

CHAPTER- III

CLASSIFICATION OF PLANTS

The third among the four steps of therapeutics is medicament. In *Āyurveda Bheṣaja* or *Auśdha*-these two words are used in terms of medicament or drugs. These are the things that cure people from a suffering situation. The medicines are made of various things. These are known as *Dravyas* in medical treatise; and are classified mainly in three categories: *Doṣaprasāmak* (Alleviator of *Doṣas*), *Dhātupraduṣak* (Vitiator of *Dhātus*), *Svāsthayvṛtta* (those materials are for maintenance of good health)³⁰¹. *Caraka* classifies them based on their origin. *Jangama* (drugs of animal origin), *Audbhidam* (Plant origin) and *Pārthivam* (Metals and Minerals) are the three categories.³⁰² Nature gives us everything. The entire are found in the lap of nature. Here *Jangama* stands for all the animal kingdom including man and the products get from these. Milk is the most useful product among them. This gives freshness, strength to the body and is a cooling agent, makes strong the muscles and the bones and various other utilities either alone or accompanied with other things. Not only milk; other products like urine and honey are very useful. Honey is also strength promoter, freshener. In each Ayurvedic preparation for the treatment of *Prameha* honey is essential. Besides these two other things like bones, urines, flesh, blood, marrow, fats, hair are used for the treatment of various diseases. Here *Caraka* has discussed also about the tastes and properties of eight kinds of milks and eight types of urines.³⁰³ Various types of metals and minerals like various kinds of salts are also used for the treatment of diseases and also for the maintenance of health.³⁰⁴ That is why people use to prepare and eat food in metallic utensils. *Āyurveda* do not give that much emphasis on use of metals. In *Siddha* system there we can see the wide use of metallic preparations. *Caraka* has not discussed more on the *Pārthiva* variety of drugs. There five types of salts, gold, five kinds

³⁰¹ *Kiñcitdoṣaprasāmanam kiñcidhātupraduṣaṇam | Svāsthayvṛttau matam kiñcitrvidham dravyamucyate* ||C.S. Sūtra.1.67

³⁰² *Tat punastrividham proktam jangamaudbhidapārthivam* | Ibid.1.68

³⁰³ *Nyūrdhvam mutraṇyaṣṭau nibodha me* ||Ibid 1. 92-105

³⁰⁴ *Sauvarcalam..... pañca syurlavaṇāni ca* | Ibid. 1. 88-89

of *lohas* with their actions and properties have discussed.³⁰⁵ Most of the drugs in *Āyurveda* prepared with plant drugs. So, here we have discussions on plants and their classification.

The great law giver *Manu* defines *Udbhida* in the first of chapter his work.³⁰⁶ We find definitions on *Udbhida* given by various scholars like *Medhātithi*³⁰⁷, *Rāghavānanda*³⁰⁸ and *Sarvajñanārāyaṇa*.³⁰⁹

In Sanskrit, the word *Vanaspati* is used to signify various things. According to some like *Manusmṛti*³¹⁰, *Mahābhārata*³¹¹ and *Medinīkoṣa*³¹² the word *Vanaspati* stands for the whole plant kingdom. “*Bhuvamudbhidantīti Udbhidah*”³¹³- means spring upwards by coming out of soil; means all the plants and here we find thirteen synonyms of *Udbhida* like *Mahīruha*, *Vṛkṣa*, that which is cut; *Mahīruha*, that which grows on the earth; *Śākhī* that which has branches; *Pādapa*, that which sucks the water through the roots; *Taru*, that by which people get coolness; *Āgama*, that which cannot move; *Palāśī*, that which has leaves; *Udbhida* that which come out of soil; *Viṭapī*, *Anokaha*, *Kutah*, *Śala*, *Dru*- these are the synonyms of plant as presented in *Amarkoṣa*.³¹⁴ The things get from *Udbhida* or plants are called *Audbhida*.

The Greek naturalist Theophrastus is considered as the father of botany (370-285 B.C.). But before him there were vast studies on this science in India. It is not of recent origin, but has a long history dating back to the Vedic age. The plant science was that much important that could find place in the work like *Manusmṛti*, a work on law and *Artaśāstra*, a work on politics and warfare.

Ancient Indian plant classification was based on three major considerations- *Udbhidādī* (Botanical), *Virecanādi* (Medicinal) and *Annapānādi* (Dietetic).

³⁰⁵ C.S. Sūtra. ch. 1

³⁰⁶ *Udbhijjāḥ Sthāvarāḥ Sarve Bījakāndaprarohiṇaḥ* Manusmṛti, 1.46

³⁰⁷ *Udbhedanamudubhid-* Medhātithi

³⁰⁸ *Urdhabhinattīti Udbhit-* Rāghavānanda

³⁰⁹ *Bhūvamudbhidyajāyanta-* Sarvajñanarayana

³¹⁰ *Apuṣpa phalavanta ye te vanaspatayaḥ smṛtaḥ | Puṣpinaḥ phalinascaiva vrikṣastubhayath smṛtaḥ* ||Manusmṛti.1.47

³¹¹ *Cchinnamule hyadhisthane sarve tadjivinau hataḥ | kathamnu śākhāsthireṃ chhinnamule vanaspatau* || Mahābhārata, Ādiparva 20.15.

³¹² *Dumātre Vanaspatiḥ-*Medinīkoṣa.

³¹³ Maheśwaraṭīkā of Amarkoṣa.3.51.

