29, 7; VI, 117, 2; VIII, 2, 19; XIX, 31, 5. 10.  
 \*PARŚU n. a sickle XII, 3, 31.

PALĀVA m. chaff XII, 3, 19.

\*PAVANA n. an instrument for purifying grain, a sieve, a strainer IV, 34, 2.

\*PAVĪRAVAT mfn having a lance-shaped ploughshare (of a plough) III, 17, 3.

\*PIPPALĪ f. a berry. It is used as a remedy for wounds (VINS I, 531). Zysk takes it as pepper-corn, long pepper, *Piper longum* L. (Zysk 1985, 259), however, it seems to be unlikely because pepper was not a product of the place of genesis of the Śaunakīya Atharvaveda. The import of pepper from the South India must be also ruled out in the Middle Vedic Period.

PHĀLA m. a ploughshare, X, 6, 6. 7. 8. 9. 10. 33. Cf. SUPHĀLA a good ploughshare III, 17, 5.

\*BAJĀ m. a plant used against a demon of disease (VINS I, 59), On the basis of some commentaries on the Kauśīkasūtra Whitney thinks of a sort of mustard (Whitney 1905, 494) VIII, 6, 6. 7. 24.

BĪJA n. seed X, 8, 33; XIV, 2, 14.

BHŪMI f. the earth, soil III, 17,5.

MĀṢA m. a sort of bean, *Vigna mungo* (L.) Hepper VI, 140, 2.

YAVA m. barley, *Hordeum vulgare* L. emend. Bourden II, 8, 3; VI, 30, 1; VI, 142, 1. 2; XII, 1, 42.

YUGA n. the yoke of a plough II, 8, 4.

RĀŚĪ m. a heap (of barley) VI, 142, 3.

LĀṄGALA n. a plough II, 8, 4.

VĀHA m. a bull or ox for drawing the plough VI, 102, 1.

VRĪHI m. rice, *Oryza sativa* L. VI, 140, 2; VIII, 7, 20; IX, 1, 22; IX, 6, 14; XII, 1, 42.

\*ŚAṆA a sort of hemp, *Crotaria juncia* L. II, 4, 5.

\*ŚŪRPA n. a sieve IX, 6, 16; X, 9, 26; XI, 3, 4; XII, 3, 19; XX, 136, 8.

ŚYĀMAKA m. millet-seed, *Panicum frumantaceum* Roxb. XIX, 50, 4.

SASYA n. grain, mainly rice, *Oryza sativa* L. VIII, 10, 24.

SĪTĀ f. a furrow XI, 3, 12.

SĪRA n. a plough VI, 30, 1; VI, 91, 1; VIII, 9, 16.

\*STEGA m. Problematic word. Whitney hypothetically makes it signify a ploughshare (Whitney 1905, 824). XVIII, 1, 39.

The vocabulary which is extracted from the Śaunakīya Atharvaveda is relatively meagre. Among the forty-seven items - the Ṛgveda contains forty- nine items (Wojtilla 2003, 43) - there are terms which are problematic both morphologically and semantically (*ābayu*, *tsaru*, *stega*) or only semantically (*tilapiñjī*, *bajā*).

The number of attestations is edifying: *dhānya* is attested nine times, *phāla* seven times, *kṛṣi* and *taṇḍula* six times, *kṣetra*, *yava*, *vṛīhi* and *śūrpa* five times, *urvārā*, *bajā* and *sīra* three times, *kīnāśa*, *khanitrīma*, *khālva*, *tila*, *tuṣa*, *pippalī*, *bīja* two times, while the remaining twenty-nine only once. It indicates the established position of agriculture among other economic activities, the preponderance of rice cultivation indicated by the terms *dhānya*, *vṛīhi* and *sasya* and the strong position of barley (*yava*) production. The unambiguous term for wheat (*godhūma*) is missing here, but it can be attested in the Paippalāda Atharvaveda (IX, 11, 12).

Although the internal chronology of the Śaunakīya Atharvaveda is 'an utterly difficult problem' (Gonda 1975, 273, fn. 16), it can be assumed that books I-VII can be regarded as the original nucleus, then VIII-XII, XIII-XVIII and XIX are separate blocks (Gonda 1975, 273), while book XX 'with some exemptions seems to be a verbatim repetition of Ṛgveda' (Bloomfield 1897, LXXI). It is noteworthy that thirty-six items can be attested in the nucleus (some of them also in other blocks), nine items in books VIII-XII, one item occurs in book XIV, two items occur in book XVIII, one item is attested in book XIX. This circumstance speaks in favour of the genuineness of this vocabulary. This genuineness gets further corroboration by the fact that seventeen items pertaining to the basic agricultural vocabulary are first attested

here in Sanskrit. In other words, the text bears the testimony of significant contemporary changes in agricultural production. The main points of these changes are as follows.

New tools such as spade, (*ābhri*), or probably varieties of tools or new names for already known tools appear: sickle (*parśu*), sieve (*pavana*, *śūrpa*).

There are formerly unknown plant names: some of them are not satisfactorily explained such as *ābayu*, *pippalī* and *bajā*, while other are of great economical importance such as sugar-cane (*ikṣu*), cucumber (*urvāru*), black chick-pea (*khālva*), sesame (*tila*) and hemp (*śaṇa*).

There is a full-fledged inventory of the place, implements, products and by-products of rice processing: threshing-floor (*khāla*), sieve (*pavana*, *śūrpa*), grain after threshing and winnowing (*taṇḍula*) and chaff (*tuṣa*).

