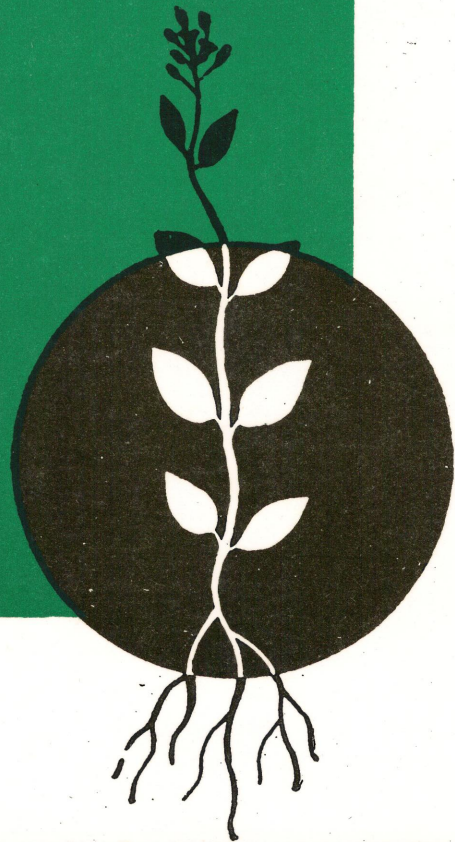


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āryavaidyaṅ



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EDITORIAL

In the last issue, in the editor's note, we expressed our happiness and appreciation, on the realistic decision of the central government to encourage ayurveda by way of a portfolio intended for its promotion. Under present conditions such a reservation is a needed step. We have always held the view that the promotion of the health care programmes in India can be successfully worked out, only if we take care to plan them in the light and spirit of the Alma Ata Declaration, which insists on the co-operative work of all schools and systems of medicines, western or eastern, traditional or modern. It involves mobilisation of all available working forces such as practitioners of various systems and those who are interested in social service activities in the medical field. Such a mobilisation and co-operative activity helps not only to promote the standard of health but also to improve the faculties of each system by mutual understanding and by arousing the spirit of research into the potentialities of each system. Such model works carried out by other countries have already proved that there is no other choice for any country if the successful promotion of health-standard and emergence of better methods for the use of the different systems of medicine are sincerely intended to be the true aim of health-programmes.

So the recent move from the government towards planning for the national health-programmes, inviting institutions and practitioners to offer co-operation and furnish information and suggestions for the successful implementation of the programmes, deserves the heartiest welcome by all. We therefore record here our full agreement to the proposals and our readiness to co-operate with any course of action in this regard.

Government of India has listed 15 items in the scheme of the national health programmes and in all of them, ayurveda has its own outlooks and ways of working. In eradication of infective diseases and promotion of immunity, it is a well recognised fact that the approaches, instructions and techniques prescribed in ayurvedic *svasthavrtta*, which are all taken selectively from the experiences of generations, demand the first concern. There is no doubt that later advance in science, with new medicines and facilities have gone further in the work for the eradication of such diseases. But experience has also proved that such works alone are not sufficient and the approaches and practices of ayurveda are not to be fore-stalled but studied in the light of new advances and utilised to cover areas when modern techniques alone cannot serve efficiently. Now, all diseases, infective or originating from internal imbalances can be prevented and cured only if the people are made conscious of the surroundings and ways of life. Ayurveda gives primary importance to such steps for awakening the consciousness

of people, by giving due importance to medicines, diet and techniques for curing all diseases. So promotion of mutual understanding and consciousness of the inherent faculties of all medical systems as per the guidelines of Alma Ata Declaration is the only possible way to improve our medical sciences, as per the needs of our nation. Let us hope that the hitherto partisan spirit of commercial-minded magnates of medicine will be replaced by such a co-operative action founded on the selfless spirit for the welfare of the people in India also.

Atarishman Bhaty Khoran

Chief Editor (Publications)

DR. SARADA SUBRAHMANYAM

Dr. Sarada Subrahmanyam who expired recently was the doyen of physiologists of South India. Along with stalwarts like Dr. Basudev Narayan, B.K. Anand, C. Vareed, S.M. Bannerjee, N. Venkatramiah, P. Brahmayya Sastri and others, she strived her best to develop and nurture the great traditions in teaching and research in biomedical science in post-independent India. The fact that in all fields of biomedicine, India has been able to produce research work of international standard is a tribute to their sagacity and leadership.

Born in a very famous family in Trichur, Dr. Sarada completed her medical education in the Madras Medical College and started practice at Kodungallur (Kerala) where she earned a name as a flourishing gynaecologist. She married, S. Subrahmanyam an advocate practising in Madras, and shifted over to Madras where she continued to be a popular prac-



itioner. However, it was the good fortune of the biomedical sciences that she decided to take up a teaching assignment and joined the Stanley Medical College as a member of the teaching staff. As an already existing member of the staff of the Stanley Medical College, it was my singular good fortune to be associated with her, and this association continued till her death.

Dr. Sarada Subrahmanyam took her M.Sc. degree in 1953 and Ph.D. in 1956 from the medical faculty of the University of Madras. Her research work was on the role of catecholamines in hypertension. She became the professor and head of the department of physiology in 1956 and she continued in the post till her retirement in 1978.

In the period between 1965-78, she had done extensive work in the field of magnetobiology and had perfected the application of pulsed magnetic field in the treatment of a large variety of diseases. Immediately after her retirement, she founded the Madras Institute of Magnetobiology and her entire time, energy and resources were used in the development of this famous institution in Madras. The prestigious building and laboratories of this institute at Annanagar will always stand as a tribute to her dedicated work.

Dr. Sarada Subrahmanyam was one of the founder members of the Association of Physiologists and Pharmacologists of India which has now completed about 40 years and has become one of the biggest scientific associations of India. Subsequently she was instrumental in forming the Indian Association of Biomedical Scientists in 1979 and was its founder president. She was also active in voluntary health association and various other voluntary organisations. As a magnetobiologist, she was very much interested in holistic medicine and attended the World Holistic Health Conferences held in 1994 at France and in 1996 at Calicut and presented important papers on both the occasions.

Apart from more than 1000 scientific articles which she has published in various national and international scientific journals, she was the editor of two very popular text books in physiology viz. the Text book of Physiology and the Concise Text book of Physiology both originally published by Orient Longman & Co. Ltd. and the former now being published by Chand & Co., Delhi. As a co-author of both these books, I would like to state that both these books have run into several editions and this is mainly due to her ability as an author and educator.

She was awarded the B.C. Roy award for social medical activities and the fellowship of the National Academy of Medical Sciences. The Indian Association of Biomedical Scientists and the International Association of Medical Scientists were conferred upon her. She has attended as India's representative, innumerable world conferences.

She has succeeded in all the kaleidoscopic activities which she attempted and has opened up new vistas in physiological understanding and has helped in fashioning new tools of medical therapy which has far-reaching beneficial effects.

Dr. K. Madhavankutty
(Hon. Consulting Editor)

FROM THE PAGES OF VAGBHATA - XLIV

Varier, N.V.K

ABSTRACT

Seven *gana* are discussed in this issue. Different opinions regarding the identification of *gandira*, *ajaji*, *katvanga*, (*vatsakadi gana*), *ananta*, *samanga* (*priyamguadi gana*) and *vanjula* (*nyagrodhadi gana*) figure.

XXV. *Gana - Vatsakadi*

वत्सकमूर्वाभार्ङ्गीकटुका मरिचं घृणप्रिया च गण्डीरम् ।

एला पाठाऽजाजी कद्वङ्गफलाजमोदसिद्धार्थवचाः ॥

जीरकहिङ्गुविडङ्गं पशुगन्धा पञ्चकोलकं हन्ति ।

चलकफमेदःपीनसगुल्मज्वरशूलदुर्नाम्नः ॥

Ghunapriya

This is *ativisa* (*Aconitum heterophyllum*).

Gandiram

There are conflicting interpretations about the identity of *gandira*. This has been translated as *vatakkoti*, *amarccakkoti*, *kalli*, *cena*, *kattucena* and *cerucira* by different scholars. However, physicians of Kerala identify this as *amarccakkoti* (*Cayratia carnosa*).

Ajaji

Both *jiraka* and *krsnajiraka* are called by the name *ajaji*. As *jiraka* itself forms

a part of this *gana*, it may be concluded that, here, the reference is to *krsnajiraka* (*Nigella sativa*).

Katvanga

While many lexicographers identify this as *syonaka* (*Oroxylum indicum*), Dalhana, the commentator of *Susrutasamhita* identifies this as *aralu* (*Ailanthus excelsa*). Dr. Bapalal Vaidya says "it is high time now to separate both these trees – *aralu* and *tuntuka* (*syonaka*) to distinguish them as distinctly separate from one another. Their properties are also different." Hence it looks more appropriate to consider *katvanga* (*aralu*) as a separate drug, and not as a synonym of *syonaka*.

Pasugandha

This has been identified as *Cleome viscosa*. In some places *Gynandropsis gynandra* is also used in the place of *Cleome viscosa* which have identical properties.

Table 1 : *Vatsakadi gana*

Sl.No	Name of the drug	Scientific name	Malayalam name	Officinal part
1	<i>Vatsaka</i>	<i>Holarrhena pubescens</i> (Buch. - Ham.) Wallich ex Don	<i>Kutakappala</i>	Bark
2	<i>Murva</i>	<i>Chonemorpha fragrans</i> (Moon) Alston	<i>Perumkurumba</i>	Root
3	<i>Bharngi</i>	<i>Clerodendrum serratum</i> (Linn.) Moon	<i>Cerutekku</i>	Root
4	<i>Katuka</i>	<i>Picrorhiza scrophulariflora</i> Pennell	<i>Katukurohini</i>	Root
5	<i>Maricam</i>	<i>Piper nigrum</i> Linn.	<i>Kurumulaku</i>	Fruit
6	<i>Ghunapriya</i>	<i>Aconitum heterophyllum</i> Wall. ex Royle	<i>Ativitayam</i>	Tuberous root
7	<i>Gandiram</i>	<i>Cayratia carnosa</i> (Wall. ex Wight) Gagnep.	<i>Amarcakkoti</i>	Whole plant
8	<i>Ela</i>	<i>Elettaria cardamomum</i> Maton	<i>Elattari</i>	Seeds
9	<i>Patha</i>	<i>Cyclea peltata</i> (Lam.) Hook.f. & Thoms.	<i>Patakkizhangu</i>	Tuberous root/ rhizome
10	<i>Ajaji</i>	<i>Nigella sativa</i> Linn.	<i>Karimjirakam</i>	Seeds
11	<i>Katvangaphala</i>	<i>Ailanthus excelsa</i> Roxb.	<i>Matti</i>	Fruit
12	<i>Ajamoja</i>	<i>Trachyspermum</i> <i>roxburghianum</i> (DC.) Craib.	<i>Ayamodakam</i>	Seeds
13	<i>Sidhartha</i>	<i>Brassica juncea</i> (Linn.) Czern. & Coss.	<i>Katuku</i>	Seeds
14	<i>Vaca</i>	<i>Acorus calamus</i> Linn.	<i>Vayampu</i>	Rhizome
15	<i>Jiraka</i>	<i>Cuminum cyminum</i> Linn.	<i>Jirakam</i>	Seeds
16	<i>Hingu</i>	<i>Ferula asafoetida</i> Linn.	<i>Kayam</i>	Resin
17	<i>Vidanga</i>	<i>Embelia ribes</i> Burm.f.	<i>Vizhalari</i>	Seeds
18	<i>Pasugandha</i>	<i>Cleome viscosa</i> Linn.	<i>Atunarivela</i>	Root
19	} <i>Pancakolam</i>	<i>Piper longum</i> Linn.	<i>Tippali</i>	Fruit
20		<i>Piper longum</i> Linn. (Wild var.)	<i>Kattutippali</i>	Root
21		<i>Piper brachystachyum</i> Wall.	<i>Kattumulaku</i>	Root
22		<i>Plumbago indica</i> Linn.	<i>Kotuveli</i>	Root
23		<i>Zingiber officinale</i> Rosc.	<i>Cukku</i>	Rhizome

Pancakolam

This is a group of five drugs comprised of *Piper longum*, *Piper longum* (wild var.), *Piper brachystachyum*, *Plumbago indica* and *Zingiber officinale*.

Properties of *Vatsakadi gana*

This *gana* alleviates vitiated conditions of *vata*, *kapha*, excessive fat, coryza, flatulence, fever, colic and haemorrhoids.

XXVI. & XXVII. *Gana - Vacadi & Haridradi*

वचाजलददेवाह्वनागरातिविषाभयाः ।

हरिद्राद्वययष्ट्याह्वकलशीकुटजोद्धवाः ॥

वचाहरिद्रादिगणामातीसारनाशनौ ।

मेदःकफाढ्यपवनस्तन्यदोषनिबर्हणौ ॥

Here, Vagbhata refers to two *gana* viz. *vacadi* and *haridradi*. Both are credited with similar properties.

Table 2 : *Vacadi gana*

Sl.No	Name of the drug	Scientific name	Malayalam name	Officinal part
1	<i>Vaca</i>	<i>Acorus calamus</i> Linn.	<i>Vayampu</i>	Rhizome
2	<i>Jalada</i>	<i>Cyperus rotundus</i> Linn.	<i>Muttanga</i>	Rhizome
3	<i>Devahva</i>	<i>Cedrus deodara</i> (Roxb. ex D. Don) G. Don	<i>Devataram</i>	Heart wood
4	<i>Nagara</i>	<i>Zingiber officinale</i> Rosc.	<i>Cukku</i>	Rhizome
5	<i>Ativisa</i>	<i>Aconitum heterophyllum</i> Wall. ex Royle	<i>Ativitayam</i>	Tuberous root
6	<i>Abhaya</i>	<i>Terminalia chebula</i> Retz.	<i>Katukka</i>	Fruit rind

Table 3 : *Haridradi gana*

Sl.No	Name of the drug	Scientific name	Malayalam name	Officinal part
1	<i>Haridra</i>	<i>Curcuma longa</i> Linn.	<i>Manjal</i>	Rhizome
2	<i>Daruharidra</i>	<i>Coscinium fenestratum</i> (Gaertn.) Colebr.	<i>Maramanjal</i>	Stem
3	<i>Yastyahva</i>	<i>Glycyrrhiza glabra</i> Linn.	<i>Irattimadhuram</i>	Root
4	<i>Kalasi</i>	<i>Desmodium gangeticum</i> (Linn.) DC.	<i>Orila</i>	Root
5	<i>Kutajodbhava</i>	<i>Holarrhena pubescens</i> (Buch. - Ham.) Wallich ex Don	<i>Kutakappala</i>	Bark

Haridradi gana

Haridradvaya

Haridradvaya is *haridra* and *daruharidra*. The controversies regarding the identity of *daruharidra* was discussed in *vellapamargadi gana* (Vol. IX No. 4).

These two *gana* alleviate acute dysentery, excessive fat, vitiated condition of *kapha*, rheumatoid arthritis and *stanyadosa*.

XXVIII. & XXIX. *Gana* – *Priyanguadi* & *Ambasthadi*

प्रियङ्गुपुष्पाञ्जनयुग्मपद्माः पद्माद्रजो योजनवल्च्यनन्ता ।

मानद्रुमो मोचरसः समङ्गा पुत्रागशीतं मदनीयहेतुः ॥

अम्बष्टा मधुकं नमस्करी नन्दीवृक्षपलाशकच्छुराः ।

रोध्रं धातकिविल्वपेशिके कङ्कः कमलोद्भवं रजः ॥

गणौ प्रियङ्गुवम्बष्ठादी पक्वातीसारनाशनौ ।

सन्धानीयौ हितौ पित्ते ब्रणानामपि रोपणौ ॥

Yojanavalli

This is one of the synonyms of *manjistha* (*Rubia cordifolia*).

Ananta

This has been identified as *sariba*, *dhanvayasa*, and *durva*. As all the three has two varieties, *ananta* may indicate the use of the second variety in such cases. Traditionally, physicians of Kerala use *sariba* when *anantamula* is indicated. But in this *gana* we, generally prefer to take *dhanvayasa* (*Tragia involucrata*) for *ananta*.

Manadruma

This is *sanmali* (*Bombax ceiba*). The officinal part is bark.

Mocarasa

This is the gummy extract from the bark of *Bombax ceiba*.

