BOTANICAL ELEMENTS AS REVEALED IN THE VEDAS

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[Vedas are considered as the store house of every science of life. Human life is mainly associated with nature, which is closely connected with the branch of science called 'Botany'. It is the scientific study of the physiology, genetics, ecology, distribution, classification and economic importance of plants. The seed of this branch of study in India is found since the Vedic period. The whole Vedic literature bears ample information of botanical data. Data regarding different classification of plants, their various parts, usefulness etc. are scattered in this area of study. This paper is a modest attempt to highlight the botanical information available in the Vedas to some extent.]

Vedas are the root of Indian culture and the seed of almost all the branches of Science. Botany is one of those branches of science which is closely connected with nature. Botany means the scientific study of physiology, genetics, ecology, distribution, classification and economic importance of plants. Generally the study of this branch has two parts, i.e. Pure Botany and Applied Botany. Pure Botany is the study of all plants existed in the world, where as Applied Botany is the study of those plants which are useful to people. The history of Botany in India can be traced from the Vedic period. A huge number of information about both divisions of this branch are scattered in the whole Vedic literature and in various Vedic rituals (*karmakāṇḍa*). Here some of these concepts are discussed very briefly.

A lot of indications of morphology of plants are traced in the Vedic literature. In the *Taittirīyasaṁhitā*, the parts of plants are eulogized viz. root (*mūla*), shoot (*tūla*), stem (*kāṇḍa*), twig (*valśa*), branch (*śākhā*), leaf (*parṇa*), flower (*puṣpa*) and fruit (*phala*).[1] The *Vājasaneyīsaṁhitā* and the *Atharvaveda* also mention about the physiology of plants. According to the *Vājasaneyīsaṁhitā, yajña* is performed for improving the roots, branches of forest trees, flowers, fruits and herbs - …..*mulebhyaḥ svāhā śākhābhyaḥ svāhā*

vanaspatibhyaḥ svāhā puṣpebhyaḥ svāhā phalebhyaḥ svāhauṣadhībhyaḥ svāhā//[2] The *Atharvaveda* says that the branches of a tree roundabout the trunk - ……..*vṛkṣasya skandhaḥ parita iva śākhā* //[3].

Besides these, the parts of plants are compared to the parts of human body. The term *skandha* is used in the *Ṛgveda* for the corona of a tree.[4] The *Bṛhadāraṇyakopaniṣad* also has very clearly mentioned the fact that various parts of plants are like different parts of the human body.[5] Here some similarities are traced as follows:

Parts of human body	**Parts of tree**
Hair (*loma*)	leaf (*parṇa*)
Skin (*tvak*)	external bark (*bāhya tvak*)
Blood (*rudhir*)	juice (*rasa*)
Flesh (*māṁsa*)	soft tissue (*śakarā*)
Nerve (*snāva*)	inner fiber (*kināṭa*)
Bone (*asthi*)	wood (*dāru*)
Marrow (*majjā*)	pith (*majjā*).

It is claimed that plants possess internal consciousness and they feel both pleasure and pain– *antaḥ samjñā bhavantyete sukhaduḥkhasamanvitāḥ*//[6] From the above information, it is confirmed that our ancestors are very much aware about the internal morphology of plants. In this context, the words of A.K. Ghose and S.N. Sen may be cited : "It is futile to expect any detailed knowledge of the internal structure of plants, but some gross anatomy of the plant body is indicated in the *Ṛgveda* which clearly distinguishes wood (*dāru*) from the softer part of tree."[7]

A few data of classification of plants are found in the Vedas. The *Ṛgveda* classifies the plants in the following heads viz. fruitful (*phalinaḥ*), blossoming (*puṣpavatī*), having flowers (*prasuvariḥ*), grass (*tṛṇa*) etc.[8] The *Atharvaveda* also mentions various classifications of plants. In one mantra of this *Veda,* the following classification is found – those rich in flowers (*puṣpavatī*), those rich in shoots (*prasūmatī*), those rich in fruits (*phalinī*) and those lacking fruits (*aphalā*).[9] Another classification of tree is also seen in this *Veda.* These are the forest tree (*vanaspati*), fruit tree with conspicuous flowers (*vānaspati* or *vṛkṣa*), the herb (*oṣadhi*) and plant (*vīrudha*).[10] The same *Veda* again classifies trees as those that are expand

(*prastṛnatiḥ*), those that are bushy (*stambiniḥ*), those having only one sheath (*ekasuṅgaḥ*), those that creep (*pratānavatiḥ*), those having many stalks (*aṅgsumatiḥ*), are knotty or joined (*kāṇḍiniḥ*) or those that have spreading branches (*viśākhāḥ*).[11] In another place of the *Atharvaveda*, a special classification of trees are made on the basis of colour of trees like brown (*babru*), white (*śukra*), red (*rohiṇī*), spotted (*pṛśni*), black (*kṛṣṇa*), swarthy (*asiknī*).[12] Besides these, some other special classifications of plants are also made in the Vedas.