As Romila Thapar rightly puts it the plough 'became an icon of power and fertility' (Thapar 2002, 116). Its name is *lāṅgala* or *sīra* as in the Ṛgveda, however, the number of constituent parts of the plough is higher. It means that the description of the plough is more detailed i.e. the Śaunakīya Atharvaveda likely refers to a more sophisticated plough than the Ṛgveda This plough has handle (*tsaru*), a pole (*iṣā*), a yoke to which the draught animals are tied, and a lance-shaped (*pavīravat*) ploughshare. Otherwise the ploughshare is called either *phāla* or *stega*.

The interpretation of the term *pavīravat* is a highly intricate issue worth dwelling upon for a short while. Zimmer thinks of a metal share (Zimmer 1879, 236), Macdonell and Keith render it as 'having a metal share' (VINS I, 509). Although Rau vigorously maintained long ago that the word *pavīra* does not sufficed this meaning (Rau, 1957, 25), this translation has still adherents. Mylius, a leading expert in the Late Vedic Period, first did not find Rau's argumentation convincing (Mylius 1964, 54). Shaping his opinion, he might have overrated the proportion of the use of iron in the early phase of the Late Vedic Age. Later, in his unpublished habilitation thesis, he inclined to accept Rau's standpoint (Mylius 1967, 120). After that is somehow strange that in the published form of this thesis he definitely subscribed to the existence of a metal share (Mylius 1971, 174) even after Ruben

had accepted Rau's opinion and noted that Mylius refutation had been made without arguments (Ruben 1967, 67 and 92, n. 96).

Quite independently, Dilip K. Chakrabarti, the noted archaeologist, suggests that the ploughshare mentioned in the Atharvaveda might have been made of iron (Chakrabarti 1992, 122). He bases this assumption on the textual evidence of X, 6, 2-3. Unfortunately, he fully misunderstands the context: the hymn praises the virtues of an amulet made of *khadira*-wood in the shape of a ploughshare (Bloomfield 1897, 84-85). It is carved by a wood-cutter with a knife (*takṣan*). It means that there is no reason to question Rau's standpoint strongly backed by the testimony of the Śatapathabrāhmaṇa VII, 2, 2 (where it means, a 'share-shod' which might have been a metal-shod Eggeling 1894, 328, n. 3), the Taittirīyasaṁhitā IV, 2, 5 (where it means a 'keen shore': Keith 1914, 315) and the Vājasaneyīsaṁhitā XII, 71 where according to the commentaries by Uvaṭa and Mahīdhara it simply means 'endowed with a ploughshare' without specifying the material it was made of. The word *pavīra* must be derived from *pavī* a noun the etymology of which is waiting for a quite convincing explanation. Some scholars connect it with the verb *punāti*, *pāvate* 'to make clean or bright' and take it as something shining, a metal. Others put it beside the terms of ancient Indo-European weaponry (KEWA II, 238-39). *Pavīra* denotes in the Nirukta XII, 30 definitely a lance (VINS I, 509) which has a metallic point (Monier-Williams 1960, 611). In the second half of the first millennium B.C. when the Nirukta was composed by Yāska the use of metals or even that of iron was widespread. Nevertheless, this circumstance does not compel us to refer back this technical know-how to the late Vedic age or in particular to the age of the Śaunakīya Atharvaveda. It is a definite proof of the uncertainty around the term in Sanskrit tradition that the Vasiṣṭhasmṛti 86 calls the plough (*lāṅgala*) *pravīravat* and *vīravat*. This text can be dated from around the fourth century B.C.

The archaeological evidence to be gathered from the place and time of genesis of the Śaunakīya Atharvaveda lacks any proof of the use of iron for making ploughshares. The full use of iron for quite different purposes appears in the Ganges valley only after the 6<sup>th</sup> century B.C (Erdosy, 1995, 84). The earliest known specimens of iron ploughshares from Ganwaria in District

Gorakhpur, U. P. can be dated from 700 BC (Vibha Tripathi 2008 a, 372), 4<sup>th</sup> period of Atranjikhhera, U. P. from 600-50 BC (Gaur 1983, 427) and Jakhera in District Etah, U. P. from not earlier than the middle of the first millennium B. C. (Sharma 1983, 121; cf. Vibha Tripathi 2008 b, 44) In short, the plough and its ploughshare described in the Śaunakīya Atharvaveda were made of wood. As R. S. Sharma justly observes wooden ploughshare could work in the light soil of the upper Gangetic basin (Sharma 1980, 54). As to its form it had the shape of a lance.

The plough is drawn by draught animals (*vāha*). They were bulls or oxen, however, their name is not specified here. Neither mentions our text how many were yoked to the plough. The emerging role of the buffalo in animal husbandry (Thapar 2002, 116) is truly reflected by the frequent attestation of the terms *mahiṣa* and *mahiṣī* in the text.

To sum up, the picture of agricultural production which emerges from the Śaunakīya Atharvaveda shows the initial phase of the Middle Vedic Period when under the changed geographical milieu a new form of material culture started making which is called by many scholars as Gangetic culture (cf. Ruben 1974). At this stage forest and cultivated field play almost equally important role in the life of the people (cf. II, 4, 5), sugar-cane grew either wild or it was cultivated (VINS I, 74), hemp (*śana*) grew in the forest (VINS II, 350) and *ābayu*, *pippalī* and *bajā* may also grow wild.

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\* The first occurrence of the word as an agricultural technical term.

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