Table 4 : *Priyanguadi gana*

Sl.No	Name of the drug	Scientific name	Malayalam name	Officinal part
1	<i>Priyangupuspa</i>	<i>Callicarpa macrophylla</i> Vahl	<i>Nazhalpuvu</i>	Flower
2	} <i>Anjanayugma</i>	Antimoni	<i>Anjanam</i>	
3		Rasot	<i>Rasanjanam</i>	
4	<i>Padma</i>	<i>Nelumbo nucifera</i> Gaertn.	<i>Tamara</i>	Flower
5	<i>Padmadrajah</i>	<i>Nelumbo nucifera</i> Gaertn.	<i>Tamarayalli</i>	Stamens
6	<i>Yojanavalli</i>	<i>Rubia cordifolia</i> Linn.	<i>Mancatti</i>	Root
7	<i>Ananta</i>	<i>Tragia involucrata</i> Linn.	<i>Kotuttuva</i>	Root
8	<i>Manadruma</i>	<i>Bombax ceiba</i> Linn.	<i>Ilavu</i>	Bark
9	<i>Mocarasa</i>	<i>Bombax ceiba</i> Linn.	<i>Ilavinpasa</i>	Gummy extract
10	<i>Samanga</i>	<i>Mimosa pudica</i> Linn.	<i>Tottalvati</i>	Whole plant
11	<i>Punnaga</i>	<i>Calophyllum inophyllum</i> Linn.	<i>Punna</i>	Flower
12	<i>Sita</i>	<i>Santalum album</i> Linn.	<i>Candanam</i>	Heart wood
13	<i>Madaniyahetu</i>	<i>Woodfordia fruticosa</i> (Linn.) Kurz	<i>Tatiri</i>	Flower

Table 5 : *Ambasthadi gana*

Sl.No	Name of the drug	Scientific name	Malayalam name	Officinal part
1	<i>Ambastha</i>	<i>Hibiscus cannabinus</i> Linn.	<i>Ambadi</i>	Whole plant
2	<i>Madhukam</i>	<i>Glycyrrhiza glabra</i> Linn.	<i>Irattimadhuram</i>	Root
3	<i>Namaskari</i>	<i>Mimosa pudica</i> Linn.	<i>Tottalvati</i>	Whole plant
4	<i>Nandivrksa</i>	<i>Tabernaemontana coronaria</i> (Jacq.) Willd.	<i>Nandiarvattam</i>	Root
5	<i>Palasa</i>	<i>Butea monosperma</i> (Lam.) Taub.	<i>Plasu</i>	Bark
6	<i>Lodhra</i>	<i>Symplocos cochinchinensis</i> (Lour.) Moore ssp. <i>laurina</i> (Retz.) Nooteboom	<i>Paccotti</i>	Bark
7	<i>Dhataki</i>	<i>Woodfordia fruticosa</i> (Linn.) Kurz	<i>Tatiri</i>	Flower
8	<i>Vilvapesika</i>	<i>Aegle marmelos</i> (Linn.) Corr.	<i>Kuvalamajja</i>	Fruit pulp
9	<i>Katvanga</i>	<i>Ailanthus excelsa</i> Roxb.	<i>Matti</i>	Fruit
10	<i>Kamalaraja</i>	<i>Nelumbo nucifera</i> Gaertn.	<i>Tamarayalli</i>	Stamens

Samanga

This term has been translated as *tottalvati* (*Mimosa pudica*) *mukkutti* (*Biophytum sensitivum*) and *patarcunda* (*Cassia mimosoides*) by Kerala commentators. In fact *samanga* is one of the synonyms of *lajjalu*.

Sita

This is *candana* (*Santalum album*).

Madaniyahetu

This is a synonym of *dhataki* (*Woodfordia fruticosa*).

Ambasthadi gana

Ambastha

Thayyil Kumaran Krishnan has identified this as *ambadi* (*Hibiscus cannabinus*).

Nandivrksa

Kerala commentators have made several confusing translations for this term. *Cittaraya*, *patukarana*, *attukottappala* are among them.

ARYAVAIDYAN

In some texts this term has been translated as *nandiarvattam* (*Tabernaemontana coronaria*).

Properties of Priyamguadi & Ambasthadi gana

These two *gana* alleviate chronic diarrhoea and heal ulcers. They are union promoters (*sandhaniya*) and suitable for *pitta* disorders.

XXX. Gana – Mustadi

मुस्तावचाग्निद्विनिशाद्वित्तिका -

भल्लात पाठात्रिफलाविषाख्याः ।

कुष्ठं त्रुटी हैमवती च योनि -

स्तन्यामयघ्ना मलपाचनाश्च ॥

Properties of Mustadi gana

This is quite effective in vaginopathy and purifies breast milk. This *gana* is *malapacana* also.

Table 6 : *Mustadi gana*

Sl.No	Name of the drug	Scientific name	Malayalam name	Official part
1	<i>Musta</i>	<i>Cyperus rotundus</i> Linn.	<i>Muttanga</i>	Rhizome
2	<i>Vaca</i>	<i>Acorus calamus</i> Linn.	<i>Vayampu</i>	Rhizome
3.	<i>Agni</i>	<i>Plumbago indica</i> Linn.	<i>Kotuveli</i>	Rhizome
4 } 5 }	<i>Dvinisa</i>	<i>Curcuma longa</i> Linn.	<i>Manjal</i>	Rhizome
		<i>Coscinium fenestratum</i> (Gaertn.) Colebr.	<i>Maramanjali</i>	Stem
6 } 7 }	<i>Dvitikta</i>	<i>Picrorhiza scrophulariflora</i> Pennell	<i>Katukurohini</i>	Rhizome
		<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees	<i>Kiriyattu</i>	Whole plant
8	<i>Bhallata</i>	<i>Semecarpus anacardium</i> Linn. f.	<i>Ceru</i>	Seed
9	<i>Patha</i>	<i>Cyclea peltata</i> (Lam.) Hook.f. & Thoms.	<i>Patakkizhangu</i>	Rhizome
10 } 11 } 12 }	<i>Triphala</i>	<i>Terminalia chebula</i> Retz.	<i>Katukka</i>	Fruit rind
		<i>Terminalia bellirica</i> (Gaertn.) Roxb.	<i>Tannikka</i>	Fruit rind
		<i>Phyllanthus emblica</i> Linn.	<i>Nellikka</i>	Fruit rind
13	<i>Visakhya</i>	<i>Aconitum heterophyllum</i> Wall. ex Royle	<i>Ativitayam</i>	Rhizome
14	<i>Kustha</i>	<i>Saussurea lappa</i> C.B. Clarke	<i>Kottam</i>	Rhizome
15	<i>Truti</i>	<i>Elettaria cardamomum</i> Maton	<i>Elattari</i>	Seed
16	<i>Haimavati</i>	<i>Argemone mexicana</i> Linn.	<i>Erumakkalli</i>	Root

XXXI. *Gana - Nyagrodhadi*

न्यग्रोधपिप्पलसदाफलरोध्रयुग्मं

जम्बूद्वयार्जुनकपीतनसोमवल्काः ।

प्लक्षाम्रवञ्जुलप्रियाळपलाशनन्दी -

कोळीकदम्बविरलामधुकं मधूकम् ॥

न्यग्रोधादिर्गणो व्रण्यः सन्नाही भग्नसाधनः ।

मेदःपित्ताम्रतृड्दाहयोनिरोगनिबर्हणः ॥

Pippala

Pippala is the synonym of *asvatha* (*Ficus religiosa*).

Sadaphala

This is *udumbara* (*Ficus racemosa*).

Jambudvayam

These are *jambu* (*Syzygium cumini*) and *mahajambu* (*Syzygium* sp.).

Many lexicographers like Bhavamisran etc. mention different types of *jambu*, viz. *rajajambu*, *mahajambu*, *ksudrajambu*, *kakajambu*, *jalajambu* etc. We do not know whether all these are different species of *Syzygium* or different varieties of *Syzygium cumini*.

Table 7 : *Nyagrodhadi gana*

Sl.No	Name of the drug	Scientific name	Malayalam name	Officinal part
1	<i>Nyagrodha</i>	<i>Ficus benghalensis</i> Linn.	<i>Peral</i>	Bark
2	<i>Pippala</i>	<i>Ficus religiosa</i> Linn.	<i>Arayal</i>	Bark
3	<i>Sadaphala</i>	<i>Ficus racemosa</i> Linn.	<i>Atti</i>	Bark
4	} <i>Lodhrayugma</i>	<i>Symplocos cochinchinensis</i> (Lour) ssp. <i>laurina</i> (Retz.) Nooteboom	<i>Paccotti</i>	Bark
5		<i>Symplocos racemosa</i> Roxb.	<i>Velutta paccotti</i>	Bark
6	} <i>Jambudvaya</i>	<i>Syzygium cumini</i> (Linn.) Skeels	<i>Naval</i>	Bark
7		<i>Syzygium</i> sp.	<i>Perum naval</i>	Bark
8	<i>Arjuna</i>	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	<i>Nirmarutu</i>	Bark
9	<i>Kapitana</i>	<i>Ficus arnottiana</i> (Miq.) Miq.	<i>Kallal</i>	Bark
10	<i>Somavalka</i>	<i>Acacia polyantha</i> Willd.	<i>Venkaringali</i>	Bark
11	<i>Plaksa</i>	<i>Ficus microcarpa</i> Linn.f.	<i>Itti</i>	Bark
12	<i>Amra</i>	<i>Mangifera indica</i> Linn.	<i>Mavu</i>	Bark
13	<i>Vanjula</i>	<i>Homonoia riparia</i> Lour.	<i>Vanji</i>	Root
14	<i>Priyala</i>	<i>Buchanania lanzan</i> Spreng.	<i>Mural</i>	Fruit
15	<i>Palasa</i>	<i>Butea monosperma</i> (Lam.) Taub.	<i>Plasu</i>	Bark
16	<i>Nandi</i>	<i>Toona ciliata</i> Roem.	<i>Ikana</i>	Bark
17	<i>Koli</i>	<i>Ziziphus mauritiana</i> Lam.	<i>Lanta</i>	Seed
18	<i>Kadamba</i>	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	<i>Katampu</i>	Bark
19	<i>Virala</i>	<i>Diospyros malabarica</i> (Desr.) Kostel.	<i>Panacci</i>	Bark
20	<i>Madhuka</i>	<i>Glycyrrhiza glabra</i> Linn.	<i>Irattimadhuram</i>	Root
21	<i>Madhooka</i>	<i>Madhuca longifolia</i> (Koenig) Mac Bride	<i>Ilippa</i>	Heartwood

Vanjula

Physicians of Kerala consider this as one of the synonyms of *vetasa*. *Vetasa* is of two types – *vetasa* (*vanji*) and *jalavetasa* (*attuvanji*). The famous translator of Astangahrdayam, P.M. Govindan Vaidyan has translated this as *vanji*. Ayurvedavisvakosam gives four meanings to this viz. *asokam*, *totukara*, *vanji* (*cural*) and *orilattamara*. Different lexicographers equate these terms with *Calamus rotang*, *Elatine verticillata*, *Salix caprea*, *Salix tetrasperma*, *Nauclea missionis* and *Humboldtia vahliana*. Commentator of Dhanvantari nighantu equates

vetasa with *Salix caprea* and *jalavetasa* with *Salix tetrasperma*. Indian Medicinal Plants (Kirtikar & Basu) give the Malayalam term *attuvanji* for *Humboldtia vahliana*.

In Kerala, for both *vanji* and *attuvanji* (*vetasa* and *jalavetsa* respectively), *Homonoia riparia* is being used.

Properties of Nyagrodhadi gana

This *gana* is intestinal astringent, cures ulcers and is union-promotive. It alleviates excessive fat, vitiated conditions of *pitta* and *rakta*, thirst, burning sensation and vaginopathy.

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STANDARDISATION OF *NISAKATAKADI KASAYA*

Anaghan, C. , Radhika, L.G., Thankamma, A. *

ABSTRACT

The efficacy of ayurvedic medicines depends upon the authenticity of the raw drugs, method of preparation etc. The available data is not enough in ascertaining the adulterants or the omission of costly/rare drugs in the preparations. In this paper an attempt has been made to standardise *Nisakatakadi kasaya*, a compound formulation of 8 drugs. Methods have been developed by TLC technique to detect the presence of each ingredient in the preparation.

Ayurveda, our ancient system of medicine has a rich heritage. Initially medicines consisted of only crude plants, which were administered along with chants. Later came combinations of herbs or preparations from a mixture of herbs, which had better therapeutic values¹. This led to different methods of preparation and finally, in the isolation of active principle from crude drugs. As these herbal medicines became more and more popular due to its fewer side effects and high therapeutic efficiency, commercialisation set in, and this led to a fast depletion in the availability of genuine drugs². This non-availability of genuine drugs in turn led to adulteration. The usage of substandard drugs in many cases led to the

production of ineffective and sometimes harmful medicines. This led to the necessity of standardisation of ayurvedic preparations of single drugs and formulations. Rigid quality control of raw drugs and finished products also became absolutely essential. In the dried state several herbs look alike, or can be made to look alike by artificial methods, such as colouring and flavouring. This necessitated the scientific examination of the sample for the characteristic ingredient by chemical methods and for characteristic histological features by microscopic examination. Ayurvedic pharmaceuticals have not been careful in maintaining specific physical characters such as colour, smell, appearance, taste etc. in their products. Thus it

* Drug Standardisation Unit, Ayurveda Research Institute, Poojappura, Thiruvananthapuram.

has become an absolute necessity to fix physico-chemical standards for single drugs and finished products on par with IP and BP which would provide necessary tools to enforcement agencies to check the quality of medicine.

In this paper an attempt has been made to standardise *Nisakatakadi kasaya*, a compound formulation of 8 drugs namely: -

1. *Nisa (Curcuma longa)*
2. *Kataka (Strychnos potatorum)*
3. *Amalaka (Emblica officianalis)*
4. *Paranti (Ixora coccinea)*
5. *Lodhra (Symplocos racemosa)*
6. *Bhadrika (Aerva lanata)*
7. *Saptacakra (Salacia oblonga)*
8. *Usira (Vetiveria zizanioides)*

Organoleptic characters of the formulation were determined. Methods have been developed to detect the presence of each of these drugs in the finished product.

Materials and Methods

Drugs required for the study were collected from the Pharmacy of Govt. Ayurveda College, Thiruvananthapuram. The raw drugs were cut into small pieces. 6 g of each were mixed together and was boiled with 16 times water and reduced to $\frac{1}{8}$ th concentration by volume. The pH value, specific gravity, solid content, sugar content and ash value of the *kasaya* were determined using standard methods (Table 1). Thin layer chromatographic technique was used for identification of samples in the formulation³. By this technique members of a group of similar substances are separated by a continuous redistribution between two phases,

Table No. 1

Sl. No.	Standards	Valucs
1.	pH	4
2.	Specific gravity	1.0217
3.	% of solid content (with respect to raw drug)	11.49
4.	Reducing sugar	0.196
5.	Total sugar	0.397
6.	Total ash	0.65
7.	Acid insoluble ash	0.1
8.	Water insoluble ash	0.427

one stationary and the other a mobile phase. A variety of attracting forces act between the stationary phase and the substance to be separated, resulting in the selective redistribution of the solute between these two phases. Thus the components of a mixture are compared by the R_f value of each ingredient with the corresponding spot obtained for the mixture in the same system. Alcohol extracts of the individual drugs were spotted on silica gel G plate with a capillary tube. The spots of the ethyl acetate extract of the *Nisakatakadi kasaya* were also applied on the plate with a capillary tube. Chromatogram was then developed by the ascending technique. UV and iodine vapours were used for detection. A number of solvent systems were tried for each drug and one which gave the best resolution was selected as the characteristic of the drug.

Results and Discussion

In thin layer chromatography alcohol extract of each single drug of *Nisakatakadi kasaya* and ethyl acetate extract of the *kasaya* were spotted in a previously activated silica gel G plate. Several solvent systems were tried and

Table No. 2

Sl. No.	Drug	Solvent system	Number of spot	Detection method	Colour of the spot	Rf value
1	<i>Nisa</i>	Chloroform:Acetic acid (9:1)	3	Visible	Yellow	0.50 0.71 0.91
2	<i>Kataka</i>	Benzene:Chloroform (1:1)	1	UV light	Bluish	0.30
3	<i>Amalaka</i>	Benzene:Chloroform (1:1)	1	Iodine	Brownish	0.83
4	<i>Paranti</i>	Benzene:Methanol:Acetone (4:5:5)	1	UV light	Light blue	0.25
5	<i>Lodhra</i>	Toluene:Ethyl acetate (97:3)	1	Iodine	Brownish	0.39
6	<i>Bhadrika</i>	Benzene:Chloroform (1:1)	1	UV light	Light blue	0.28
7	<i>Saptacakra</i>	Benzene:Chloroform (1:1)	1	Iodine	Brownish	0.16
8	<i>Usira</i>	Toluene:Ethyl acetate (97:3)	1	UV light	Bluish	0.63

the one which gave the best resolution was selected.

Nisa

In the case of *nisa*, the chloroform: acetic acid (9:1) system gave three visible yellow spots. These three spots obtained from the alcohol extract of *nisa* were present in the ethyl acetate extract of *kasaya*. Thus presence of these 3 spots in the *Nisakatakadi kasaya* indicate the presence of *nisa* in the *kasaya*. These 3 spots Rf (0.50, 0.71 and 0.91) characteristic of *nisa* in the solvent system [chloroform : acetic acid (9:1)] can be fixed as a standard.

Kataka and Bhadrika

Benzene : chloroform (1:1) was found to give best resolution, for these two drugs. Both gave a single spot in UV. *Kataka* gave a spot of Rf 0.3 and *bhadrika* gave a spot of Rf 0.28. These spots present in the alcohol extract of the drugs were present in the ethyl acetate extract of *kasaya* also. Thus these spots can be considered characteristic of these two drugs.