³¹⁴ Amarkoṣa. Udbhidvarga

UDBHIDĀDĪ OR BOTANICAL:

Since the Vedic period Indians have recognised different kinds of plants based on habitat or on bearing of fruit and flowers. We are here first discussing the classification based on morphological characters. We have found glimpses about plant classification in the *Ṛgveda* itself.³¹⁵ *Ṛgveda* classifies plants into three categories-*Vṛkṣa*, *Oṣadhi* and *Virudh* and, again subdivided them into nine categories.³¹⁶ In *Ṛgveda*, the word *Vānaspatya* is not available. Instead of this *Vanin* is used. Here, *Palāśa* and others are found as the example of this group in the commentaries of *Sāyaṇa*. *Yajurveda*³¹⁷ also tells a lot about this but it not much clearer.

In the later period, the *Atharvaveda*³¹⁸ has given clear cut classifications. On the basis of form these are classified as *Prastrinatī* (having many branches), *Stambhinī* (having one stem), *Ekaśuṅga* (single rooted), *Pratānavatī* (creeping plants), *Aṃśumatī* (with many stalks), *Kāndinī* (plants having knotty joints), *Viśākhā* (spreading branches) and *Manjari* (Leaves with long clusters). For example: *Āmra* (mango) and coconut- the arrangement of their roots are varied from each other.

Taittiriya Samhitā and *Vājasāneyi Samhitā* mentions ten categories- *Vṛkṣa* (tree), *Vana* (tree), *Druma* (tree), *Viśākhā* (shrubs with spreading branches), *Sasa* (herb), *Aṃśumatī* (a spreading or deliquescent plant), *Vratatī* (Climber), *Stambhinī* (Bushy plant), *Pratānavatī* (Creeper), *Alasala* (those spreading in the ground).

In *Śvetāśvetaropaniṣad*, there are informations about *Oṣadhi* and *Vanaspati* and these were worshiped by people. In the commentary, *Sāyaṇa* shows *Sāla* as the *Oṣadhi* and *Aśvatha* as *Vanaspati*.³¹⁹

The *Vaiśaṣikas* tells about seven categories and *Manu* presents eight categories³²⁰-*Vṛkṣa* (Flowering plants), *Vanaspati* (plants having fruits without evident flower), *Oṣadhi* (which

³¹⁵ R.V. 10.97.

³¹⁶ *Yāḥ phalinīryā aphalā apuṣpā yāśca puṣpiṇīḥ |Bṛhaspatiprasūtāstā no muñcantvamhasaḥ || R.V. 10.97.15*

³¹⁷ *Yā phalinīryāaphalāapuṣpā yāśca puṣpiṇī |.....Y.V.12.89*

³¹⁸ A.V. Ch. 8

³¹⁹ *Auśadhiṣu Śalyadiṣu vanaspatisvaśvatthadiṣu* (*Sāyaṇa* commentary, *Śvetāśvetaropaniṣad* 2.17)

³²⁰ *Udbhijjāsthāvarā Vallya eva ca || Manusmṛti. Ch. 1.46-48*

bore abundant flower and fruits and died after fruiting), *Guccha* (Bushy herb), *Gulma* (succulent shrubs of various types), *Tṛṇa* (grass), *Pratāna* (Creeper) and *Vallī* (Climber).

Prasastapāda, a medical practitioner of *Suśruta*'s period has presented six classes- *Tṛṇa* (grass), *Oṣadhi* (herbs withering after fruiting), *Latā* (spreading and creeping herbs), *Avatana* (Arboreal plants and shrubs), *Vṛkṣa* (tree with flowers and fruits) and *Vanaspati* (tree with fruits but no flowers). *Bhāgvat Purāṇa* classifies plant in to six categories.³²¹ *Hārīta* classifies plants in to four categories- *Vanaspati*, *Latā*, *Gulma* and *Vīrudha*.³²²

Caraka Saṃhitā classifies the plants mainly in to four categories – *Vanaspati* (Plant with fruits without evident flower), *Vānaspatya* (Plants with both flower and fruit), *Virudh* (Creeper) and *Oṣadhi* (plants dies after fructification).³²³ *Astāṃgasamgraha* also opines the same. *Vanaspati* are those plants that produce fruits but not flower. But, it does not mean that there are not flowers in this type of plants. Actually, these are non evident flowers. There the fruit in immature stage is itself flower. We cannot say that there is no flower. Because fruit does not come without pollination (*Parāgyoga*).³²⁴ For example, *Panasa*, *Aśvatha*. *Vānaspatya* are those produces both flower and fruits and fruits come after flowering like *Āmra*. *Virudh* is used here for the creepers and *Oṣadhi* are those plants perished after ripening or fully development of the fruits.³²⁵ Besides these four classes *Caraka* has added two more classes under *Virudha*- *Latā* (Creeper) and *Gulma* (Succulent herbs and shrubs).³²⁶ *Amarkoṣakāra* in the *Oṣadhivarga* of the treatise explained the same.³²⁷ In *Suśruta Saṃhitā* the word *Apuṣpā* is used for *Vanaspati* that means those plants that do not produce flowers. Using of words may be different but there is no controversy about the former three. But of course problems arises with *Oṣadhi* group. Many commentators have the opinion that *Oṣadhi* means the medicinal plants.

³²¹ *Vanaspatyoṣadilatātvaśārāvīrudho drumāḥ* || Bhagvat Purāṇa 3.10.19

³²² *Teṣāmpuṣpaḥ phalīnau vanaspatayaḥ iti smṛtaḥ* || *Latā gulmasca vīrudha* – Hārīta Samhita.