While discussing the second part of Botany i.e. applied Botany, mainly reference may be made to food and medicinal use of plant. In the Vedic age, the word *dhānya* is used for food in general. There are twelve types of *dhānya* mentioned in the *Vājasaneyīsamhitā.* These are– rice, barley, pulses and beans, sesamum and grams, kidney beans and their cooking, grams and their cooking, millet and its cooking, excellent rice and inferior corn, rice of wild growth and their cooking, wheat and its cooking, lentils and other food grains : *vrīhayaśca me yavāśca me māṣāśca me tilāśca me mudgāśca me khalvāśca me priyaṅgavaśca me'ṇavaśca me śyāmākāśca me nīvārāśca me godhūmāśca me masūrāśca me yajñena kalpatām*//[13] *Yava* and *brīhi* are main food at the time of Vedas. Many references are found about these two.[14] Generally paddy is cultivated twice in a year : *dvisaṁvatsaraṁ sasyaṁ pacyate*/[15] *Yava* is cultivated in the season called *grīṣma* and *brīhi* in the *śarada : yavaṁ grīṣmāya brīhi na śarade……*/[16] The *Ṛgveda* repeatedly mentioned about *yava : gobhiryavaṁ na carkṛṣat*/[17] In the *Atharvaveda*, there is a complete hymn named by *annasūkta* (VI.142) where *yava* is equated to god. Besides this, *brīhi*[18], *dhānya*[19], etc. are also mentioned here. Some trees are used in Vedic sacrifice like *aśvattha, śamī* etc. The juice of *soma* tree is the main oblation of *soma* sacrifice. In the *Ṛgveda*, the name of s*oma* tree is very much common. This is the basic thing to perform the *soma* sacrifice. The whole 9th *maṇḍala* of the same is devoted to this plant and hence it is called as *somapavamānamaṇḍala*. Another important usefulness of plant is the medicinal herbs i.e., the oṣadhīs. A numerous mantras are found for the eulogy of oṣadhīs. In the 97th *sūkta* of tenth *maṇḍala* of the same *Veda*, *soma* is praised as the best of all oṣadhīs.[20] In the *Vājasaneyīsamhitā*, various mantras are seen for this type of plant.[21] According to these mantras, different types of diseases like *vilāsa, arśa, śotha, ślīpada, hṛdaroga, kuṣṭa* etc. are cured by use of these oṣadhīs. Different types