Amalaka and Saptacakra

Solvent system benzene : chloroform (1:1)

gave best resolution for the above drugs. Both gave a single spot in iodine vapours. *Amalaka* gave a spot of Rf 0.83 and *saptacakra* gave a spot of Rf 0.16. These two spots present in the alcohol extract of the two drugs were present in the ethyl acetate extract of *Nisakatakadi kasaya*. Thus the presence of these two spots in *kasaya* indicate the presence of these drugs in the *kasaya*.

Paranti

Alcohol extract of this drug in benzene: methanol: acetone (4:5:5) gave the best resolution, characterised by a single spot of Rf 0.25 in UV. This spot was present in the ethyl acetate extract of the *kasaya*, and this solvent system can be considered characteristic of the drug.

Lodhra and Usira

Solvent system toluene : ethyl acetate (97:3) gave the best resolution. A brownish single spot of Rf 0.39 was obtained for *lodhra* in iodine vapours. *Usira* gave a bluish spot of Rf 0.63 under UV light. These spots which were present both in the alcohol extract of the single

acetate extract of *Nisakatakadi kasaya*, can be considered characteristic of these drugs.

Conclusion

Kasaya are aqueous extracts of vegetable drugs which are the major components of many ayurvedic formulations. Scarcity of raw materials is one of the problems facing the ayurvedic pharmaceutical industry. In this study an attempt has been made to fix standards based on organoleptic characters and TLC methods, of which the latter is more advanced. The spots obtained in the silica gel G plate for each drug in the formulation, with a corresponding spot in the *kasaya* in a particular solvent system by detection methods like UV,

iodine etc. may be taken as the standard for that specific drug. Hence by this method it is possible to detect the presence of each drug in the finished product.

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PHARMACOGNOSTICAL STUDIES ON *SARACA ASOCA* (ROXB.) de WILDE.

Krishnan Nambiar, V. P., Jayanthi, A., Sabu, T.K., Rajendrakumar, K.*

ABSTRACT

Saraca asoca (Roxb.) de Wilde. is an important raw drug whose bark is used in large quantities in ayurvedic formulations. Pharmacognostic studies (ie. anatomy, palisade ratio, stomatal index, vein-islet number) of this plant are detailed in this paper. Propagation technology through seeds is also dealt with.

Introduction

Saraca asoca belonging to the family Caesalpiniaceae is known as *asokam* in Malayalam, *asoka* and *gatasoka* in Sanskrit and *asok* and *asoka* in Hindi. The officinal parts are bark, leaves flowers and seeds. Of these, the bark is mainly used in ayurvedic formulations like *Asokaristam*, *Asokaghrtam*, *Kaccoradi tailam* etc. (S.R. Iyer, 1983). The plant is distributed throughout India, in evergreen forests upto an elevation of about 750 meters and also cultivated.

The bark is bitter, astringent, sweet, refrigerant, anthelmintic, styptic, stomachic,

constipating, febrifuge and demulcent. It is useful in dyspepsia, fever, dipsia, burning sensation, visceromegaly, colic, ulcers, menorrhagia, metropathy, leucorrhoea and pimples. The leaves are depurative and their juice mixed with cumin seeds is used for treating stomachalgia. The flowers are considered to be a uterine tonic and are used in vitiated conditions of *pitta*, syphilis, cervical adenitis, hyperdipsia, burning sensation, haemorrhoids, dysentery, scabies in children and inflammation. The dried flowers are used in diabetes and haemorrhagic dysentery and seeds are used for treating bone fractures, strangury and vesical calculi (Warrier et al, 1996). Bark is used in

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several preparations related to female trouble (Tiwari, 1979). It is also used for internal piles, dysentery, biliousness, dyspepsia, colic, ulcers and pimples (Dastur, 1962).

Morphological description

A small to medium – sized evergreen tree somewhat erect, straight, trunk covered over with greyish to dark brown scabrous bark. Surface of the stem bark rough and uneven due to the presence of rounded or oval projecting lenticels. The branches numerous, spreading, somewhat drooping. Leaves alternate, abruptly pinnate, sessile, large, 30-40 cm long; beautifully pink coloured when young; stipules connate, interpetiolar; leaflets opposite, 4-6 pairs, 15-30 cm long, 3-5 cm broad, coriaceous with slightly wavy margin, lanceolate; flowers many, polygamous apetalous, yellowish orange turning to scarlet, sweet scented, in short laterally placed corymbose, axillary panicles; bract small, deciduous; bracteoles reddish, subpersistent; calyx petaloid; tube elongate, cylindric and closed enclosing a lobed disc; calyx lobes four, unequal, ovate to oblong, reddish imbricate; petals absent; stamens usually seven, but may vary from 5-8 exserted; filaments long, filiform about 2-3 times the length of the calyx tube. Anthers reniform and versatile dehiscing longitudinally. Ovary superior, stipitate, stipe adnate below to one side of the disc, unicellular, many ovuled, ovules in marginal placentation; style long, filiform; stigma small and capitate; pod flat, oblong, coriaceous or almost woody; 6-12 cm long, and 2.5-4 cm broad; tapering at both ends and having continuous cavity containing 4-8 large seeds; seeds obovate or orbicular, compressed, greyish, smooth and non endospermic. (Gamble, J.S., 1967 and Narayana Aiyer & Kolammal, 1960) (Fig.I).

Materials & Methods

Plant materials for macro and microscopic

observations were collected from different parts of Kerala and fixed in F.A.A. Seeds were collected for propagation studies. For anatomical works stained hand sections and macerated materials were examined under compound microscope. Vein-islet number, stomatal index and palisade ratio were found out using leaf samples treated in 5% KOH solution. For determining stomatal index, ten epidermal peelings of a fresh leaf were taken from lower surface and ten counting were recorded from ten different areas of each piece (ie. number of stomata as well as epidermal cells per 1 sq.mm area). Stomatal index value is then calculated by using the formula $\frac{E}{E+S} \times 100$ where E and S stand for the number of epidermal cells per unit area and the number of stomata respectively (Salisbury, 1928). The values are represented graphically (Fig.VI). Palisade ratio was determined by using 5 fresh leaves. From each of these, four pieces (ie. one from base, one from apex, one from margin and one from centre) were selected. After clearing, washing and staining they were mounted in glycerine. From these 100 readings were recorded, taking 5 counts from each piece. Average of these values is the palisade ratio. The values are represented graphically (Fig. VII). The report that "number" of palisade cells per unit area increases successively from base to apex, with the ratio always remaining constant (Zornig & Weiss, 1925) holds true in this species also. The vein-islet number is calculated by counting the minute areas of photosynthetic tissue encircled by the ultimate division of the conducting strands per 1 sq.mm. of cleared leaf samples taken from 5 different leaves. The values are represented graphically (Fig. VIII). All these numerical values may be considered as a diagnostic constant and will help for identifying the plant species.

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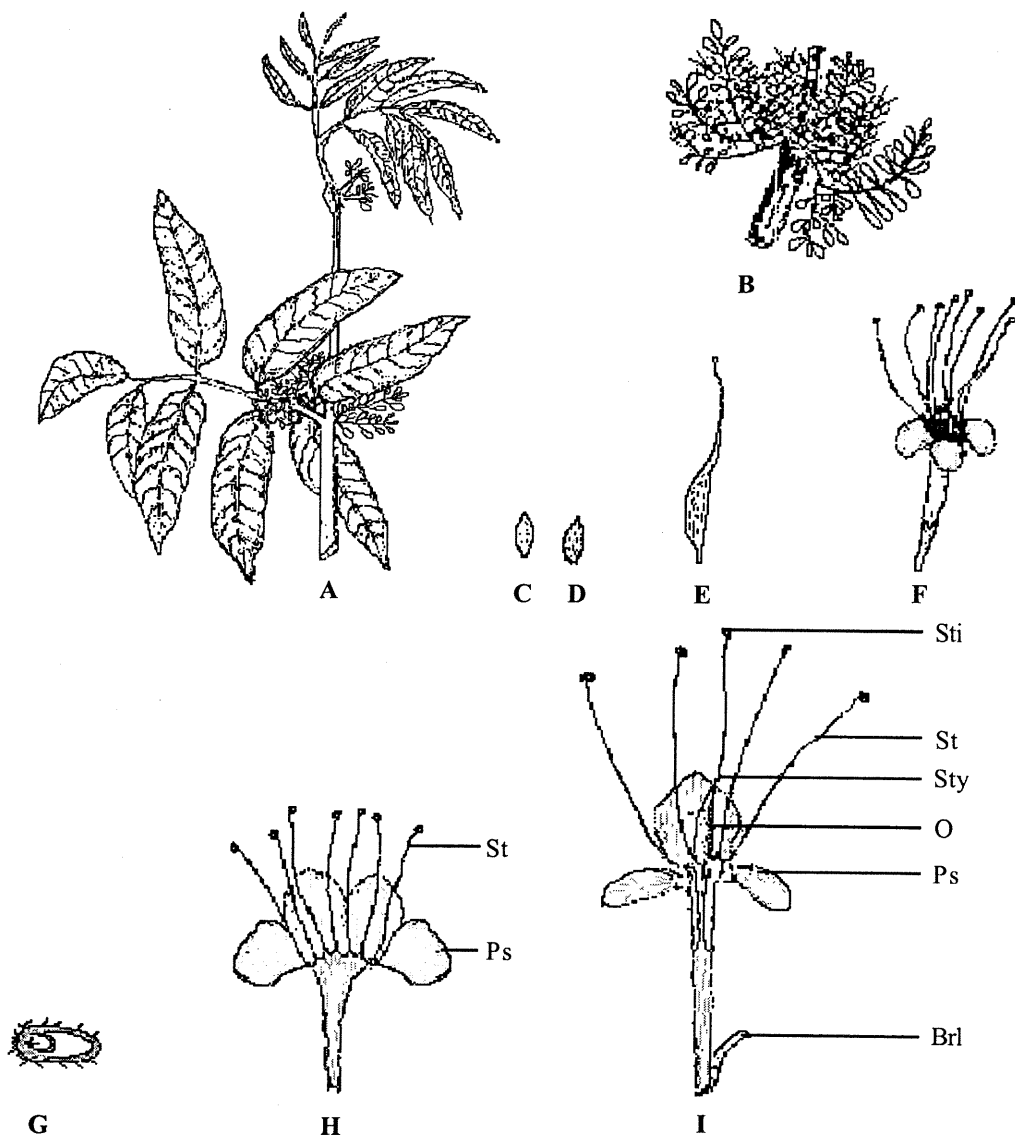


Fig. I A - I *Saraca asoca* (Roxb.) de Wilde. A) Habit B) Inflorescence C) Bract D) Bracteole E) Gynoeceium F) Single flower G) Ovary C.S. H) Petaloid calyx split opened I) Flower L.S.

Brl. Bracteole; O. Ovary; Ps. Petaloid sepal; St. Stamen; Sti. Stigma; Sty. Style.

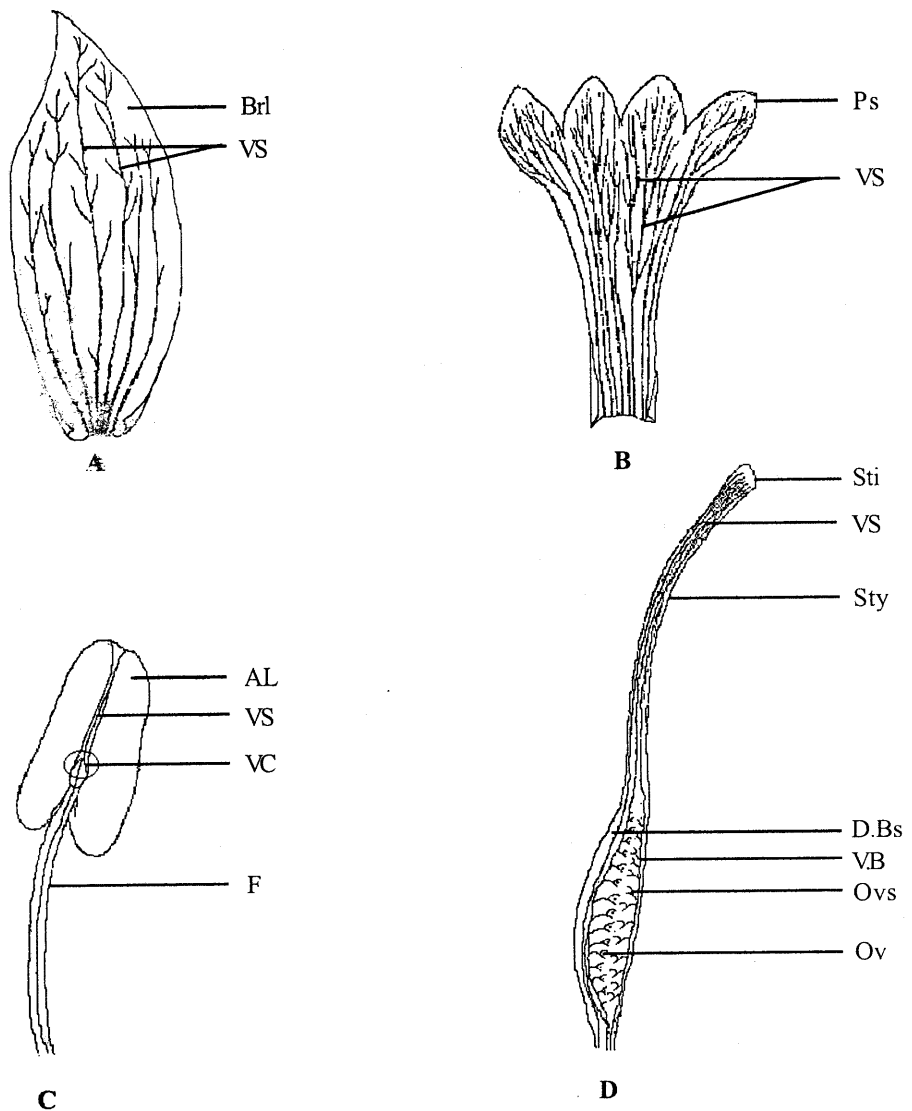


Fig. II A - D *Saraca asoca* (Roxb.) de Wilde. Floral Vascular Supply A) Bracteole (x115) B) Petaloid sepal (x100) C) Stamen (x115) D) Gynoecium (x115).

AL. Anther lobe; **Brl.** Bracteole; **D.Bs.** Dorsal bundle; **F.** Filament; **Ov.** Ovule; **Ovs.** Ovular supply; **Ps.** Petaloid sepal; **Sti.** Stigma; **Sty.** Style; **V.B.** Ventral bundle; **VC.** Vascular complex; **VS.** Vascular supply.

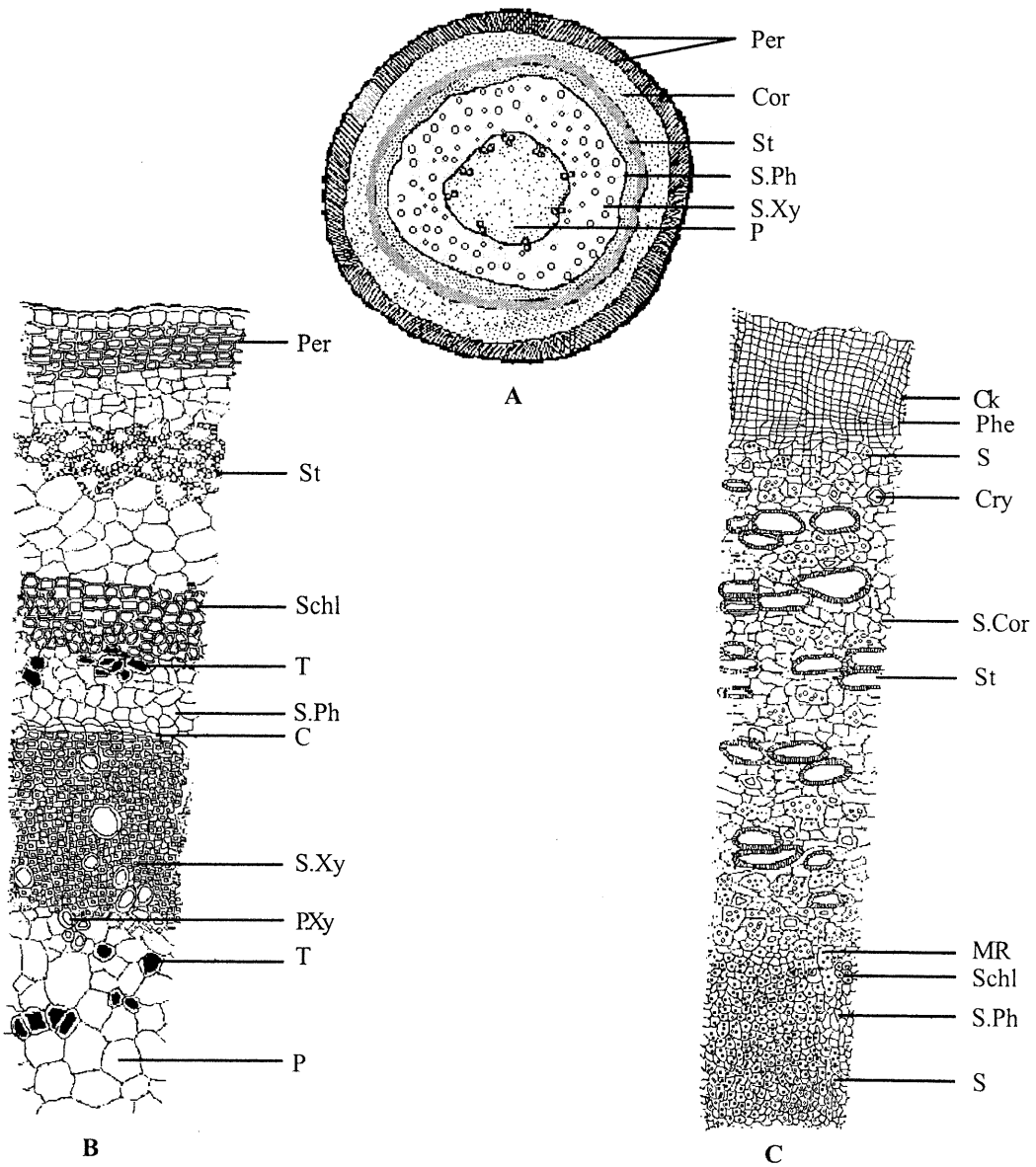


Fig. III A - C *Saraca asoca* (Roxb.) de Wilde. A) T.S. of Stem - diagrammatic (x 50) B) A portion enlarged (x 115) C) A portion of bark enlarged (x 115).