³²³ *Vanaspatistathā phalerapi.....* C.S. Sūtra. 1.71-72

³²⁴ Baldev Sarmah, “*Udbhid Jnanakush*”, Bani Mandir, Gauhati, 2002.

³²⁵ *Auśadhyah phalapākāntā*. C.S. Sūtra. 1.72

³²⁶ *pratānairvīrudhaḥ smṛtāḥ* || Ibid.1.73.

³²⁷ *Vanaspatyaḥ phaleiḥ puṣpatteirpuṣpad vanaspatiḥ | Latāpratānīnī Virudh | Oṣadhyah phalapākāntā* || Amarkoṣa 2.660-661.

Kāśyapa Samhitā opines - those things that cure with their power are the *Oṣadhi*. Here *Oṣadhi* means medicine. *Ṛgveda* also tells something like this. But in the commentary of *Atharvaveda Sāyanacārya* has defined *Oṣadhi* as- *Oṣaḥ phalāpakahasyām dhiyata iti oṣadhi* |³²⁸

Caraka used the word for those plants dies after production. *Vrīhi* (rice), *Kadalī* are the good examples for it. This view of *Caraka* is more applicable. As each and every plant has medicinal values; than what is the reason of categorizing them into another group? *Astāṅgasamgraha* also tells the same thing that those plants perished after the development of their products are the *Oṣadhi*.³²⁹ *Manusmṛti* also opines the same view about *Oṣadhi*.³³⁰ *Virudh* are again classified into *Guccha* (plants with several roots) and *Gulma* (shrubs)³³¹. *Amarasiṃha* also has done classification of plants with detail and advanced knowledge.³³²

VIRECANĀDI OR MEDICINAL:

In India plants were studied mostly in relation to their medicinal properties which are known as *Virecanādi*. More stress was given to it as these are the prime source of medicine in Indian system called *Āyurveda*.

Caraka in his treatise classifies the drug bearing plants into two main categories- *Virecaka* (Purgative) and *Kaṣāya* (Astringents).³³³ Then again classifies into 50 varieties consist of ten each based on their medicinal properties;³³⁴ while *Suśruta* has categorized them under 37 groups³³⁵ and named after the most useful drug of that group. The discussions on the fifty categories are given as below:-

Jīvanīya,³³⁶ *Jīvanāya hitā* means nutrients. Ten plants are grouped under this category.³³⁷ The next one is *Bṛmhañīya*;³³⁸ *Bṛmhaṇam yaccharīrasya janayettcca Bṛmhaṇam*³³⁹ means the

³²⁸ A.V.15.2.1

³²⁹ *Aṣṭāṅgasamgraha Sūtra*. Ch.12

³³⁰ *Auśadhyah phalapākāntā bahupuṣpaphlopagā* || *Manusmṛti* 1.46

³³¹ *Gucchagulamam tu*.....*Ibid*. 1.47

³³² *Vānaspatayah*.....*ulapitypi* || *Amarkoṣa*, *Vanaushdivarga*, 2.4.109 -116

³³³ C. S. *Sūtra*. Ch. 4

³³⁴ *Ibid*.Ch. 4

³³⁵ S.S *Sūtra*. Ch. 38

³³⁶ *Jivanīyo Bṛmhañīyo lekhanīyo bhedanīyah sandhānīyo dīpanīya iti*.....C.S. *Sūtra* 4.8.

³³⁷ Table No.1

³³⁸ C.S. *Sūtra* 4.8

weight promoting drugs.³⁴⁰ *Lekhanīya* is in the third number.³⁴¹ *Śārangadhara* has explained this in his work.³⁴² These are the weight reducing drugs.³⁴³ The fourth one is *Bhedanīya*³⁴⁴; *Bhidira Dhvaidhikaraṇe*, the purgatives. These ten plants help in constipation.³⁴⁵ *Śāraṅgadhara* also tells this³⁴⁶ *Sandhānīya*³⁴⁷; *Sandhānīya* or *Bhagnādi yojanāya* are the union promoters; help in joining or fulfilling wounds. *Suśruta* also tells about this.³⁴⁸ Next one is *Dīpanīya*³⁴⁹; *jāṭharāgne Uddīpanāya hitamiti Dīpanīyam* means the stomachic and digestives.³⁵⁰ *Balya*³⁵¹ are the tonics means the strength promoters. *Varṇya*; *Varṇāya Rupasaundaryāya hitānīti Varṇyāni*. These are the complexion promoters.³⁵² *Śārangadhara* mentioned it as *Kāntikara*.³⁵³ The ninth one is *Kaṅṭhya*; *Kaṅṭhāya hitam* are the voice promoters.³⁵⁴ *Harati raktam tathā Hṛyate raktam anena iti Hṛdayam*; *Hṛdyāya hitamiti Hṛdyā*³⁵⁵ means the cardiac tonics. We see sour fruits are more under this group.³⁵⁶ Next one is *Trptighna*³⁵⁷ means the appetizers. We see those plants in the previous group *Āmrādi* are also the appetizers. They increase relishment to the foods. The appetizing character is seen more in this group. The twelfth one is *Arśoghna*³⁵⁸ means the Anti hemorrhoidals. These ten plants are beneficial in alleviating piles.³⁵⁹ Next one is *Kuṣṭhaghna*³⁶⁰; *kutsitam tiṣṭhati tvak yasmin tat Kuṣṭham*; *kuṣṭham jighnāti yaḥ saḥ* means the Anti dermatosis. These ten drugs cure all the skin diseases including leprosy.³⁶¹ *Kaṇḍughna*³⁶² means the anti Prurities. The ten drugs³⁶³ help

³³⁹ C.S. Sūtra.Ch. 22

³⁴⁰ Table No.1

³⁴¹ C.S. Sūtra 4.8.