of oṣadhīs are also mentioned in the *Vājasaneyīsaṁhitā*.[22] In another *mantra* of the same, the way of taking the *oṣadhī* is highlighted.[23] The *Taittirīyasaṁhitā* also mentions some oṣadhīs relating to cure of some diseases like *dṛṣtiprāpti, yakṣmā, unmāda* etc.[24] Besides these, a huge number of oṣadhīs are described in the *Atharvaveda*. Here different types of oṣadhīs, how to use them, usefulness etc. are thoroughly discussed. There are at least forty types of oṣadhīs which can be traced in this *Veda*. Some of these are *muñja (Saccharum munj* Roxb)[25], *rajanī (haridra) (Curcuma longa* Linn)[26], *rāmā (bhṛngarāja) (Eclipta alba* Hassk)[27], *śyāma (nīla,asiknī*) (*Indigofera tinctoria* Linn)[28], *kṛṣṇā (indrāvaruṇī) (Citrullus colocynthis Schrad)*[29], *parṇadhi (lodhra) (Sympolocor racemosa* Roxb)[30], *pṛśniparṇī (Uraria Picta Jesv)*[31], *vacā (baca, ghoḍabaca) (Acorus Calamus* Linn)[32], *śepaharṣaṇī (kapitha) (Feronia Elophantinum),*[33] *soma* (*Ephedra Gerardiana*)[34], *kulmala* (*padma*) (*Nelumbo nucifera* Gaertn)[35], *varaṇa* (*varaṇā*) (*Crataeva nurvala* Buch Ham)[36], *śaṇa* (*Crotalaria juncea* Linn)[37], *prakrī* (*prakīrya*) (*Pongamia Pinnata Pierre)*[38], *lākṣā (Laccifer Lacca* Karr.*)*[39], *apāmārga (Achyranthes Aspera* Linn)[40], *gulgulu (guggulu) (Commiphora Mukul)*[41], *kuṣtha (kūṭha) (Saussurea Lappa C.B Clark)*[42], *śamī (Prospis cineraria* Druce*)*[43], *arka (Colotropis procera* (Alt) R.Br.*)*[44], *pippalī (Piper Longum* Linn)[45], *jīvantī (Leptadenia reticulata* W. & A.*)*[46], *yava* (*Hardlum Bulgare*)[47], *brīhi*[48], *baja* (*Brassica campestris* Linn. Var.)[49], *darbha* (*Demostachya bipinrota staps*)[50], *kanera* (*Merium indicum* Mill)[51], *taudī (kanyā, ghṛtāsī*) (*Aloe Vera Tourn.* Ex Linn.)[52], *agni (citraka*) (*Plumbage Zeylanica* Linn.)[53], *udumbara* (*Ficus glomerata* Roxb.)[54], *bilva* (*Aegle marmelos* Corr.)[55], *rohaṇī* (*Soymida Febrifuga* A. Juss.)[56], *mandūkī* (*Centrella Asiatica* Linn. Urban)[57] etc. For example, the first born overpowering the spotted leaf called *pṛśniparṇī* destroys the *durṇāma* (cause of leprosy) and *kaṇva* (embryo eating germ).[58] The *muñja* grass is considered as the best of all oṣadhis. It is the remedy for flux and all diseases – *tvamuttamamanāsrāvamarogaṇam//*[59]. The juice of *varaṇā* tree is useful for destroyer of poison because an on-pouring of ambrosia (*amṛta*) is there - *vāridaṁ vārayātai varaṇāvatyāmadhi/ tatrāmṛtasyāsiktaṁ tenā te vāraya viṣam//*[60] etc. Many of these plants have not only medicinal values but also used as food and other ways.

At the time of *Atharvaveda*, purchasing and selling of oṣadhīs are very much common in the society- *dhanairabhi śrutvā yanti/*[61]. The *oṣadhī* called *varaṇāvatī* is purchased by *pavasā* tree or skin of

deer.[62] Besides these, numerous information of plants are found in the Vedas.

Plant word is inseparable part of human life. People cannot survive without these. Without the aid of these all-round welfare of human beings cannot take place. Plants are used as food, for preparing shelter, clothes and other household utensils. Besides these, medicinal herbs are very much essential for curing diseases. Plants are used not only for maintenance of livelihood but also for religious purposes. For the safety purpose of the earth, plant world appear to play a significant role. From the very remote age, this concept of botany is highlighted. Not only today but ancient seers also recognized the direct influence of plant world i.e. Botany. And hence they described some concept of Botany in the Vedas. Here some of such concepts are traced in a very brief way.

References :

1 oṣadhībhyaḥ svāhā mūlebhyaḥ svāhā tūlebhyaḥ svāhā kāṇḍebhyaḥ svāhā valśebhyaḥ svāhā puṣpebhyaḥ svāhā phalebhyaḥ svāhā/ vanaspatibhyaḥ svāhā mūlebhyaḥ svāhā tūlebhyaḥ svāhā skandhebhyaḥ svāhā śākhebhyaḥ svāhā parṇebhyaḥ svāhā puṣpebhyaḥ svāhā/ *Taittirīyasaṁhitā*, VII. 3.19-20

2 *Vājasaneyīsaṁhitā*, XXII.28; c.f., *Ibid.*, XXII.29

3 *Atharvaveda*, X.7.38

4 *Ṛgveda*, I.32.5; c.f., *Atharvaveda,* X.7.38

5 yathā vṛkṣo vanaspatiḥ tathaiva puruṣo'mṛṣā/
lomāni parṇāni tvagasyotpāṭikā bahiḥ/
tvaca evāsya rudhiraṁ prasyandi tvaca utpaṭaḥ/
tasmāttadātṛṇṇāt praiti raso vṛkṣādivāhatāt//
māṁsānyasya śakarāṇi kināṭaṁ snāva tat sthitaṁ/
asthinyantarato dārūṇi majjā majjopamā kṛtā//
Bṛhadāraṇyakopaniṣad, III.9.28.1-3