C. Cambium; Ck. Cork; Cor. Cortex; Cry. Crystal; MR. Medullary ray; P. Pith; Phe. Phellogen; Per. Periderm; Pxy. Primary xylem; S. Starch grain; Scor. Secondary cortex; Schl. Schlerenchyma; S.Ph. Secondary phloem; St. Stone cell; S.Xy. Secondary xylem; T. Tannin.

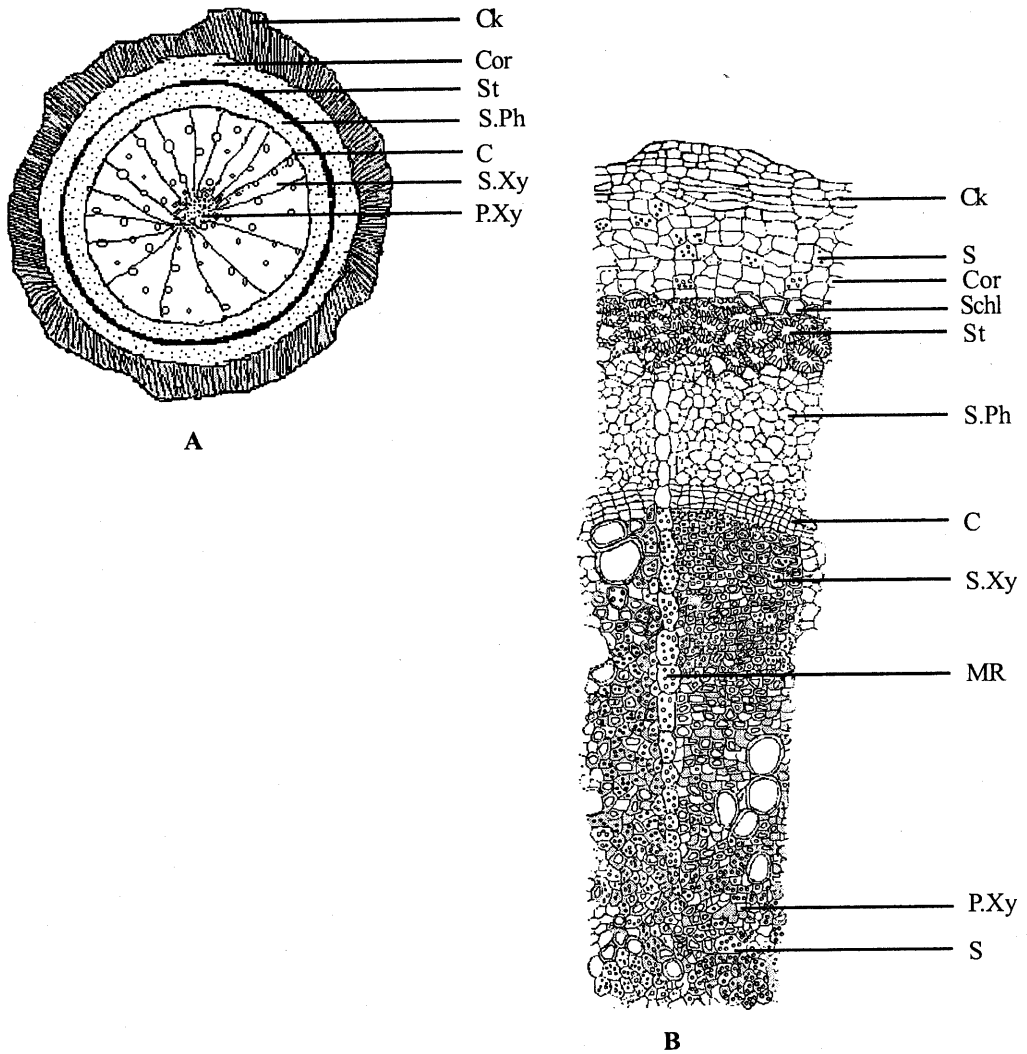


Fig. IV A - B *Saraca asoca* (Roxb.) de Wilde. **A)** T.S. of Root - diagrammatic (x 50) **B)** A portion enlarged (x 115).

C. Cambium; **Ck.** Cork; **Cor.** Cortex; **MR.** Medullary ray; **Phe.** Phellogen; **P.Xy.** Primary xylem; **S.** Starch grain; **Schl.** Schlerenchyma; **St.** Stone cell; **S.Ph.** Secondary phloem; **S.Xy.** Secondary xylem.

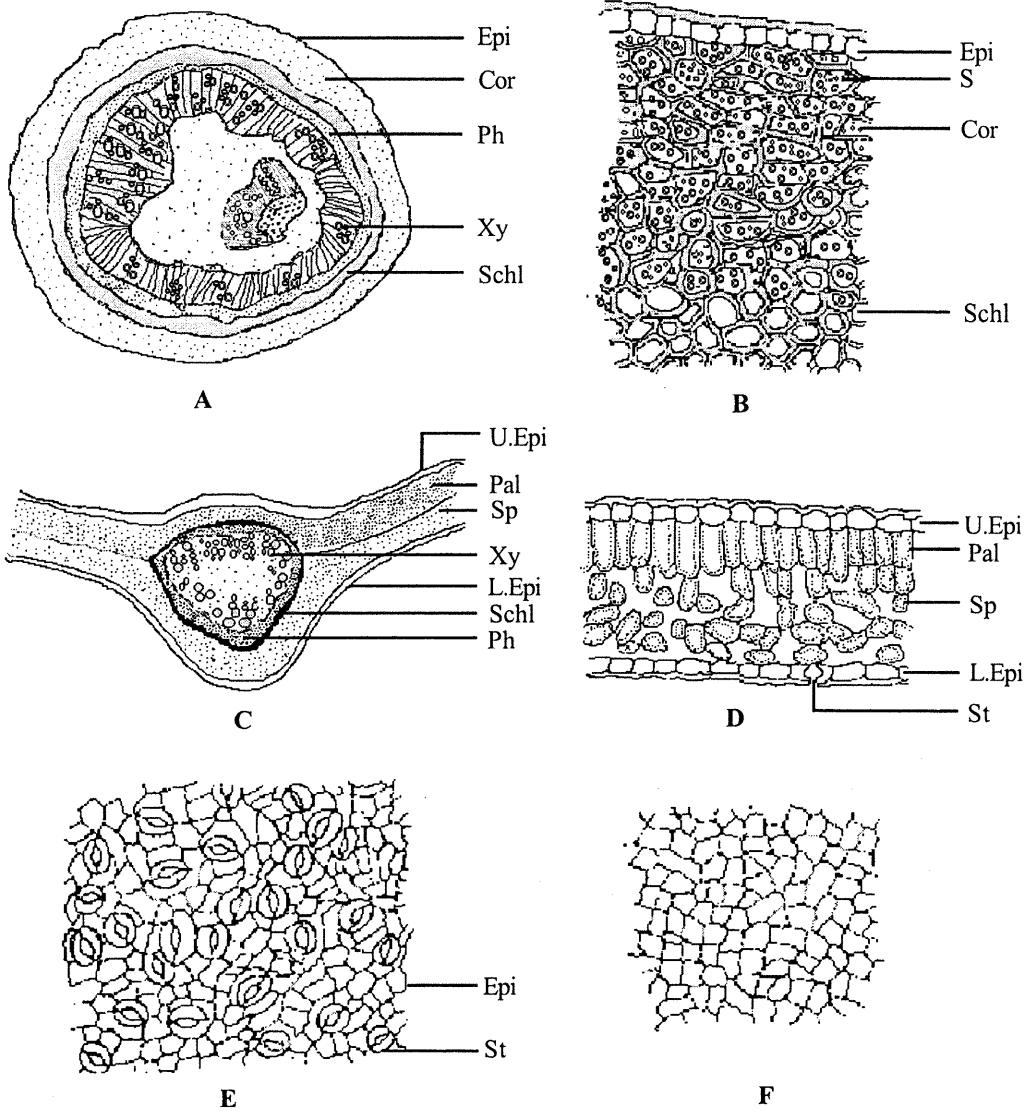
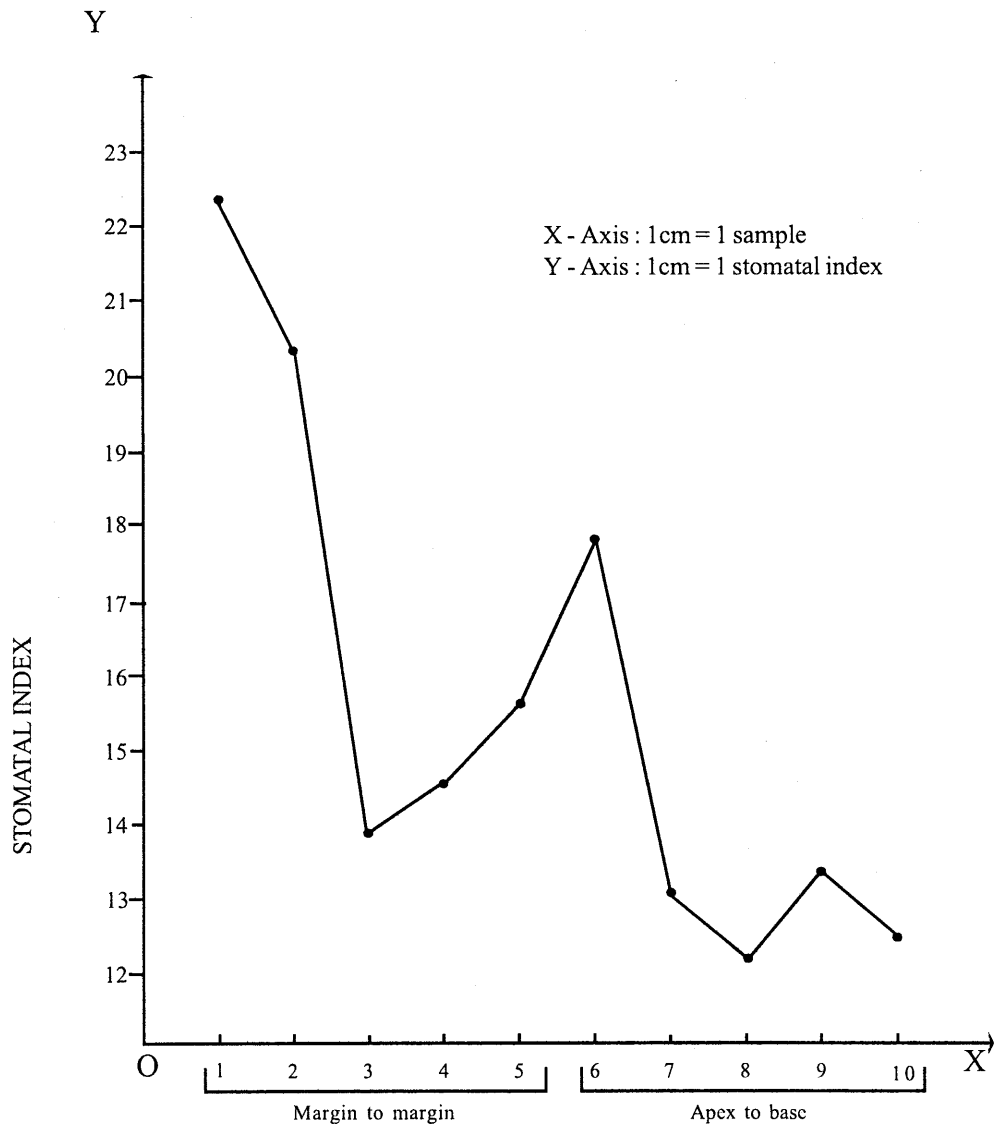


Fig. V A - F *Saraca asoca* (Roxb.) de Wilde. **A**) T.S. of Petiole - diagrammatic (x 50) **B**) A portion of Petiole enlarged showing epidermis and cortex (x 210) **C**) T.S. of lamina through midrib (x 115) **D**) Detailed T.S. of lamina (x450) **E**) Lower epidermis (x210) **F**) Upper epidermis (x210).

Cor. Cortex; **Epi.** Epidermis; **L.Epi.** Lower epidermis; **Pal.** Palisade; **Ph.** Phloem; **S.** Starch grain; **Schl.** Schlerenchyma; **S.P.** Spongy parenchyma; **St.** Stomata; **U.Epi.** Upper epidermis; **Xy.** Xylem.

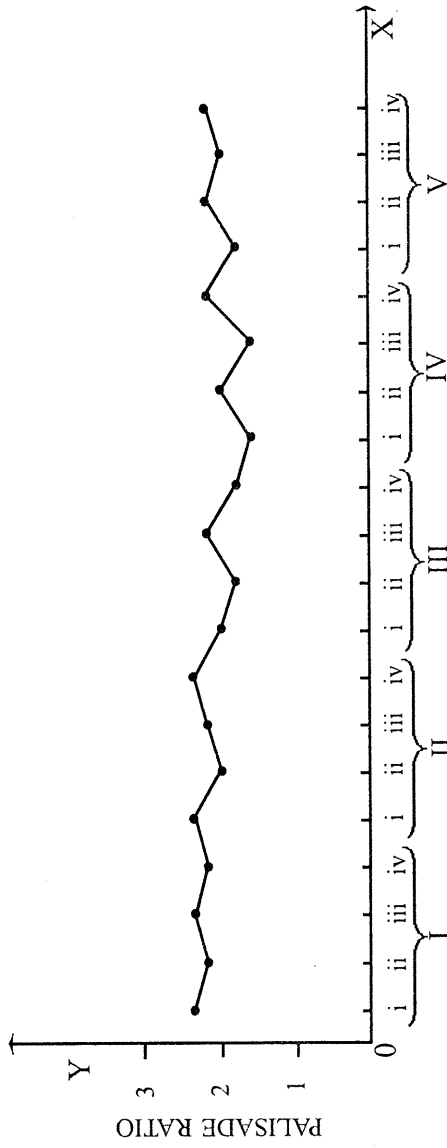
Fig. VI *Saraca asoca* - Stomatal index



10 SAMPLES FROM SINGLE LEAF

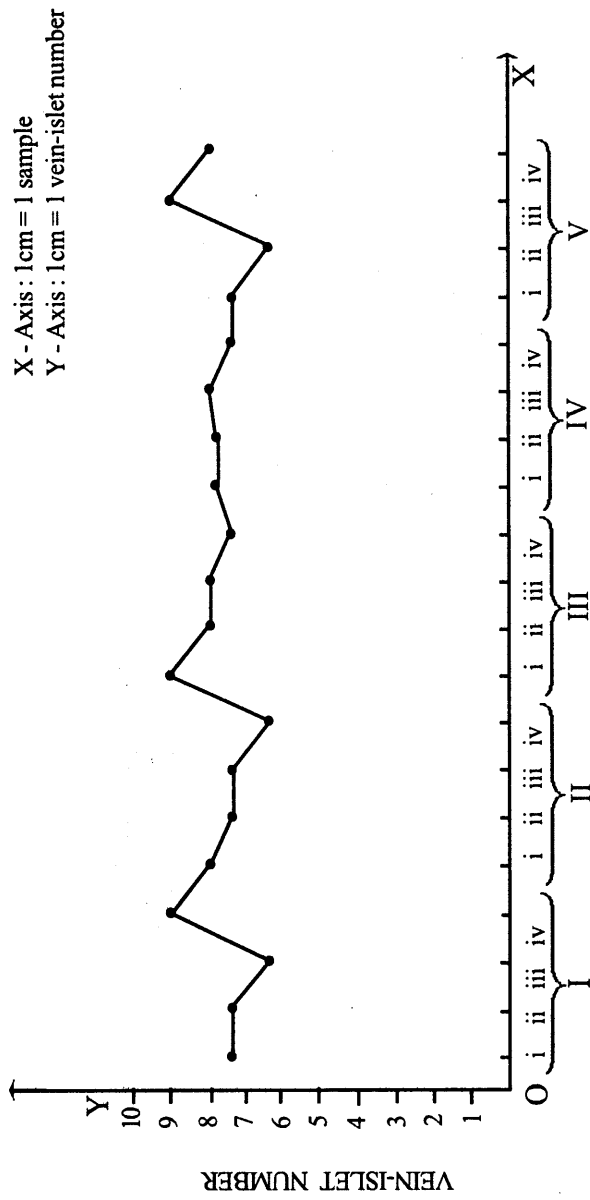
Fig. VII *Saraca asoca* - Palisade ratio