³⁴² *Dhatummalan va dehasyavaca yavah*. Śāraṅgadhara Saṃhitā. Ch. 4

³⁴³ Table No.1

³⁴⁴ C.S. Sūtra 4.8.

³⁴⁵ Table No.1

³⁴⁶ Śāraṅgadhara Saṃhitā. Ch. 4

³⁴⁷ C.S. Sūtra. 4.8.

³⁴⁸ S.S. Ch. 15

³⁴⁹ C.S. Sūtra. 4.9

³⁵⁰ Table No.2

³⁵¹ C.S. Sūtra. 4.10

³⁵² Ibid.4.10

³⁵³ Śāraṅgadhara Saṃhitā. Ch. 5

³⁵⁴ C.S. Sūtra. 4.10

³⁵⁵ Ibid.4.11

³⁵⁶ Table No.2

³⁵⁷ C.S. Sūtra. 4.11

³⁵⁸ Ibid.4.11

³⁵⁹ Table No.3

³⁶⁰ C.S. Sūtra. 4.11

³⁶¹ Table No.3

³⁶² C.S. Sūtra. 4.11

in removing skin eruption and itching. The next one is *Kṛmighna*³⁶⁴ means the anthelmintic. These help in killing worms. The sixteenth one is *Biṣaghna*³⁶⁵ means the anti dotes. *Vāgbhaṭa* has given more emphasis on this.³⁶⁶ Next one is *Stanyajanana*;³⁶⁷ *stanodbhavam stanyam*. They produce more milk in lactating mothers. *Stanyaśodhan*³⁶⁸ are the galacto purifiers. *Suśruta* also tells about this.³⁶⁹ The next one is *Śukrajanana*. They help in production of sperm.³⁷⁰ *Caraka* has told about the characteristics of sperms³⁷¹ and what are the drugs for purification of them are also mentioned, are known as *Śukraśodhan*.³⁷² *Snehopaga*³⁷³; *Snehasya upa samīpam gacchatīti* means the adjuvants of Oleation therapy. Ten plant drugs are included in this group.³⁷⁴ The next one is the *Svedopaga*³⁷⁵ means the adjuvants of *Sveda* therapy. The twenty third is *Vamanopaga*³⁷⁶. These are the adjuvants of emetic therapy. Nine plant drugs with *Madhu* are enlisted here.³⁷⁷ Next one is *Virecanopaga*. These are the adjuvants of Purgation therapy and help in elimination of stool. *Āsthapana*³⁷⁸, non oily enemata, *Anuvāsana*³⁷⁹ oily enemata and *Śirovirecana*³⁸⁰, errhines; and the adjuvants are mentioned here. The twenty eighth is *Chardinigrahaṇa*; *Chardim Vamim nigṛhṇātīti Chardinigrahaṇam*. Here with nine plant drugs *Mṛtti* is also used.³⁸¹ Next one is *Trṣṇānigrahaṇa*³⁸²; these ten drugs help in reducing thirst caused by the affect of *Tridoṣa*. *Hikkānigrahaṇa*³⁸³; these are the anti hiccough drugs. Next one is *Purīṣa saṃgrahaṇīya*³⁸⁴ means the intestinal astringents. *Purīṣavirajanīya* are the correctives of fecal pigment; means these help in balancing *Pitta*. The next are