6 *Manusmṛtiḥ*, I.49

7 *A Concise History of Science in India*, p. 376 - 377

8 *Ṛgveda,* X.97.3.15; c.f., *Atharvaveda,* VIII.8.27

9 *Atharvaveda,* VIII.7.27

10 *Ibid.*,VIII.8.14

11 *Atharvaveda* , VIII.7

12 yā babhravo yāśca śukrā rohiṇīruta pṛśnayaḥ/

asiknīḥ kṛṣṇā oṣadhīḥ sarvā acchāvadāmapi// *Ibid*.,VIII.7.1

13 *Vājasaneyīsaṁhitā*, XVIII.12

14 *Ibid*.; *Taittirīyasaṁhitā,* IV.7.4.2 etc.

15 *Taittirīyasaṁhitā,* V.1.7.3

16 *Ibid*.,VII.2.10.2

17 *Ṛgveda*, I.23.25; c.f., *Ibid*., I.42.8; I.66.2; X.13.2 etc.

18 *Atharvaveda* , VIII.2.18

19 *Ibid*.,VIII.2.19

20 *Ṛgveda*, X.97.18, 23 etc.

21 *Vājasaneyīsaṁhitā*, XII.9, XII.83-85

22 *Ibid*., XII.81,89, etc.

23 *Ibid*., XII.75

24 *Taittirīyasaṁhitā*, II.1.1.1, II.4.14 etc.

25 *Atharvaveda*, I.3.1-6

26 *Ibid*., XXIII.1

27 *Ibid*

28 *Ibid*., I.24.3,4

29 *Ibid*., I.23.1

30 *Ibid*., IV.6.5

31 *Ibid*., II.25.1-3

32 *Ibid*., II.31.2,4

33 *Ibid*., XXXXIV.1

34 *Ibid*., IV.37.2,6

35 *Ibid*., IV.6.5

36 *Ibid*., IV.7.1, VI.85.7

37 *Ibid*., II.4.5

38 *Ibid*., IV.7.6

39 *Ibid*., V.5.5,7

40 *Ibid*., IV.17.5-7

41 *Ibid*., XIX.38.1

42 *Ibid*., V.4.1

43 *Ibid*., VI.30.2

44 *Ibid*., VI.72.1

45 *Ibid*., VI.109.1

46 *Ibid*., VIII.2.6

47 *Ibid*., VIII.2.18,20

48 *Ibid*

[49] *Ibid*., VIII.6.20
[50] *Ibid*., X.4.2, VI.43.1-2
[51] *Ibid*., X.4.3
[52] *Ibid*., X.4.24
[53] *Ibid*., XX.96.11
[54] *Ibid*., XX.136.15
[55] *Ibid*
[56] *Ibid*., IV.12.1
[57] *Ibid*., XVIII.3.60
[58] *Ibid*., II.25.2-3
[59] *Ibid*., II.3.2
[60] *Ibid*., IV.7.1
[61] *Ibid*., V.4.2
[62] pavastaistvā paryakrīṇandūrśebhirajinairuta, *Ibid*., IV.7.6

Bibliography :

1. *Atharvaveda Saṁhitā,* ed. W.D. Whitney, Nag Publishers, Delhi-7, 1987.
2. *Bṛhadāraṇyakopaniṣad* with Śankarabhāṣya and Hindi translation, Geeta Press, 2000.
3. *Manusmṛtiḥ*, Sanskrit text with the Commentary of Kulluka, ed. Acharya Jagdishlal Shastri, Motilal Banarsidass, Delhi-32, 2007.
4. *Ṛgveda Saṁhitā,* Vol. I - IV, ed. Ravi Prakash Arya and K.L. Joshi, Parimal Publication, Delhi – 7, 1997.
5. *Taittirīya Saṁhitā,* Vol. I – IV, ed. T.N. Dharmadhikari, Adarsha Sanskrit Sodha Samstha, Pune – 37, 2006.
6. *Vājasaneyī Saṁhitā,* ed. W.L. Sastri Pansikar, Bombay, 1929.
7. *Botanical name*, en.wikipedia.or/wiki
8. *Botanical Names of Plants*, www.ask.com
9. Nair C.K.N. and Mohanan M. : *Medicinal Plants of India with Special to Ayurveda,* Nag Publishers, Delhi - 7, 1998.
10. Bose D.M., Sen S.N. and Subbarayappa B.V. : *A Consise History of Science in India,* Indian National Science Academy, New Delhi– 1, 1971.