X - Axis : 1cm = 1 sample
 Y - Axis : 2cm = 1 palisade ratio



20 SAMPLES FROM 5 DIFFERENT LEAVES

Fig. VIII *Saraca asoca* - Vein-islet number



20 SAMPLES FROM 5 DIFFERENT LEAVES

Table I: *Saraca asoca* - Stomatal index

I				II				III				IV				V			
No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index		
1	7	3	30.00	11	2	15.38	13	1	7.14	10	2	16.66	8	4	33.33				
2	11	2	15.38	10	3	23.07	14	2	12.5	13	2	13.33	13	2	13.33				
3	9	2	18.10	9	3	25.00	14	2	12.5	14	1	6.66	14	2	12.50				
4	11	2	15.38	9	4	30.72	12	2	19.2	12	2	14.20	15	2	11.76				
5	12	3	20.00	13	1	7.14	15	1	6.25	12	3	20.00	13	2	13.33				
6	7	9	36.36	10	2	16.66	10	3	23.07	10	1	9.09	15	1	6.25				
7	9	2	18.10	11	2	15.38	11	1	8.33	8	4	33.33	16	2	11.11				
8	8	3	27.27	8	3	27.3	11	2	15.38	16	1	5.88	10	3	23.07				
9	8	3	27.27	10	2	16.66	10	3	23.07	11	2	15.38	10	3	23.07				
10	10	2	16.67	9	3	25.00	10	2	16.66	13	1	7.14	12	1	7.69				
Average stomatal index			22.45				20.23				13.91				14.17				15.53

VI				VII				VIII				XI				X			
No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index	No. of Epi. cells	No. of Stom- ata	Stom- atal Index		
1	6	3	33.33	19	1	6.66	15	1	6.25	8	2	20.00	10	2	16.66				
2	8	2	20.00	11	2	15.38	8	4	33.33	9	2	18.18	11	1	8.33				
3	11	1	8.33	14	1	6.66	10	1	9.09	13	2	13.33	11	2	15.38				
4	12	1	7.69	11	1	8.33	11	2	15.38	8	1	11.11	10	1	9.09				
5	10	3	23.07	10	2	16.66	13	1	7.14	10	1	9.09	9	2	18.18				
6	11	1	8.33	12	2	14.20	16	2	11.11	11	1	8.33	12	1	7.69				
7	9	3	25.00	11	1	8.33	13	1	7.14	10	2	16.66	12	1	7.69				
8	13	2	13.33	8	3	27.30	13	2	13.33	9	1	10.00	10	2	16.66				
9	10	2	16.66	8	2	20.00	12	2	14.20	10	2	16.66	11	1	8.33				
10	7	2	22.22	12	1	7.69	18	1	5.26	10	1	9.09	10	2	16.66				
Average stomatal index			17.80				13.12				12.22				13.32				12.47

Range : 12.22 - 22.45 Mean : 15.5 Standard deviation : 7.78

Table II : *Saraca asoca* - Palisade ratio

Leaf No	I				II				III				IV				V							
	i	ii	iii	iv	i	ii	iii	iv	i	ii	iii	iv	i	ii	iii	iv	i	ii	iii	iv				
No. of Pieces	2	2	3	2	3	1	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2	3	3	3
Readings	2	2	2	2	2	2	3	2	1	2	3	2	2	2	1	2	1	1	2	1	2	2	2	3
	2	2	2	3	3	3	2	3	2	2	2	1	1	2	1	3	1	2	1	3	1	1	1	2
	3	2	3	2	2	2	2	2	2	2	1	2	2	2	2	3	2	2	2	3	2	2	2	1
Average	2.4	2.2	2.4	2.2	2.4	2	2.2	2.4	2	1.8	2.2	2	1.6	2	1.6	2.2	1.8	2.2	2	2.2	1.8	2.2	2	2.2
Total average	2.3				2.25				2				1.85				2.05							

Range : 1.85 - 2.3., Mean : 2.09., Standard deviation 0.62.

Table III : *Saraca asoca* - Vein-islet number

Leaf No	I				II				III				IV				V			
	i	ii	iii	iv	i	ii	iii	iv	i	ii	iii	iv	i	ii	iii	iv	i	ii	iii	iv
No. of Pieces	6	7	5	13	9	6	7	5	13	9	6	7	9	7	8	8	8	5	9	10
Readings	7	6	7	6	7	7	6	7	6	7	7	6	7	9	8	7	9	7	8	8
	9	7	8	9	6	9	7	8	9	6	5	7	8	7	5	9	7	8	9	6
	7	9	7	8	8	7	9	7	8	8	13	6	9	8	9	7	6	7	6	7
	8	8	5	9	10	8	8	5	9	10	9	7	6	8	10	6	7	5	13	9
Average	7.4	7.4	6.4	9	8	7.4	7.4	6.4	9	8	8	7.4	7.8	7.8	8	7.4	7.4	6.4	9	8
Total average	7.55				7.3				8.1				7.75				7.7			

Range : 7.3 - 8.1., Mean : 7.68., Standard deviation 1.68

Floral vasculature

Bracteole

Seven vascular strands enter each bracteole and produce branches near about the middle. The central strand is the longest reaching near the tip of the bracteole (Fig.II A).

Petaloid sepal

Eight vascular strands traverse through the thalamus tube and start branching near about the middle. All the four petaloid sepals are supplied by the innumerable branches produced from them (Fig.II B).

Stamen

Each stamen has a long filament traversed by a single unbranched vascular strand. At the region of the connective this strand produces a few branches which supply the anther lobes (Fig. II C).

Pistil

The ovary is monocarpellary and unilocular. Two dorsal bundles and two ventral bundles traverse the ovary wall. The outer ones of each central and dorsal bundles are unbranched and they straight away supply the style and stigma. The inner dorsal and ventral bundles produce branches supplying the ovules. They traverse through the style without producing any branch and ultimately end in the stigma (Fig. II D).

Anatomy

Stem

The transverse section of young stem is somewhat circular in outline. The surface shows presence of small rounded to oval projecting

lenticels. In young stem bark is very thin. Epidermis is single layered with thin cuticle. Below the epidermis 5-6 layers of cork are seen. Cortex is 12-16 layered, composed of thin walled parenchyma cells. In the middle region of cortex 3-5 layers of stone cells are clearly visible. Just above the phloem region 4-6 layered schlerenchymatous ring is seen. Phloem region is very distinct and contains tannin cells. Cambium is very clear and is 2-3 layered. Xylem region is composed mostly of trachieds and a few vessels. Primary xylem is prominent. There is a prominent pith, composed of thin walled parenchyma and many of the pith cells contain polygonal calcium oxalate crystals (Fig. III A&B).

In Kerala the officinal part is mainly the bark. Hence, a detailed histology of bark is given below. In older stem the outermost layers of bark form the cork, consisting of 20-25 layers of narrow slightly tangentially elongated cells. The external surface is rough and uneven due to the presence of prominent rounded to oval lenticels. The outer row of cork cells is much compressed and their cell walls are wavy. The cork region is reddish brown in colour. Phellogen is composed of a single row of narrow tangentially elongated thin walled cells. Interior to this cork region there is a large zone of secondary cortex which is composed of fairly large thin walled polygonal cells and several prominent group of stone cells. The stone cells are elongated and may be considered as an identifying character. Most of the parenchymatous cells are filled with few small rounded starch grains and in certain other cells polygonal crystals of varying size are also seen. The inner bark consists of phloem tissues, bast fibers and medullary rays. This region constitutes half of the thickness of the entire bark. The phloem parenchyma cells are small polygonal

and thin walled. Alternating these parenchymatous elements, small groups of fiber cells are seen arranged tangentially. Some of the phloem parenchyma cells contain small polygonal crystals of calcium oxalate and few other cells contain small rounded starch grains. Inner most row of phloem is mainly composed of thin walled parenchyma cells. Narrow and mostly uni or biseriate medullary rays are very distinct in the phloem region but get broadened much towards their distal end. The cells are larger than the adjoining parenchyma cells. Most of them contain crystals of calcium oxalate and starch grains (Fig. III C).

Root

In transverse section the root appears somewhat circular in outline. The outer most zone is cork, composed of 8-10 layers of tangentially elongated thick walled cells. Phellogen is not distinct. Inner to the cork region, secondary cortex having two distinct zones are seen. The upper zone consists of 5-7 layers of thin walled parenchyma cells, some of them containing few small rounded starch grains. Below this parenchymatous zone 3-5 layers of mechanical cells are distinctly seen, of these the outer layer is schlerenchymatous and the inner layers are stone cells. Following this supporting region is a broad zone of primary and secondary phloem. The cells are parenchymatous, thin walled and polygonal. 4-6 cambial layers are very prominent below the bast zone. In secondary xylem region trachieds, vessels and parenchyma cells are arranged in a peculiar manner i.e. xylem parenchyma and trachieds are in alternating patches. Vessels are very large and few in number. Parenchymatous cells are filled with small rounded starch grains. Uniseriate medullary rays are very distinct and extended to the phloem region. The ray cells in

the secondary xylem region are filled with starch grains. Exarch primary xylem groups are seen towards the centre which are in a line with the medullary rays (Fig. IV A&B).

Petiole

In T.S., the petiole appears almost circular in outline. Epidermis is single layered and devoid of any trichomes. Cuticle is thick. Cortex is composed of thick walled parenchymatous and schlerenchymatous cells. Parenchymatous cells are rich in small rounded starch grains. Schlerenchymatous layers form a ring above the phloem. Secondary phloem and xylem are also seen in a ring. Inner to this vascular ring a parenchymatous zone is visible. Leaf trace bundles are also distinctly seen (Fig. V A&B).

Leaf

T.S. of leaf shows common dicotyledonous characters. Epidermis is single layered. Mesophyll consists of single layered palisade multilayered spongy tissue with intercellular spaces. In the midrib region vascular bundle is encircled by a schlerenchymatous ring. In this species the upper and lower epidermal cells are polygonal in shape and their walls are slightly wavy. Stomata are of ranunculaceous type (Fig. V C-F).

Propagation

The wildlings collected from Wynad, Kuttur (Trichur), Mezhatthur (Palakkad) were grown in our nursery for out planting. The seeds collected from seed trees were germinated on beds 3m x 1m x $\frac{1}{3}$ m. The seeds were soaked in cold water for 24 hrs. They were then buried 1.5 cm deep in the soil. The germination conforms to epigeal type. Germination commences after four weeks and is continued

upto 6 weeks. 97% of the seeds gave rise to seedling. Rarely 2-3 seedlings were also produced from each seed. Three leaved seedlings were transplanted into polythene bags and pots. As the seeds gave a good percentage of germination, no vegetative propagation trials were conducted. The seedlings as well as the

wildlings were out planted and their growth performance was studied.

Adulteration

The drug is widely adulterated with the bark of *Polyalthia longifolia* Hook.f & Thoms. The statement given below will serve to distinguish the right drug from the adulterant.

<i>Saraca asoca</i>	<i>Polyalthia longifolia</i>
1. Medium sized evergreen tree.	Evergreen tree.
2. Leaves alternate, subsessile and abruptly pinnate, <u>stipules</u> connate.	Leaves narrow, lanceolate, alternate, simple, undulate, penninerved, distichous, <u>stipules absent</u> .
3. Orange red, apetalous flowers are in dense corymbose.	Flowers green, axillary or terminal, leaf opposed or below the leaves on the young or older woods.
4. Calyx tube elongate, lobes petaloid, unequal and four in number.	Sepal free, subimbricate.
5. Petals absent.	Petals six, in 2 seriate, elongate, flat or inner vaulted, torus convex.
6. Stamens usually seven but may vary from 5-8. Filaments long, filiform, anthers versatile.	Stamens numerous, connate, anthers extrose.
7. Ovary superior, style long, filiform, stigma small, capitate and ovules many on marginal placentation.	Ovary superior, apocarpous indefinite, style oblong, ovules 1-2, erect on basal placentation.
8. Fruit a dehiscent, flat oblong pod, with 4-8 large seeds.	Fruit an aggregate of berries.
9. Surface of the stem bark is rough and uneven due to the presence of many rounded or oval projecting lenticels.	Surface of the stem bark is comparatively smooth with small lenticels.
10. The outer rind can be easily scraped.	The outer rind cannot be easily scraped.
11. Several prominent groups of characteristic stone cells present in the secondary cortex.	Several groups of sclereids are present in the secondary cortex. Characteristic stone cells are absent.

Saraca asoca

Polyalthia longifolia

12. Starch grains are comparatively few in many of the parenchyma cells.	Most of the parenchyma cells are highly packed with starch grains.
13. Hexagonal calcium oxalate crystals of varying sizes are present in many cells.	Calcium oxalate crystals absent.
14. Vein-islet number is 7.68.	Vein-islet number is 1.
15. Palisade ratio is 2.09.	Palisade ratio is 6.85.
16. Stomatal index is 15.5.	Stomatal index is 18.1.

Result & discussion

Ayurvedic industries are facing the serious problem of adulteration of this raw drug. This will certainly affect the quality and effectiveness of the finished product. One can easily detect the correct raw drug from the adulterant based on the macro and microscopic observations (ie. morphological, anatomical and numerical values like stomatal index, palisade ratio and vein-islet (Table I, II & III) already dealt with. Unscientific extraction of the bark will lead to the total destruction of the plant. This can be avoided by retaining the innermost tender region, while extracting the bark.

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A PRAGMATIC APPROACH TO THE UPDATING OF AYURVEDA*

Warrier, P.K. and Murali, T.S.**

ABSTRACT

Ayurveda is one of the major ancient sciences of India. The very fact that it still remains a vital health-care system shows its viability and inherent strength. It has imbibed the trends of the times as it evolved through the ages. The present times demand an objective perspective even for ethno-specific knowledge for it to be understood and accepted in the changing global scenario. This is the justification for making efforts for updating ayurveda. While doing so, care should be taken to make selection of appropriate tools and methodologies. An attempt is made here to consider a few specific examples in the clinical and pharmacological aspects of ayurveda. The employment of modern techniques and protocols are essential in any effort to update. But at the same time, it is to be stressed that the axiomatic framework comprising the essential philosophical fundamentals of the traditional system needs to be retained.

Introduction

It goes without saying that any system of knowledge needs to be updated constantly in order for it to remain viable and suitable to changing times. The very fact that the traditional Indian science of ayurveda is still a very popular health care system, in itself, signifies its inherent strength and adaptability. But, that does not rule out the need for making further efforts.

Having said that, we may consider the

question of the purpose of making such efforts. Because, a clearly defined objective will only help in deciding the appropriate operational parameters. The purpose of updating the ancient science is to further strengthen its own inherent capabilities rather than to make comparative studies. While doing that, the most beneficial results will accrue if ethno-specific principles, relevant parameters and appropriate tools and methodologies are employed. Otherwise, we may end up with counterproductive results. Here

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again, it may be mentioned, within parenthesis, that this philosophy need not necessarily deprive a modern scientist of his opportunity to make use of his special skills and knowledge for the purpose. What is essential is to realise that the approach should necessarily have its beginning from within the gamut of the ayurvedic system rather than from without.

The ayurvedic system has several operational levels of knowledge. Many of them are philosophical in nature and they establish the fundamental principles based on which the application part of ayurveda has developed many offshoots. At the application level, ayurveda has two equally important components; clinical related and pharmacy related.

Clinical related aspects

As regards the updating methodology in the case of clinical aspects, the most appealing and readily appreciated approach will be to make comparative studies with respect to drugs and/or ailments with a view to ascertaining traditional knowledge. But, from a pragmatic point of view, this may yield only results of incidental value and passing interest. Very often the methodologies and tools being used in this manner are adapted from the modern science, lock, stock and barrel. This is fraught with some inherent problems of mismatch. The classical texts are essentially records of individual and collective experiences. They are holistic in their vision, subjective and functional in their approach and integrative in their technique. Attempting one-to-one correlation with the modern methods, which are fragmented in vision, empirical in approach and Cartesian in technique, may give rise to issues of non-compatibility if not done in a judicious manner. To say this is not to

reduce in any way the importance of the many comparative clinical studies being carried out by several groups. The idea is only to suggest that the absence of apparent one-to-one correlation between two different systems need not necessarily be construed as indicating the validity or otherwise of one system in comparison to the other.