³⁶³ Table No.3

³⁶⁴ C.S. Sūtra. 4.11

³⁶⁵ Ibid.4.11

³⁶⁶ Aṣṭāṅgasamgraha, Uttaratāntra. Ch. 40

³⁶⁷ C.S. Sūtra. 4.12

³⁶⁸ Ibid.4.12

³⁶⁹ S.S. Ch. 35

³⁷⁰ C.S. Sūtra. 4.12

³⁷¹ C.S. Cikitsā. 30.145

³⁷² C.S. Sūtra. 4.12

³⁷³ Ibid.4.13

³⁷⁴ Table No.4

³⁷⁵ C.S. Sūtra. 4.13

³⁷⁶ Ibid.4.13

³⁷⁷ Table No.5

³⁷⁸ C.S. Sūtra. 4.13

³⁷⁹ Ibid.4.13

³⁸⁰ Ibid. 4.13

³⁸¹ Table No.6

³⁸² C.S. Sūtra 4.14

³⁸³ Ibid. 4.14

³⁸⁴ Ibid.4.15

Mutrasaṃgahaṇīya, *Mutravirajanīya* and *Mutravirecanīya*- these three groups are used in the treatment of urinary disorders.³⁸⁵ Next come *Kāśahara* and *Śvāsahara*; the first one helps in removing cough along with bronchitis and the second one helps in Asthma along with all respiration problems.³⁸⁶ *Śoṭhahara*; the *Daśamūla* are the anti dropsy or swelling drugs. *Suśruta* also used these drugs for the treatment of dropsy. *Jvarahara*;³⁸⁷ *Caraka* has mentioned various types of fever and these ten plant help in elimination of fever. *Śramahara*; these ten drugs reduce fatigue and give freshness. Next one is *Dāhapraśaman*; these help in burning sensation.³⁸⁸ *Śītapraśaman* these drugs reduce shivering in fever. *Udardapraśaman* ; *Udarda* or Urticaria is kind of skin rash due to allergic reactions. The chronic type can last for more than twenty years³⁸⁹. So, these drugs help in reducing this disease.³⁹⁰ The next one is *Angamardapraśaman* or the restoratives. *Śūlapraśaman*; the ten drugs are the pain killers.³⁹¹ *Śonitasthāpan* are the drugs stops flow of blood. Next one is *Vedanāsthāpan*³⁹²; the drugs give relief of pain; both physical and mental. *Sajñāsthāpan*³⁹³; *Sajñā cetana vā sthāpayatīti*, the drugs help in regaining consciousness are the vitalizers. Next one is *Prajāsthāpan* means the procreants; the ten drug help in gaining reproductive power. The last one of the fifty group is *Vayaḥsthāpan*³⁹⁴; *vayaḥ pakṣiṇi balyāḍau yauvane ca iti medinī*; *vayaḥ sthāpayatīti vayaḥsthāpana*. The drugs³⁹⁵ help in regain youth are the rejuvenators. *Śāraṅgadhara* used *Rasāyana* for this.³⁹⁶

Some of them are strength promoters, some are rejuvenators, and some are used for the treatment of various diseases. It is not meant that there have mentioned about five hundred numbers of plants. Of course there are some plants used for multiple purposes. For example *Drāksā* (grapes) and others are used to remove both fatigue and cough. These drugs are known as *Kasāya*. Out of them six varieties are of decoctions, four are promoters and tonics, six are

³⁸⁵ C.S. Sūtra. 4.15

³⁸⁶ Ibid.4.16

³⁸⁷ C.S. Sūtra 4.16

³⁸⁸ Ibid.4.17

³⁸⁹ <http://en.wikipedia.org/wiki/Urticaria>

³⁹⁰ C.S. Sūtra. 4.17

³⁹¹ Ibid.4.17

³⁹² C Ibid.4.18

³⁹³ C Ibid.4.18

³⁹⁴ Ibid. 4.18

³⁹⁵ Table No.10

³⁹⁶ Śāraṅgadhara Saṃhitā. Ch.3

curative of skin diseases along with leprosy, anti toxic, four are galactagogues , galacto purifiers, seven adjuvant unction, emesis, fomentations, three curatives of hiccough, thirst restraining, antiemetic, five curative of fever, removes fatigue and others. Then the remaining five are rejuvenators, restorative of consciousness and others. It must be mentioned that among the five hundred names there are five names- *Madhu*, *Śarkarā*, *Samudraphen*, *Mṛtti* and *Mṛtkapala* are not signifying plants. The first one is honey, second one is sugar, third one is a kind of fish and the other two are clay. The medicinal plants are distinguished into two categories- *Vāhyika* and *Ābhyantarīna*, could be used for external administration and for the internal applications.

ANNAPĀNĀDI OR DIETETIC:

On the basis of dietetic principles are divided into seven groups such as *Śūkadhānya* (Cereals), *Śamīdhānya* (Pulses), *Śākavarga* (Pot herbs), *Phalavarga* (Fruit bearing plants), *Hāritavarga* (Vegetables), *Ahayogīvarga* (Oils), and *Ikṣuvarga* (Sugarcane). In *Madyavarga* also, various kinds of liquors are made of fruits and canes. The *Ikṣuvikāra* group is a transforming form of Sugarcane. In *Kṛtānavarga* also we find various food articles made of Vegetables and fruits. *Suśruta* has grouped those under fifteen categories.³⁹⁷

Śūkadhānya; all the Rice grains come under this group. Rice is the staple food of Indian people. It has been using to grow in India since the birth of Indian civilization. We have found many references of rice from Vedic scriptures onwards.³⁹⁸ In Vedic period the word *Vāja* is used for rice.³⁹⁹ *Pāṇini* refers to “*Dhānykṣetra*”- paddy fields in his *Aṣṭādhyāyī*.⁴⁰⁰ *Pañcatantra* also mentions that there were abundant cultivation of paddy at that time and that’s why it became the staple food of India.⁴⁰¹ *Caraka* has mentioned various kinds of *Śūkadhānyas* in his great work. Those seeds have awn in the body are included in this group. The terms Gramineae or Poaceae are used for this particular family of grass. According to cultivating procedure these are of two types- *Ropya* or transplanted and *Vāpya* or Broadcast. *Kālidāsa* mentioned of three

³⁹⁷ S. S. Sūtra. ch.45

³⁹⁸ *Ima dhanaghritasnuvah....* R.V. 1.16. 2.

³⁹⁹ *Sarasvatī Vājebhīrvājīnīvatī.....* Ibid.1.3.10

⁴⁰⁰ *Dhanyanam bhavane kshetre khan.* Aṣṭādhyāyī 5.2.1.