There is, of course, the possibility of taking up classical texts in their entirety of philosophy and application, for further studies. It is sure to offer fresh insights into the principles and practices of the system. There is, indeed, sufficient scope for this approach, in contrast to the stereotyped and rigid course that it has taken in recent times. Two specific examples may be mentioned here, where such efforts have started yielding encouraging results. The first is the application of classical ayurvedic knowledge, in its own terms, for the purpose of pain and palliative care of terminally afflicted cancer patients. This was a joint venture where conventional allopathic procedures were followed for pain control and a classical ayurvedic formulation was employed for managing morphin induced conditions of constipation. The very encouraging results obtained from the joint study made by following a standard experimental protocol¹ have enabled us to establish reliable procedures for improving the quality of life of terminally ill patients as part of a pain and palliative care activity. Yet another example is a recent attempt to make in-depth studies of all available classical treatises on rheumatoid arthritis for the purpose of collating and updating the classical methodology. Here again, modern methodologies are being adapted, particularly for setting up protocols etc. It is anticipated that the project, which is in its

preliminary stage, will yield tangible results. These examples are cited as attempts intended to enhance the inherent strength of the ayurvedic system.

Pharmacy related aspects

The scene of ayurvedic pharmacy has undergone drastic changes and updating in the past half a century, primarily because of its industrialisation. The classical texts envisage a medicine to be prepared by the physician or occasionally even by the patient himself under the supervision of the physician. They had better unison in their interests under the then prevailing socio-economic and cultural conditions. But presently, the medicine manufacturer, the retailer, the physician and the patient are all different entities with varying areas of interest. That is precisely why organised efforts for standardisation become imperative. Here, the classical texts do not help us much. Because, they have not anticipated the kind of degradation and degeneration that have occurred in our social milieu. Thus, it appears that the system has to necessarily adapt modern methods and techniques to update the quality control procedures.

There are basically three aspects to the requirement of updating as far as the pharmaceutical aspect of ayurveda is concerned. They refer to the quality control of raw materials, the control of processing and the quality assurance of the finished products.

Raw material control

About 80% of the ayurvedic raw materials come from the vegetable kingdom. The remaining is of either animal or mineral origin. But none of them should be of synthetic origin².

Thus, the approach to quality monitoring has to be, evidently, multi-pronged. The conventional practices have been based on what can be described as "collective traditional wisdom". The need of the time is to establish procedures which are more objective and rigorous in nature. Such procedures will include testing for organoleptic, botanical and phytochemical aspects. Moreover, looking for foreign matter including pesticide residue etc. should also be there. The basic principles, procedures and laboratory techniques are comprehensively presented in a recent compilation brought out by the Regional Research Laboratory, Jammu³. The application of thin layer chromatography (TLC) is a very useful tool in this field. The standard TLC profiles of a variety of raw herbs are already documented⁴. Similarly the Bureau of Indian Standards (BIS) of the Government of India has published several monographs specifying the quality standards and the required chemical procedures for testing the quality of a variety of ingredients like ghee, oils, milk, saffron, honey etc⁵. They specify standard values for several factors like acid value, moisture content, ash value, saponification and iodine values etc. These procedures require the standard analytical facilities of a chemical/botanical laboratory and services of a couple of chemistry/botany graduates. It may incidentally be mentioned here that some of the basic chemical^{6,7} characteristics of numerous drugs have also been reported as also the botanical illustrations and classical references⁸. Two very recent publications^{9,10} can be employed as very useful reference manuals in this regard.

In-process aspects

As regards the in-process aspects, the official Ayurvedic Formulary of India¹¹ lists more than 20 categories of dosage preparations. The

medicine processing is one area where much updating has already taken place, despite the product variety and process complexity. Wooden vats have been replaced by food grade stainless steel vessels, earthen furnaces by electric muffle furnaces, sun drying by controlled electric or steam drying, fire wood by steam boiling etc. These are just a few examples. The basic objective of all such innovative steps is to achieve the philosophical aims set by the classical texts by employing modern techniques. Just one example can be cited. The texts often refer to *mrdivagni* as the temperature of processing. Since we know that the ancient practitioners were also cooking the herbs in water at boiling temperature, which we know is 100°C, we also design equipments to remain within this limit. That means, we can use steam at appropriate pressure as a source of heat for boiling. But, it may rule out the possibility of speeding up the process by using thermic fluids or by pressure-cooking because of their tendency to hike the operating temperature. There are similar other parametrical limits. What can profitably be done is to make use of a computer to generate a quantified check-list for implementing appropriate process control measures. The actual control, however, may have to be done by human intervention, to a great extent.

The dosage presentation is another important area where efforts to update will become important. The liquid *kvatha*, which are a very common dosage form in the Kerala tradition, is invariably very bitter in taste and quite cumbersome to handle. The present generation is averse to its use. Efforts are afoot to convert them into the form of machine aided tablets. The *kvatham* can be prepared as per the traditional practice and then instead of bottling at that stage, it can be vacuum evaporated, and

punched with the aid of IP recognised excipients. The tablets can then be blister packed. It is to be feared that if such a measure is not adapted, the very vital form of *kasaya* may become defunct in the long run. Tableting of conventional hand rolled pills also is another instance where hygiene and shelf life are improved. Similarly, encapsulation of incinerated *bhasma* will help in correct dosage delivery. In such attempts, several pharmaceutical procedures for ascertaining the disintegration time, strength, moisture permeability of blistering foil, stability studies, etc. must be adapted. Yet another important aspect is the need for quantifying and adapting the appropriate kind of preservatives as a measure of updating ayurvedic medicine processing. Incidentally, a matter of topical concern may also be cited. It is imperative that efforts should be made to frugalise the use of raw materials in view of the fast depleting natural resources. Classical physics says that when solids are reduced in size, the surface area increases. Thus, if the raw herbs are made smaller, the contact area and consequent extraction will increase. Can this principle be made use of for rationalising the use of raw drugs? Such a move will have to meet with the approval of the statutory authorities. Using solvent extraction may not be an answer to this problem because of its non-conformity with classical and modern stipulations.

Product quality

The methods for the quality analysis of ayurvedic medicines, after they are manufactured are not fully established. Most of the medicines are compound drugs and the ingredients pass through various stages of cooking. An official Pharmacopoeia has been brought out by the Government of India¹². That

monograph specifies various organoleptic and physico-chemical standards for Schedule-A¹³ medicines. They refer to values of extractiveness, loss of weight on drying, particle size, refractive index, pH, alcohol content, etc. But, it must be realised that none of these parameters really indicates anything specific about the medicinal characteristics of the product. That makes it a little blunt. Establishing individual chromatographic fingerprints seems to be a useful technique to improve the situation.

Conclusion

An attempt has been made here to view in perspective the various areas where efforts to update the ayurvedic system are relevant. It was not intended to cover all the various aspects exclusively; but the aim was more to cite the salient aspects. It appears that the thrust areas come under the product and process control aspects of the ayurvedic industry. While recognising the need to adapt extensively from the procedures of modern science, it is, at the same time, stressed that the purpose of doing so should be to enhance the inherent strength of the system with a view to improving its viability and adaptability.

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RASAVAISESIKA - XVI

Raghavan Thirumulpad, K*

ABSTRACT

Certain acarya opine that, of the eight *sparsa* referred to earlier (*Sutra* 56, Chapter II), only *usna* and *sita* are *sparsa* and that the others are *dravyavisesa*. Here, the subject of discussion is the arguments for and against this opinion.

63. न गुरुप्रभृतयः स्पर्शाः इति केचित् ॥

केचित् आचार्याः ब्रुवते गुरुप्रभृतयः स्पर्शाः
न भवन्ति इति ।

[Certain authors say that *guru* etc. are not *sparsa* (touches).]

Sparsa is the *guna* of *vayubhuta*. *Sparsatva* of the *dravya* is because of the presence of *vayu* in it. In the text, *sita*, *usna*, *guru*, *laghu*, *mrdu*, *kathina*, *karkasa* and *slaksna* are said to be the eight *sparsa*. Here an objection is voiced that only *sita* and *usna* can be said to be *sparsa* and that the others (*guru* etc.) cannot be said as *sparsa*.

64. द्रव्ये सत्यभावात् ॥

द्रव्ये सति अभावात् ।

(Even if there is the *dravya*, *guru* etc. becomes non-existent.)

Wet skin is *guru* (heavy), *mrdu* (soft) and *slaksna* (smooth). When dried the same becomes *laghu* (light), *kathina* (hard) and *karkasa* (rough). Here the same skin exists, but *guru* etc. changes. If they are *sparsa*, they have to exist permanently in the skin. Because the *vayubhuta* in it exists in it as long as the skin exists as it is *pancabhutamaya*.

65. नैमित्तिकत्वात् ॥

नैमित्तिकत्वात् ।

(As it is caused by *nimitta*, cause.)

Nimitta is cause. Caused by *nimitta* is *naimittika*. Water is inherently cold and fire is

* Raghava Ayurvedics, Chalakkudi.

inherently hot. These can be felt by touch. But, *gurutva* (heaviness) etc. are produced by a cause. The skin becomes heavy when it is soaked in water and becomes light when it is dried in the sun. Heaviness etc. cannot be felt by touch also.

66. अपेक्ष्यसिद्धेः ॥

अपेक्ष्यसिद्धेः ।

(As it is understood in comparison with other things.)

Something is said to be heavy or light in comparison with other things. An object that is heavier than another can be lighter with respect to a third one. Therefore, heaviness, lightness etc. cannot be inherent to things. *Usna* (heat) and *sita* (cold) do not manifest in comparison. The difference can be only in degrees. A stick cannot be said long or short by itself, but only by comparison – something understood by comparison cannot be attributed as *guna*.

67. द्वयोरैकत्र भावात् ॥

द्वयोः एकत्र भावात् ।

(As more than one *guna* exist in the same thing.)

The plantain fruit is *guru*, *mrdu* and *slaksna*. An iron ball can be *guru*, *slaksna* and *kathina*. All these exist in comparison also. There can be only one *sparsa* that can be felt by the sense in the skin (*sparsanendriya*) existing in each *dravya*. Either it has to be *sita* (cold) or *usna* (hot). The difference can be only in degree in comparison to other things.

68. इन्द्रियान्तरेण ग्रहणाच्च ॥

इन्द्रियान्तरेण ग्रहणात् च गुरुप्रभृतयः

स्पर्शाः न भवन्ति ।

(As *guru* etc. can be understood by some other sense also, it cannot be *sparsa* which is understood by touch only.)

Smoothness, roughness, softness and heaviness can be inferred even visually, without touching. Therefore, they cannot be *sparsa*. *Sparsa* can be felt by touch alone.

The objections (*purvapaksa*) are answered thus.

69. द्रव्ये सत्यभावः स्पर्शान्तरोत्पत्तेर्गन्धरसरूपवत् ॥

द्रव्ये सति अभावः स्पर्शान्तरोत्पत्तेः

गन्धरसरूपवत् ।

[When the *dravya* exists absence of *gurutva* etc. is due to manifestation of another *sparsa* - it is like *gandha* (smell) *rasa* (taste) and *rupa* (colour)].

The smell, taste and colour in the raw fruit change when it ripens. Smell, taste and colour are *guna* ascertained by different *indriya*. If these *indriyaguna* can change with the *dravya* remaining unchanged, there cannot be objection in *guru* etc. changing.

70. द्रव्यान्तरत्वादिति चेत् तदितरत्र तुल्यम् ॥

द्रव्यान्तरत्वात् इति चेत् तत् इतरत्र तुल्यं भवति ।

(If it is argued that by ripening the fruit becomes another *dravya* it can be the same with the skin when it is dried.)

Karma and *guna* denote the *dravya* (क्रियागुणवत् द्रव्यम्). The tender fruit and the ripe fruit have different *karma* and *guna*. Therefore, they are different *dravya*. Milk and curd are entirely different *dravya*, though the change occurs in the same substance. When the wet skin dries, the same kind of change takes place.

71. नैमित्तिकत्वमवर्ण्यमपेक्ष्यसिद्धिश्च ॥

एतेषां नैमित्तिकत्वं अवर्ण्यं अपेक्ष्यसिद्धिः

च अवर्ण्या !

(*Guna* etc. cannot be explained as being effected by some particular cause, and cannot be explained as being ascertained by comparison also.)

The argument that *guru*, *laghu*, etc. are the result of some cause and are understood by comparison also does not hold good.

72. उभयं हेतत् समानमितरैः ॥

एतत् उभयं इतरैः समानम् ।

(These two, *sita* and *usna* also are equal to the other *sparsa*, *guna* etc. in these respects.)

It can be argued that *sita* and *usna* also are the result of some cause in association with hot things and cold things. Hot water can be made cold by fanning and the body can be made hot by wrapping with woolen. The same thing can be made hotter or colder as necessary by some process.

73. रसवद् द्वयोरेकत्र भावात् ॥

रसवत् द्वयोः एकत्र भावात् गुरुप्रभृतयः

स्पर्शाः न इति न ।

[Just like *rasa* (taste), as two *guna* can exist in the same *dravya*, *guru* etc. can not be said to be *sparsa*.]

Madhura and *amla* (sweetness and sourness) are different *rasa* (tastes). They exist jointly in the same fruit *amalaka*. *Abhaya* is said to have all the tastes except *lavana* (*vilavana*). *Rasona* is bereft of one *rasa*, *amla*,

so it is called *rasona*.

74. उष्णवत् ग्रहणमिन्द्रियान्तरेण ॥

इन्द्रियान्तरेण ग्रहणं उष्णवत् भवति ।

Being ascertained by some other *indriya* also does not make *guru* etc. not *sparsa*. An iron ball heated in the fire glows, by seeing the glow with the eyes, it can be inferred that it is hot.

75. अनुमानादिति चेदितरत्र तुल्यम् ॥

अनुमानादिति चेत् इतरत्र तुल्यम् ।

(If it is argued that *usna* and *sita* are understood by some other *indriya* it is by inference (*anumana*), that is the same with the other *sparsa*, *guru* etc. also.)

On seeing a glowing object, we feel it is hot, by touching it. If this experience enables us to infer that anything glowing will be hot, the same argument can be applied in the case of *guru* etc. also. So it is not necessary that *guru* etc. are not *sparsa*. This can be taken as an example of *sastrasamvada* (scientific debate), putting forth objections (*purvapaksa*) and answering them (*uttarapaksa*).

76. अनुष्णाशीतं पुनस्तृतीयम् ॥

अनुष्णाशीतं पुनः तृतीयं स्पर्शं ब्रुवते ।

(Being neither hot nor cold the *acaryas* say as the third *saprsa*.)

Some *acarya*, who accept *usna* and *sita* as *sparsa* say that there is a third *saprsa* also of being not hot or cold. In association with hot things, *vayu* becomes hot and with cold things it becomes cold. Absence of something need

not be understood separately, as all such absences are classified as a separate *padartha*, category, namely *abhava* in *tarka sastra*. *Tarkikas* say *vayu* is *anusnasita*. As all *dravya* are of the five *bhuta*, all the five *guna*, *gandha*, *rasa*, *rupa*, *sparsa* and *sabda* pertaining to the *bhuta* i.e. *bhumi*, *jala*, *agni*, *vayu* and *akasa*, there have to be in every *dravya*. However, here, only the four *guna* i.e. *gandha*, *rasa*, *rupa* and *sparsa* are explained. Why is *sabda* left out? Sound of *dravya* manifests when it is split, crushed, or beaten. Each *dravya* has its own different *sabda*.

In the treatment of *pitta*, *harigitam* (melodious song) is prescribed as medicine. Incessant harsh sound may harm *sravanendriya* and agitate *vayu*. In *rajayakma roga*, hearing music, percussion and enjoying festivals are prescribed. Hence, *sabda* also has a place just

like other *guna* in agitating and pacifying the *dosa*, in treating diseases and maintaining health. It is the experience of even the common man and even animals and plants that good music (*sabda*) promotes peace and health, growth and well being. But in distinguishing and ascertaining the effects of the various *dravya* importance is given to *rasa*, not as much to other *indriyarthas* i.e. *gandha*, *rupa*, *sparsa* and *sabda*. *Rasa*, *guna*, *virya*, *vipaka* and *karma* (*prabhava*) are the five characteristics of the *dravya* explained in *Ayurveda*. द्रव्यमाश्रयलक्षणं पञ्चानाम् - here the only *indriyarthas*, *rasa* is included, not any other *indriyarthas*. We can assume that they are included in the *guna*. *Susruta* says of *surabhogandha* and *asurabhogandha* in addition to the twenty *guna* beginning with *guru*. In the *sastra*, only essentially important details are explained and minor ones are mostly left out.

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EXCERPTS FROM CIKITSAMANJARI - XXVI

Unnikrishnan, P.*

ABSTRACT

Deliberation on the treatment of *atisara* continues. In this issue, the management of *pittatisara* and *raktatisara* is discussed. Apart from *kasaya*, *ghrita* and *ksirapaka* for internal consumption, preparations for *seka* and *lepa* also are described.

23-24. Patients suffering from the following symptoms deserve *ksiratarpana* (satiating with milk).

- Constipation secondary to vitiation of *vata*.
- Severe colic and *pravahika* (frequent straining for stool with little or no defaecation).
- Blood and viscous material in stool.
- Thirst.

Milk medicated with *kotutuva* (*Tragia involucrata*) is very effective in all the above conditions.

25-26. When there is burning sensation in the anus secondary to vitiation of *pitta*, irrigation of the region with the *kasaya* of *patola* (*Trichosanthes lobata*) and *madhuka*

(*Glycyrrhiza glabra*) relieves the discomfort. *Candana taila* and *Satadhauta ghrita* shall also be used for *seka* (irrigation).

Pittatisara is cured within three days by the consumption of the following *kasaya*.

<i>Dhanvayasa</i>	<i>Tragia involucrata</i>
<i>Ousadha</i>	<i>Zingiber officinale</i>
<i>Ambudam</i>	<i>Cyperus rotundus</i>
<i>Patha</i>	<i>Cyclea peltata</i>
<i>Valakam</i>	<i>Coleus vettiveroides</i>
<i>Vatsakam</i>	<i>Holarrhena pubescens</i>

Burning sensation or *paka* (suppuration) of the anal region should be tackled by irrigation with liquids medicated using drugs of *sita virya* (cold potency).

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27. The following medicines should be consumed with *tandulambu* (first washing of rice) and honey.

<i>Samanga</i>	<i>Mimosa pudica</i>
<i>Dhatakampuspa</i>	<i>Woodfordia fruticosa</i>
<i>Lodhra</i>	<i>Symplocos cochinchinensis</i>
<i>Priyangu</i>	<i>Callicarpa macrophylla</i>

28. The following *kasaya* consumed with nocake cures *pittatisara*.

<i>Cutasthi</i>	<i>Mangifera indica</i> (seed kernel)
<i>Dhatakampuspa</i>	<i>Woodfordia fruticosa</i>
<i>Sunthi</i>	<i>Zingiber officinale</i> (dry)
<i>Dadimavalkala</i>	<i>Punica granatum</i>
<i>Musta</i>	<i>Cyperus rotundus</i>
<i>Samanga</i>	<i>Mimosa pudica</i>
<i>Dusparsa</i>	<i>Tragia involucrata</i>
<i>Kadalipuspa</i>	<i>Musa paradisiaca</i>
<i>Lodhra</i>	<i>Symplocos cochinchinensis</i>
<i>Ativisa</i>	<i>Aconitum heterophyllum</i>

29. A *kasaya* prepared from *musta* may be consumed with milk. Alternatively a *kasaya* prepared from *salmalivrntam* (bud of *Bombax ceiba*) shall be consumed with honey. This preparation is termed *hima*.

30-31. Boil 100 crushed *musta* (*Cyperus rotundus*), tied in cloth bundle in a mixture of 1.2 ltrs. of milk and 3.6 ltrs. of water and reduce to 1.2 ltrs. Discard the bundle of *musta* after squeezing. Curd prepared from this milk is very effective in *atisara*. It improves digestion also.

32. Mix this curd with *kasaya* prepared from *kotutuva* (*Tragia involucrata*) and churn well to remove butter. The buttermilk so obtained shall be used along with rice or shall be drunk.

In burning sensation of the palm and sole, this buttermilk shall also be used for irrigation. This also can be used with drugs capable of curing *atisara*.

The butter earlier obtained should be mixed with powder of *kutajabija* (seeds of *Holarrhena pubescens*), *ativitayam* (*Aconitum heterophyllum*) and *jiraka* (*Cuminum cyminum*) and consumed. This also cures *atisara*.

In the above preparation replace *musta* with crushed *inci* (*Zingiber officinale* – fresh) and roots of *kotutuva* (*Tragia involucrata*). The butter obtained from this preparation shall be used with food after melting.

Musta (*Cyperus rotundus*) prepared according to *ksirapakavidhi*¹ mixed with honey cure severe dysenteric diarrhoea. The barks of *jambu* (*Syzygium cumini*), *ksiridru* (Four fig trees), *amra* (*Mangifera indica*), *aralu* (*Ailanthus excelsa*), *kakubha* (*Terminalia arjuna*) or *karanja* (*Pongamia pinnata*) prepared as above also give the same effect.

33. *Phanita* (liquid jaggery) medicated with *kutaja* (*Holarrhena pubescens*) cures all *atisara*. *Kutaja phanitam* shall be consumed with butter milk or honey.

34. If a patient suffering from *pittatisara* consumes substances that vitiate *pitta*, *raktatisara* results. This disease is characterised by fever, thirst and severe suppuration of the anal region. This condition can be treated by consuming goat's milk.

Boil goat's milk in four-fold quantity of water and reduce to one fourth. When the milk is cold add sugar and honey. This preparation is effective in dysentery. Fresh goat's milk is

1. *Ksirapakavidhi* - Take the prescribed quantity of the drug, wash well, cut into pieces and crush and then tie it loosely into a bolus in a clean cloth; put it in milk (8 times of the quantity of the drug) added with water (4 times of the quantity of the milk), and boil and reduce to the quantity of milk. Then squeeze the bolus well and stir the milk till it is cooled.

also useful.

35. *Raktasali* (a variety of *Oryza sativa*) shall be taken with milk. Prepare root of *kotutuva* (*Tragia involucrata*) and *cukku* (*Zingiber officinale* – dry) according to *ksirapakavidhi*. This medicine should be taken during dusk.

In all cases of bleeding, goat's milk is very effective.

36. In thirst the following *kasaya* should be consumed.

<i>Ghana</i>	<i>Cyperus rotundus</i>
<i>Candana</i>	<i>Santalum album</i>
<i>Sunthi</i>	<i>Zingiber officinale</i> (dry)
<i>Ambu</i>	<i>Coleus vettiveroides</i>
<i>Parpata</i>	<i>Hedyotis corymbosa</i>
<i>Usira</i>	<i>Vetiveria zizanioides</i>
<i>Bhunimba</i>	<i>Andrographis paniculata</i>
<i>Laja</i>	<i>Nocake</i>

Butter mixed with sugar and honey shall be taken before food.

37-38. Finely powdered *kutaja bijam* (seed of *Holarrhena pubescens*) shall be taken with butter. The following *kasaya* is indicated in *raktatisara*.

<i>Dhataki</i>	<i>Woodfordia fruticosa</i>
<i>Ativisa</i>	<i>Aconitum heterophyllum</i>
<i>Ambhoda</i>	<i>Coleus vettiveroides</i>
<i>Mocam</i>	<i>Bombax ceiba</i>
<i>Cincasthi</i>	seeds of <i>Tamarindus indica</i>
<i>Vatsakam</i>	seeds of <i>Holarrhena pubescens</i>
<i>Amrasthi</i>	seed pulp of <i>Mangifera indica</i>
<i>Salmalivrntam</i>	buds of <i>Bombax ceiba</i>

Freshly prepared paste of *candana* shall be mixed with sugar, honey and *tandulambu* for the cure of *daha* (generalised burning sensation), *trsna* (thirst), *pramoha* (unconsciousness) and *raktasrava* (bleeding).

39-40. A *kasaya* prepared from *kadalipuspa* (flower of *Musa paradisiaca*) or *jambuamkura* (buds of *Syzygium cumini*) or *amramkura* (buds of *Mangifera indica*) consumed with honey cures *raktatisara* accompanied with straining.

Salmalipallava (tender leaves of *Bombax ceiba*) mixed with butter milk shall be consumed to win over *raktatisara*.

41-43. *Raktatisara* is cured by consumption of finely powdered *ativisa* (*Aconitum heterophyllum*) with honey.

The following drugs, finely powdered should be mixed with suitable quantity of *kasaya* prepared using *kutaja* (*Holarrhena pubescens*) and rolled into a pill.

<i>Jatikka</i>	<i>Myristica fragrans</i>	1 part
<i>Kattu</i>	<i>Acacia catechu</i>	1 part
<i>Ativisa</i>	<i>Aconitum heterophyllum</i>	1 part
<i>Paccottitholi</i>	<i>Symplocos cochinchinensis</i> ssp. <i>laurina</i>	1 part
<i>Tatiri</i>	<i>Woodfordia fruticosa</i>	1 part
<i>Moca</i>	<i>Bombax ceiba</i>	1 part
<i>Vedhi</i>	<i>Ferula asafoetida</i>	1 part
<i>Nazhalppuvu</i>	<i>Callycarpa macrophylla</i>	1 part
<i>Sakrayavabija</i>	seeds of <i>Holarrhena pubescens</i>	16 parts

This pill consumed with honey or buttermilk cures all types of *atisara*.

Boil crushed bark of *kutakappala* (*Holarrhena pubescens*) in water and reduce to one fourth. Powder 15 gm each of the ingredients of '*jatikkadi*' (refer previous table). Add the *kasaya* of *kutakappala* into this powder and consume for the cure of *atisara*. However, in *raktatisara* it should be consumed with honey only.

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44-45 Make pills with a fine powder of the following drugs in *salmalirasa* (*Bombax ceiba*) in the size of *badara* (*Ziziphus mauritiana*). Consume this pill with honey or *kutajaphanita* for the cure of *raktatisara*.

<i>Paccayandi</i>	seeds of <i>Mangifera indica</i> (fresh)
<i>Puliyaral</i>	<i>Oxalis corniculata</i>
<i>Tatiri</i>	<i>Woodfordia fruticosa</i>
<i>Caliyam</i>	Cinnabar
<i>Sahasravedhi</i>	<i>Ferula asafoetida</i>
<i>Kattu</i>	<i>Acacia catechu</i>
<i>Paccotti</i>	<i>Symplocos cochinchinensis</i> ssp. <i>laurina</i>
<i>Ajamoja</i>	<i>Trachyspermum roxburghianum</i>
<i>Kutaja</i>	<i>Holarrhena pubescens</i>
<i>Samanga</i>	<i>Mimosa pudica</i>
<i>Jatikka</i>	<i>Myristica fragrans</i>
<i>Musta</i>	<i>Cyperus rotundus</i>
<i>Ativisa</i>	<i>Aconitum heterophyllum</i>
<i>Nagaphenam</i>	<i>Papaver somniferum</i>

46. A *yusa* prepared from the following cure *raktatisara*.

<i>Vatsaka</i>	<i>Holarrhena pubescens</i>
<i>Ativisa</i>	<i>Aconitum heterophyllum</i>
<i>Patha</i>	<i>Cyclea peltata</i>
<i>Dipyakam</i>	<i>Trachyspermum ammi</i>
<i>Musta</i>	<i>Cyperus rotundus</i>
<i>Mayuraka</i>	<i>Achyranthes aspera</i>
<i>Cinca</i>	<i>Tamarindus indica</i>
<i>Dhataki</i>	<i>Woodfordia fruticosa</i>
<i>Dusparsa</i>	<i>Tragia involucrata</i>

47. Ghee medicated with the following *svarasa* and *kalka* cures *raktatisara*, *pittatisara*, *kaphatisara*, *gudaruk*, *gudabhramsa* and *grahani*.

Svarasa:

Expressed juice of *cangeri* (*Oxalis corniculata*) and half its quantity of expressed

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juice of *satavari* (*Asperagus racemosus*).

Kalka:

<i>Jambu</i>	<i>Syzygium cumini</i>
<i>Amrasthi</i>	seeds of <i>Mangifera indica</i>
<i>Ghana</i>	<i>Cyperus rotundus</i>
<i>Priyangu</i>	<i>Callicarpa macrophylla</i>
<i>Ativisa</i>	<i>Aconitum heterophyllum</i>
<i>Darvi</i>	<i>Coscinium fenestratum</i>
<i>Samanga</i>	<i>Mimosa pudica</i>
<i>Utpalam</i>	<i>Kaempferia rotunda</i>
<i>Ambasta</i>	<i>Hibiscus cannabinus</i>
<i>Dhataki</i>	<i>Woodfordia fruticosa</i>
<i>Lodhra</i>	<i>Symplocos cochinchinensis</i> ssp. <i>laurina</i>
<i>Vatsakam</i>	seeds of <i>Holarrhena pubescens</i>
<i>Sathi</i>	<i>Kaempferia galanga</i>
<i>Vilva</i>	<i>Aegle marmelos</i>
<i>Ambu</i>	<i>Coleus vettiveroides</i>
<i>Yasti</i>	<i>Glycyrrhiza glabra</i>
<i>Ousadha</i>	<i>Zingiber officinale</i>

48. Ghee medicated with the following *svarasa* and *kalka* cures *gudankura* (*arsa*), *gudabhramsa* and *raktatisara* etc.

Svarasa:

Expressed juice of *cangeri* (*Oxalis corniculata*).

Kalka:

<i>Hriberam</i>	<i>Coleus vettiveroides</i>
<i>Kanal</i>	<i>Plumbago indica</i>
<i>Kuvalam</i>	<i>Aegle marmelos</i>
<i>Kuvalayam</i>	<i>Kaempferia rotunda</i>
<i>Paccotti</i>	<i>Symplocos cochinchinensis</i> ssp. <i>laurina</i>
<i>Candanam</i>	<i>Santalum album</i>
<i>Patha</i>	<i>Cyclea peltata</i>
<i>Ativisa</i>	<i>Aconitum heterophyllum</i>
<i>Suramghri</i>	<i>Cedrus deodara</i>
<i>Japa</i>	<i>Hibiscus rosa-sinensis</i>

<i>Musta</i>	<i>Cyperus rotundus</i>
<i>Paracundaver</i>	<i>Mimosa pudica</i>
<i>Cukku</i>	<i>Zingiber officinale</i>
<i>Tatiri</i>	<i>Woodfordia fruticosa</i>
<i>Sindhujanma</i>	Rock salt

The treatment earlier detailed for *raktarsa* is also good for *raktatisara*. The *usna* causes dilution of blood which results in *raktatisara*. *Raktarsa* also presents the same picture. In order to cool the head irrigation with milk is indicated. Oils with *sitavirya* (cold potency) shall also be used. *Malarkuzhampu* (nocake mixed with oil) shall be applied over the body. A mixture of oil and ghee also shall be applied. *Laksadi kuzhampu* shall be applied. During dusk rice shall be consumed with milk.

If *jvara*, thirst and hyperacidity persist, *Sadanga* shall be consumed with nocake.

49. A *khala* prepared from the following cure *raktatisara* and *raktarsa*.

<i>Ellu</i>	<i>Sesamum indicum</i>
<i>Tumbakkudam</i>	<i>Leucas aspera</i> (flower)
<i>Peralmottu</i>	<i>Ficus benghalensis</i> (bud)
<i>Ghanam</i>	<i>Cyperus rotundus</i>
<i>Mayuri</i>	<i>Achyranthes aspera</i>

50. Prepare *kanji* (gruel) with *mudga* (*Vigna mungo*) in water medicated with the following. This cures *pittatisara* and *raktatisara*.

<i>Malarkizhi</i>	Nocake bolus
<i>Muvila</i>	<i>Pseudarthria viscida</i>
<i>Cukku</i>	<i>Zingiber officinale</i> .

51. Ghee medicated with the following *kalka* and *drava* is said to cure *arsa*, *grahani*, griping, urinary calculi, flatulence and *prameha*.

Kalka:

<i>Karnir</i>	<i>Cyperus rotundus</i>
<i>Ti</i>	<i>Plumbago indica</i>
<i>Patha</i>	<i>Cyclea peltata</i>

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<i>Manci</i>	<i>Nardostachys grandiflora</i>
<i>Surataru</i>	<i>Cedrus deodara</i>
<i>Rajani</i>	<i>Curcuma longa</i>
<i>Ajjhata</i>	<i>Mimosa pudica</i>
<i>Amra</i>	<i>Mangifera indica</i> (seed)
<i>Utpala</i>	<i>Kaempferia rotunda</i>
<i>Yasti</i>	<i>Glycyrrhiza glabra</i>
<i>Pacotti</i>	<i>Symplocos cochinchinensis</i> ssp. <i>laurina</i>
<i>Sunthi</i>	<i>Zingiber officinale</i>
<i>Kulir</i>	<i>Santalum album</i>
<i>Cavika</i>	<i>Piper brachystachyum</i>
<i>Cavalkaram</i>	Potassium carbonate
<i>Vilva</i>	<i>Aegle marmelos</i>
<i>Visakhya</i>	<i>Aconitum napellus</i>

Drava:

Amlikavari (*cuttapuli* - *dhanyamlam*)

Ghee medicated with juice of *puliyaral* (*Oxalis corniculata*), *cerukatalati* (*Achyranthes aspera*), curd and drugs suitable for the cure of *atisara* as *kalka* is effective in *arsa*, *atisara*, *grahani* and *kutarvata* (griping).

52. Ghee medicated with the following *drava* and *kalka* relieves *arsa*, *grahani*, *pliha*, *krmī*, *pandu* and *sopha*.

Drava:

Dissolve 3.75 kg of *plasintol* (bark of *Butea monosperma*) in 7.5 litres of water and allow to settle. After sedimentation, filter the supernatant liquid and use as *drava*.

Kalka:

Trikatu (*Piper longum*, *Piper nigrum* and *Zingiber officinale*)

Triphala (*Terminalia chebula*, *Terminalia bellerica* and *Phyllanthus emblica*)

52. Milk medicated with a paste prepared from the roots of *kozhinjil* (*Tephrosia purpurea*) cures dysentery and griping.