⁴⁰¹ *Pañcatantra* Ch. 2 p. 208, Ch.3 .11 P. 388, Ch. 3.12 p. 392

types rice grains.⁴⁰² *Raktaśāli*, *Mahāśāli*, *Kalama*, *Śakunāhrta*, *Turṇaka*, *Dīrghaśuka*, *Gauradhānya*, *Pāndudhānya*, *Lāngula*, *Sugandhaka*, *Sarivā*, *Pramodaka* and many others are described as the good qualities of rice. Among the rice grains *Śāli* is the best group and among *Śālidhānya* *Raktaśāli* is the best one.⁴⁰³ *Suśruta* has used *Lohitaśāli* for the same.⁴⁰⁴ *Śālidhānya* are used to cultivate in *Hemanta*. The great commentator *Bhāvamiśra* divided the rice grains into five groups- *Śālidhānya*, *Vrīhi*, *Śuka*, *Śimbī* and *Kṣudra*. *Suśruta* has mentioned four groups of rice- *Śāli*, *Saṣṭhika*, *Vrīhi*, *Kudhānya*. *Yavaka*, *Hāyana*, *Pāmsu*, are other varieties of *Śālidhānya* but these are low in quality than *Raktaśāli* and *Mahāśāli* as per *Cakrapānidatta*. *Aṣṭāngasaṃgraha* also mentioned the same.⁴⁰⁵ Various food articles are used to prepare with paddy as well as rice. The gruel water prepared of fried paddy alleviates thirst, diarrhea; maintains normalcy of tissue elements, promotes digestion, cures burning sensation and fainting. This gruel with *Sunthi* and *Pippalī* gives relief from hunger and helps in elimination of waste products from body.⁴⁰⁶ *Rice* is the staple food of India. Fried rice is useful for toxic conditions and cures diseases due to *Kapha*.⁴⁰⁷

Saṣṭhika is a sub-group of *Śūkadhānya*. Actually, this type of rice gets matured in sixty days.⁴⁰⁸ In sixty days from plantation the grains can be collected from the fields.⁴⁰⁹ These are basically sown in the summer season.⁴¹⁰ *Kangu*, *Kuravaka*, *Kumundaka*, *Puṣpaka* are some of the varieties of this group.⁴¹¹ According to *Suśruta*, *Saṣṭhika* is the best type of Rice grain.

Vrīhidhānya: *Caraka* has mentioned this variety of rice grain that these are sweet, aggravator of *Pitta* and heavy.⁴¹² No more information is available about this group of rice. *Patala* is another group of rice grain and it causes all the three humour. There are several varieties of rice of low

⁴⁰² *Utkhatapraropitaḥ*..... *Kalama* iva te *Raghum*. *Raghuvamśa* Ch.1.

⁴⁰³ *Raktaśālivarasteṣām* C.S.Sūtra. 17.11

⁴⁰⁴ S. S. Sūtra. 45.4.

⁴⁰⁵ *Aṣṭāngasaṃgraha*. Sūtra. Ch. 7.

⁴⁰⁶ *Kṣuttrṣṇāglāni*..... C.S.Sūtra. 27. 250-256

⁴⁰⁷ *Bhṛṣṭa taṇḍulamicchanti garaśleṣmāmyeṣvāpi*..... Ibid. 27. 257

⁴⁰⁸ *Ṣaṣṭhikāḥ ṣaṣṭhirātreṇ pacyante*.... *Aṣṭādhyāyī* 4.1.90

⁴⁰⁹ *Garbhastha eva ye pakam yanti te sastikah matah*. *Bhāvaprakāśa Dhānyavarga*.

⁴¹⁰ *Graiṣmakeṣu ṣaṣṭhikādiṣu*.... *Dravyasamgrah*. 1.13

⁴¹¹ S S. Sūtra. 45. 8

⁴¹² *Śūtaḥ snigdhaḡuruḥ svādustridoṣaghnaḥ*.....C.S. Sūtra. 27.15

quality. For the same, Suśruta has grouped them into this head “*Kudhānya*”.⁴¹³ *Syāmaka*, *Uddālaka*, *Priyangu*, *Gavedhuka*, *Veṇuyava* all these fall into this group.⁴¹⁴

Śamīdhānya: *Śamī*, *Śimbī*, *Śimbā* these terms are used for pulses; falls under the family Leguminaceae and Papilionaceae. These are widely used among Indian food. *Pāṇini* also mentions about the pulses.⁴¹⁵ *Pañcatantra* in many places mentioned about various foodstuffs prepared with pulses.^{416,417} Among them *Mudga*, *Vanamudga*, *Makuṣṭha*, *Masura*, *Canaka* are the various types of pulses. Among all the Pulses *Mudga* is recognized as the best⁴¹⁸ and *Uḍad* is the worst one.⁴¹⁹ Sesame also falls in this group.⁴²⁰ And the black variety of sesame is regarded as the best type.⁴²¹ *Rājamāsa*, *Aranyamāsa*, *Yava*, wheat are also included in this group by *Suśruta*.⁴²²

Phalavarga: The term *Phala* in Sanskrit refers to the fruits. Broadly, the botanical term fruit refers to the mature ovary of a plant including its seeds, covered or uncovered or covering with any closely connected tissue without any consideration of whether these are edible or not. As related to food the term refers to the edible part of a plant that consists of seeds and surrounding tissues. Various sweet and sour fruits are mentioned in the three great compendia of medicines. *Caraka* has included various plants under *Phalavarga*. Besides these also *Vedas* and other literatures mention about various kinds of fruits. But, before consuming it have to see whether these are edible or not. *Suśruta* has mentioned various kinds of fruits that contain poison.⁴²³ Those fruits excessively matured also should not consume as food. It causes various side effects to the health. Sometimes rest of one part all parts of a plant is edible. For example, we can take the young shoots of *Vetra* but the flowers of these plants are poisonous.

⁴¹³ S.S. Sūtra. 45.21

⁴¹⁴ Ibid. 45.21-23

⁴¹⁵ Pāṇini. 1.4.49.

⁴¹⁶ Pañcatantra of Kale, 5.4 P.536.

⁴¹⁷ Ibid. p. 478.

⁴¹⁸ *Mudgaḥsūpyottamo mataḥ* || C.S. Sūtra. 27. 23; 25.38

⁴¹⁹ Ibid. 25. 38

⁴²⁰ *Snigdhoṣṇo..... kaṭukastilāḥ* | C.S. Sūtra. 27.30

⁴²¹ S.S. Sūtra. 45.27.

⁴²² Ibid. 45.29

⁴²³ Ibid. Ch.2

Śākavarga: In the broadest sense the botanical term vegetable refers to any plant, edible or not; including trees bushes, vines and vascular plants. Like how *Vanaspati*, in the widest meaning it refers to the whole plant world. As relates to food there are two slight different botanical definitions. According to one, a vegetable is a plant cultivated for its edible parts; according to the other vegetable is the edible part of a plant; such as stem, stalk, root, tuber, bulb, leaves, flower fruits and others.⁴²⁴ *Amarasiṃha* has given a clear enumeration of *Śāka*.⁴²⁵ Only the leaves and young spouts of the plant are included in to this group. *Suśruta* has included 70 species in this group.⁴²⁶ The young and fresh leaves should be consumed. The ripped and infected by insects should not be consumed and there are poisonous vegetables also which are not to be consumed.

Hārīta Varga: These are nothing but the vegetables which are used to consume freshly. The vegetables that are taken as salads are included in this group. Ginger, lemon, *Tulsī*, *Dhānyaka*, onion are of this group. These are the vegetables used to consume as salads.

Kandavarga (Tubers): The tuber is used as a vegetable. From the very beginning of time people are taking the tubers as food. Among the tubers Yam takes the most important place. Various kinds of yams are available throughout the country.⁴²⁷ *Caraka* mentions various types of yams- *Kāṣṭhālu*, *Hastyālu*, *Raktālu*, *Piṇḍālu* and others.

Madyavarga: Various kinds of wines are prepared with juices of fruits like grapes and other fruits locally available. Liquors are also used to make with the juice of sugarcane, rice, treckle and many other things. Today also, in various communities especially in tribal society these are used to prepare at home.

Caraka has mentioned about various kinds of sugarcanes like *Paundra*, *Vansaka* and about various transforming forms of sugarcane.⁴²⁸ *Suśruta* also mentioned of various kinds of sugarcanes.⁴²⁹ Various oils are also taken out from seeds like mustard, sesame and many others.

⁴²⁴ IARC Handbooks of Cancer Prevention, "Fruits and Vegetables" International agency for Research on Cancer, WHO.

⁴²⁵ *Śākākhyaṃ patrapuspādeḥ*.... Amarkoṣa, Vanaśadhivarga 2.4

⁴²⁶ S.S. Sūtra.

⁴²⁷ S. S. 45.298

⁴²⁸ *Prabhūta* *sarvaśarkarā*||C.S. Sūtra. 27.238- 242

⁴²⁹ S.S. Ch.45

The ancient people took out these plant products mainly from the forest and they were very much aware of their characters and contents. But in some cases deviations have been seen in their sayings. For example, *Pindālu*, one kind of tuber, as per *Vāgbhaṭa* it is hot in potency, alleviator of *Vāta* and *Kapha*, and aggravator of *Pitta*.⁴³⁰ Whether as per *Suśruta* these are cold in potency, heavy and aggravator of *Kapha*.⁴³¹

Atharvaveda speaks of various medicinal herbs and their classifications based on four specific characters. On the basis of colour they have been classified as *Babhru* (Brown), *Śukra* (White), *Rohinī* (Red), *Prśnī* (Speckled), *Asiknī* (Blue), and *Kṛṣṇa* (Black). In that age to remember the name of some plants the nomenclature was done by the sages by seeing the colour of the plants, the colour of the stem or flower and others. *Śvetanāmā*, *Prśnīparṇī* are good examples of it. Now also scientists use some words signifying colour by which we can ascertain some characters about the plant. For example if ‘*alba*’ is found in the name of a plant then the flowers of the plant must be in white colour. On the basis of properties, classified into *Jivalā* (life giving), *Nāghārisā* (harmless), *Arundhatī* (healing), *Unnayantī* (Elevating), *Madhumatī* (having sweet juice), *Pracetā* (enlightening), *Medinī* (Oily), *Ugra* (Sharp smelling), *Viśadoṣinī* (Antidote), *Bālasanāsanī* (Anti-phlegm).

On the basis of shape and size, plants are classified into *Vṛkṣa* (Tree), *Gulma* (Hey), *Latā* (Creeper), *Pratāna* (one that spreads on ground), *Puṣpavatī* (Flowery), *Apuṣpak* (Without flowers), *Prasumatī* (Sprouted), *Phalinī* (one that bears fruit), *Aphalā* (without fruits). These above four points are according to *Atharvaveda*.

*Bhāvamiśra*⁴³² has groped the plants in ten categories- *Harītakyādivarga*, *Karpurādivarga*, *Guducyādivarga*, *Puṣpavarga*, *Vaṭādivarga*, *Āmrādivarga*, *Dhāvyavarga*, *Śākavarga*, *Tailavarga* and *Ikṣuvarga*.

Kauṭilya’s classification is somewhat different from the above mentioned. He had classified *Kupyavarga* (Timber and plants)⁴³³, *Vaṃśavarga* (Bamboos)⁴³⁴, *Vallīvarga* (Creepers)⁴³⁵

⁴³⁰ A. S. Sūtra. 16.105.

⁴³¹ S. S.Ch. 46

⁴³² Bhāvaprakāśa

⁴³³ *Kupyavargah: Śākatiniśadhanvana.....dhavādih* | Arthaśāstra, 2.17.4

⁴³⁴ *Utajacimiyacāpya.....bhāllūkādir veṇuvargah* | Ibid. 2,17.5

Valkavarga (Having useful barks)⁴³⁶, *Oṣadhavarga* (Medicinal plants)⁴³⁷ and *Viṣavarga* (Poisonous plants)⁴³⁸.

Caraka tells about sixteen herbs having useful roots, *Mulini*⁴³⁹. Among them ten have great medicinal value and wide uses are known as *Daśamūla*. *Bilva*, *Agnimantha* and others. are included in this group. *Phalinī* (those plants having useful fruits)⁴⁴⁰ are nineteen in number. Plants used for *Virecana* (elimination therapy) are six in number, having useful barks are three in number.

From the above classifications that are done by *Caraka* we have seen the first four categories *Vanaspati* and others; and their sub categories are done on the basis of the morphological characters and the fifty categories done on the basis of their properties and again some are on dietetic principles.

Vṛkṣāyurveda, the most ancient and the most authorized work on plant science presents a different kind of classification which is applicable till now. According to the author *Parāśara*'s classification there are two categories; *Dvimāṛka* (Dicotyledons) and *Ekamāṛka* (Monocotyledons) and then classified them into many families- *Śamīganīya* (Leguminaceae), *Puplikavarga* (Rutaceae) and more four types. This is quite relevant the plant groups of today but later scientists included many new groups to these.

All parts of plants are used somehow. The different part of the plants; namely barks, secretions, fiber, juice, tender leaves, alkali preparations, latex, fruits, flowers, ashes, oils, thorns, matured leaves, roots, rhizomes, sprouts are uses for the purpose of medicine. From roots to shoots are used; all are useful. In ancient days the raw products were used to collect from the forests. Of course, some of them grew in gardens. The physicians used to cultivate some plants used frequently and those able to cultivate. But various plants could not be cultivated because of the changing of environments. Those plants cannot adjust easily in any climate. Soil is also a

⁴³⁵ Vallīvargah..... Arthaśāstra, 2,17.6

⁴³⁶ Ibid. 2,17.8

⁴³⁷ Ibid. 2,17.11

⁴³⁸ Ibid. 2,17.12

⁴³⁹ *Mūlīnyah ṣoḍaśa*.....C.S. Sūtra 1.74

⁴⁴⁰ *Phalinyoviṣatiḥ*... Ibid.1. 81-87

factor. Some plants change their characters in according to the habitat. So they used to collect them mostly from the forests.

For collection of drugs certain rules and regulations were observed. Sometimes they used to go to collect the drug materials in the fort night. And sometimes by seeing the season they used to go for collection. Among the six seasons, *Śatapatha Brāhmaṇa* opines that the *Vasanta*, *Prāvṛt* (*Varsā*) and *Śarat* are familiar for the growth of Plants.⁴⁴¹ At that time people were so scientific in their deeds. Going out in fort night, this is not a matter for surprising. Because, to collect plants like *Soma* and others fort night is preferable. The leaves of *Soma* are not always available. In a significant day of a fort night the leaves become full. In the *Apamārgatandulīaya adhyāya*, we have found the instruction of using the dehusked seeds. Means when the seeds become fully matured then they are applicable for treatment. So, it the best time for the collection of those plants. In some cases, roots and rhizomes are applicable. For the collection of those one has to wait for the perfect season in which the rhizomes become matured. Plant like *Ādraka Vasanta* is the best season for collection.

In collection of the drug materials the sages used to take the help of local people of that area, hermits, cow herds, tribes.⁴⁴² Actually, this is very much important also to take the help of the people of that locality for the collection of the plants. Because, they used various synonyms for a significant plant and for direct touch with those plants had knowledge on maturing stage and the availability of them.⁴⁴³ The rests are on the hand of the physician for the correct identification and proper use of plants. In the olden days they also took the help of others, but used to go with them and made preparation with own hand.

Some of the plants grow in water, some on soil, and various plants used to grow on another plant. There are lacs of plants in the world. But till now nobody can say the exact number of plants though research works are carrying on. *Vedas* say the number of plants approximately 260. *Kauṭilya* mentioned 330 varieties and *Dhanvantari Nighaṇṭu* says of 224 varieties. *Suśruta Saṃhitā* tells about 350 varieties of plants. *Caraka* included many new varieties and total

⁴⁴¹ *Ya oṣadhi purva jātaḥ | devebhyas triyugam puret ritavo vai devatās tebhya etas trih pura jāyante vasanta prāvṛsi śāradī* || *Śatapatha Brāhmaṇ*. 7. 2.4.26.

⁴⁴² *Oṣadhirmamarupābhyām jānate hyajapā vane | Avipāścaiva gopāśca ye canye vanauṣadhinah* || C.S Sūtra. 1.1.120

⁴⁴³ *Ibid.* 1.1.120

numbers of those are more than 350 as per *Caraka Saṃhitā*. These plants categorized into many groups according to some significant characters like colour, size, uses and depending on the most useful part.