ARYAVAIIDYAN

Clinical observation MENIERE'S DISEASE

Unnikrishnan, T.M *

ABSTRACT

The author shares the experience of managing a case of Meniere's disease which yielded encouraging result.

Meniere's disease is an inner ear condition in which the symptom cluster of fluctuating hearing loss and tinnitus and is found along with episodic attacks of vertigo. The disease is often attributed to endolymphatic hydrops from impaired absorption of endolymph. Auto immune reactions, food allergies and muscular disturbances may also play a causative role. The efficacy of ayurvedic medicines in the management of Meniere's disease too is not well proved. Hence an attempt is made in this article to report a case of Meniere's disease and its treatment at the out patient level.

A 58-year-old male business executive from Delhi came to the O.P.D with symptoms of Meniere's disease on 3.6.98. His main complaints were giddiness, nausea, feeling of fullness inside ears, heaviness of head, lack of concentration and tinnitus. Duration of the

complaints was one and half years. Additionally he complained about occasional constipation and insomnia. His blood pressure, pulse, blood and urine (routine) investigation values were within normal limits. His past history was insignificant. His work was frequently affected by bouts of symptoms. He is a vegetarian and married, having two children. The case was diagnosed as Meniere's disease. He was on antiemetics, vasodialators and medicines like cinnarizine.

This case was analysed on the basis of *tridosasidhanta* and diagnosed as vitiation of *vata* and *kapha* in the head ie. increased (*vrddha*) *kapha* is trying to block the normal flow and function of *vayu* in head. It may be remembered that *siras* is the seat of *tarpakakapha* and *pranavayu*.

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The following medicines were prescribed:

1. *Dhanvantaram kasayam* 15 ml mixed with 60 ml of warm water and one *Vayu gulika* to be taken twice daily (6.00 a.m. and 6.00 p.m.)
2. *Ksirabala* (101) 15 drops mixed with one *Suvarnamuktadi gulika* to be taken at bedtime.
3. *Picu* to be done on the head with *Rasnadasamuladi tailam*.

He was advised to continue the modern medicines he was already taking.

The patient reported again on 16.6.98. There was substantial relief of symptoms during the first week of medication. But complaints reappeared with same intensity in the second week. There were two severe episodes of nausea and giddiness, while attending a conference. He was forced to quit the chamber and to take complete rest. The same medicines were recommended for two weeks more. In case of severe attack of nausea and giddiness, patient was advised to chew one *Gorocanadi gulika* and *Mahadhanwantharam gulika* together.

After two weeks, when the patient came on 31.6.98, he reported remarkable improvement.

There were no further severe attacks. He was also able to discontinue modern medicine. He was in a fairly good condition. The case was reviewed after one month. His condition was stable.

References

1. *Dhanvantaram kasayam*
(*Astangahrdayam*)
2. *Ksirabala* (101)
(*Yogagrandham*)
3. *Rasnadasamuladi tailam*
(*Yogagrandham*)
4. *Vayu gulika*
(*Yogagrandham*)
5. *Suvarnamuktadi gulika*
(*Arogyakalpadrumam*)
6. *Gorocanadi gulika*
(*Yogagrandham*)
7. *Mahadhanvantaram gulika*
(*Yogagrandham*)
8. *Davidson's principle and practice of medicine.*

क्या प्रभाव सोचनीय नहीं है ?

वारियर, पी. आर.*

ABSTRACT

Prabhava is the factor responsible for specific action of different drugs inspite of having common properties. Susruta describes this property as *acintya* (incomprehensible). This article reproduced from the *Ayurvedapatanangal Avalokanangal* discusses the incomprehensibility of *prabhava*.

दवा या भोजन के रूप में या किसी अन्यप्रकार से इस्तेमाल करनेलायक अनेक द्रव्य इस दुनिया में हैं। इनके रूपधर्मवैविध्य तथा प्रभावभेद का प्रमुख कारण उनके रूपगठन की विशेषता है। हर द्रव्य के गठन की अपनी विशेषता है। दो द्रव्यों का गठन समान हो सकता है, विभिन्न भी। तदनुसार उनके धर्म भी परस्पर समान या विभिन्न या विरुद्ध हो सकता है। जो भी हो सिर्फ इन सबको समझकर इस्तेमाल करने पर ही सारे द्रव्य एक न एक तरह हमें लाभकारी होंगे। द्रव्य के गठन और धर्म का निर्णय कैसे कर सकते ?

आयुर्वेद विज्ञान के अनुसार एक द्रव्य के क्रियात्मक तथा कर्म को निश्चित करनेवाले चार घटक हैं। ये हैं - रस, वीर्य, विपाक और प्रभाव। ये चार द्रव्यनिष्ठ हैं। आयुर्वेद में द्रव्यधर्म का उपयोग इन्हीं के आधार पर है।

इन चारों को अलग धर्म हैं। ये धर्म भी परस्पर समान हो सकता है, विभिन्न हो सकता है और कभी विरुद्ध हो सकता है। चाहे जैसा भी हो इनकी कुलराशि को द्रव्य का धर्म या धर्मो माना जाता है।

रस, वीर्य, विपाक, प्रभाव इनमें रस छः प्रकार के हैं : मीठा, खट्टा, नमकीन, कड़वा, तीखा और तिक्त। इनमें एक एक को अपना अलग नियमित धर्म भी है। इनके धर्म तब शरीर को मिलते हैं जब द्रव्य जीभ में स्पर्श करता है। वीर्य को संक्षेप में दो रूपों में बंटा गया है - उष्ण और शीत। इसके धर्म द्रव्य के अंश रक्त में पहुँचने के बाद रक्त-बहाव-योजना से शरीर को मिलते हैं। विपाक जठराग्नी (पाचन रस) के संयोग के कारण परिवर्तित रस है। विपाक में, मीठा मीठा के रूप में, नमक मीठे के रूप में, खट्टा खट्टे के रूप में ही रहता है। कड़वापन, तीखापन, तिक्तता

* One of the disciples of Vaidyaratnam P.S. Varier, P.R. Varier (1930-1987), who had presented a number of scientific papers in Ayurvedic Conferences in India and abroad, was the Chief Physician at Thiruvananthapuram Branch of Arya Vaidya Sala for nearly three decades. He was a member of the Ayurveda Faculty of Kerala University also and was interested deeply in literature and Fine Arts.

अनुवाद : प्रमोद कोव्वप्रतु, आर्ट्स आन्ट सयन्स कालेज, मुट्टिल, वयनाट, केरलम ६७३ १२२

आदि प्रायः तीखापन के रूप में ही रहता है। सामान्यतया रस से भी प्रभावकारी है विपाकरस। रस और विपाक एक ही होते वक्त (उदा :- मीठा, खट्टा, तीखा ये विपाक में दूसरा नहीं बन जाता) उसके संयुक्त कर्म और भी प्रभावकारी होता है। रक्त-बहाव-योजना से कार्य करनेवाले वीर्य, विपाक से प्रभावकारी है। एक और मत है कि वीर्य आठ प्रकार के हैं। जैसे - गुरु, स्निग्ध, हिम, मृदु, लघु, रूक्ष, उष्ण, तीक्ष्ण आदि। एक द्रव्य में निष्ठ इन गुणों को तथा रसविपाकों को अगर समानता होगी तो इसके फलस्वरूप होनेवाले द्रव्यधर्म को एकाग्रता ज्यादा होगी। धर्म विभिन्न है तो उपर्युक्त क्रम में जिन घटकधर्मों को बलाधिक्य है वही द्रव्यधर्मों का नियंत्रण करेगा।

रस वीर्य विपाकों के उपवर्गों के तथा कर्मस्वभाव के बारे में विस्तार से यहाँ चर्चा नहीं करता। इन घटकों में चौथा प्रभाव जो है वही इस लेख का विषय है। एक द्रव्य का जो अलग धर्म है उसके बारे में आखिरी निर्णय लेनेवाला घटक प्रभाव है।

रसं विपाकस्तौ वीर्यं प्रभावस्तान् व्यपोहति ।

वही समझने में सबसे अधिक कठिन है और गलतफहमी भी हो सकती है। इसके बारे में एक सही बोध चर्चा के द्वारा उत्पन्न करना चाहिए। बस उसमें से एक की भूमिका में निभाता हूँ।

प्रभाव क्या है ? स्वाभाविक रूप से वीर्य और प्रभाव का लगभग एक ही अर्थ है। लेकिन पारिभाषिक शब्द के रूप में वैद्यविज्ञान में उपयोग की सुविधा के लिए इसका एक अलग अर्थ तय किया गया है। एक द्रव्य शरीर से सार्वत्रिक रूप से (रक्त-बहाव-योजना से) करनेवाले कुछ सामान्य धर्मों का प्रतिनिधित्व करता है वीर्य शब्द। प्रभाव द्रव्य के कुछ विशिष्ट धर्मों को लक्ष्य करके उपयोग करनेवाला एक शब्द है। प्रभाव की सही परिभाषा क्या है ? *रसादि साम्ये यत् कर्म विशिष्टं तत्*

प्रभावजम् (अ.ह.) विशेषकर्मणां चैव प्रभावस्तस्य च स्मृतः (च.) अर्थात् रस, वीर्य, विपाक आदि समान होने के साथ-साथ एक द्रव्य अगर कोई विशिष्ट कर्म करता है तो उस कर्म को जो कारण बन जाता है उसे प्रभाव कहा जाता है। मान लीजिए कि अनुशीलन करने पर दो द्रव्यों का रसविपाक वीर्य समान है। तब दोनों के धर्म भी समान होंगे न ? नहीं, ऐसा नहीं कहा जाता। या तो यह अनुभव से जानता है कि उनमें से एक ऐसा एक खास धर्म निभाता है जो और किसी को नहीं तो ? ऐसा हो सकता ? होगा, इसके लिए उदाहरण है,

दन्ती रसाद्यैस्तुल्याऽपि चित्रकस्य विरेचनी

मधुकस्य च मृद्धीका घृतं क्षीरस्य दीपनम् (अ.ह.)

नागदन्ति और चित्रक कंद रसादियों में समान हैं। मगर नागदन्ति को विरेचन करवाने का एक खास धर्म है। मृद्धीका, मधुका ये भी रसादियों में समान है, लेकिन मृद्धीका को विरेचन करवाने की एक खास क्षमता है। घी और दूध रसादियों की बात में समान होने पर भी घी को दीपनत्व और दूध को विरेचन कार्य का खास धर्म है। और भी कुछ है - *स्वादुर्गुरुश्च गोधूमो वातजित्वातकृद्यवः (अ.ह.)* गेहूँ और जौ मीठा तथा गुरु है। तो भी गेहूँ वातहारक और जौ वातकारक है।

इस तरह देखें तो किसी भी द्रव्य को कुछ विशिष्ट कर्म होगा न ? हाँ। अर्थात् अनुभव से प्रत्यक्ष परिमाण भोगने से ही पूर्णरूप से उस पर निर्णय कर सकते या पहचान सकते। यही इस का तात्पर्य है न ? हाँ, इसलिए हो सकता है कि एक आचार्य ने कहा है कि प्रभाव अचिन्त्य (असोचनीय) है। [*प्रभावोऽचिन्त्य उच्यते (सु.)*] विवाद या बड़ी खोज के लिए निकलने से कोई फायदा नहीं है। ऐसा भी जोर देकर बताने में वे न भूले कि प्रामाणिक ग्रन्थों में अमुक-अमुक फल के लिए ख्याति प्राप्त द्रव्यों को ही विश्वास के साथ स्वीकार करना 'विचक्षण' वैद्य का

काम है। देखिए -

अमीमांस्यान्यचिन्त्यानि प्रसिद्धानि स्वभावतः ।

आगमेनोपयोज्यानि भेषजानि विचक्षणैः ॥ (सु.सू.)

ऐसा भी बलपूर्वक कहते हैं कि प्रत्यक्षलक्षणफल से प्रसिद्ध हुए द्रव्यों को विद्वानों को कारणों से जाँच नहीं करनी चाहिए।

प्रत्यक्षलक्षणफलाः प्रसिद्धाश्च स्वभावतः ।

नौषधीर्हेतुर्भिविद्वान् परीक्षेत कथञ्चन ॥ (सु.)

मतलब कि कैसा है क्यों ऐसा मत पूछना ! सिर्फ यह मान लीजिए कि आचार्य ने इसे इस ओर इशारा करने के लिए जोर देकर बताया कि लघुत्वबुद्धि से किसी तरह इस्तेमाल करनेलायक एक विषय नहीं है। हम जानते हैं कि सोचने को, गहन रूप से सोचने को वे स्वभावतः विरोधी नहीं हैं। जो बताते हैं उसका मर्म समझना, वरना उसे ज्यों का त्यों अनुसरण करें तो उस रास्ते में कारण की जो चिन्ता और विवेचनबुद्धि का कार्य है। वह धीरे धीरे रुक जाएगा न ? वह तो नहीं होने दे। अचिन्त्य का चिन्त्य बनाना चाहिए। एक अमुक द्रव्य को एक अमुक विशिष्ट कर्म कैसे हुआ नामक प्रश्न को सिर्फ 'प्रभाव' से नामक उत्तर काफ़ि नहीं है। यह लघु उत्तर उस बड़े प्रश्न को पूर्णविराम मत डालना चाहिए। अगर ऐसा है तो रस, वीर्य, विपाक आदि को समझने का प्रयास निष्फल होगा न ? किसी भी द्रव्य का विशिष्ट कर्म अचिन्त्य है तो पढ़ने में असान होगा। जबकि रस वीर्य विपाकों के बारे में सोचकर उन्हें और त्रिदोषों के बीच के संबन्ध और उनके कारणों को लगभग साफ़ बता पाए तब सिर्फ प्रभाव कैसे अचिन्त्य हुआ ? जठराग्नि संयोग के बाद परिणाम के अन्त में विपाकरस और रक्त में कार्य करनेवाले वीर्य को कैसे पहचान सकते ? जो भी हो उस और विशिष्टकर्म को जानने के लिए क्यों न प्रयास करें ?

एक बात स्पष्ट हैं। कई द्रव्यों के विशिष्ट कर्म जाने बिना उसका उपयोग नहीं कर सकते। शास्त्र में एक ही

द्रव्य के कई धर्म बताए होंगे। कभी यह बताएगा कि विरुद्ध स्वभाव के एक से अधिक दोषविषमताओं के लिए फलदायक है एक द्रव्य। कुलथी के धर्म बताने के प्रसंग में "कासार्षः कफवातांश्च घ्नन्ति" देख सकते। विरुद्ध गुणों के वातकफों को वह मिटाएगा। "सर्वदोषघ्नी जीवन्ती मधुरा हिमाः" ऐसा भी देख सकते। ऐसे द्रव्यों को इस्तेमाल करने में आसानी है जिसके धर्म हर एक के रसवीर्यविपाकों के अनुकूल हो। एक द्रव्य कड़वारस और उष्णवीर्य और शरीर में दाह उत्पन्न करनेलायक देखे तो सामान्यतः यह बताने में हिचकने की ज़रूरत नहीं कि वह द्रव्य उष्ण से होनेवाली बीमारियों को उत्पन्न करेगा और शीत से होनेवाली बीमारियों को ठीक कर देगा। लेकिन कुछ कटु और उष्ण द्रव्य अगर शरीर में सामान्य रूप में एक तरह और कुछ विशिष्ट स्थानों में विशिष्ट तरह उष्णवीर्यधर्म निभाए तो ? एक ही द्रव्य एक से अधिक हिस्सों पर विशिष्ट धर्म दिखाना आवश्यक नहीं। जो भी हो, इस तरह कुछ विशिष्ट धर्म निभानेवाले द्रव्य रोगोत्पादक या रोगनाशक के रूप में देख सकते। सामान्यतः अनार के छिलका, विल्वमूल, तिनपतिया आदि जड़ीबूटियों की बंधनशक्ति पूरे शरीर पर फैलेगी तो भी पेट में ही अधिक काम करती है। इसलिए अतिसार में इसका फल बहुत अच्छा होता है। इसी तरह नागदन्ति, वास्तुक (लाल बाच्छू), त्रिवृत् आदि का सरत्व सारे शरीर पर होगा फिर भी पेट में ही खास करके काम करता है। इसलिए उसे विरेचन के लिए इस्तेमाल करते। द्रव्यनिष्ठ गुण वीर्यत्व से सारे शरीर पर व्याप्त होता है और काम भी करता है। फिर भी शरीर के कुछ खास हिस्सों में विशेष रूप से काम भी करता। उपर्युक्त उदाहरणों से क्रमशः स्थिर और सरं नामक दो प्रख्यात विपरीतगुण पेट में विशिष्ट रूप से काम करते हैं। हालांकि कुछ विशेष प्रसंग में इस विशेष कर्म का अलग से समझना मुश्किल है। त्रिकटु अतिस्थौल्य को कम करता। अग्निमान्द्य, कास, श्लेष्मिपद, पीनस आदि के लिए भी अच्छा है। लेकिन इनमें किसके

लिए खासकर फलदायक होता ? कास, उदर, रक्तपित्त, छर्दि, श्वास आदि के लिए भी पुनर्नवा अच्छा है। (कफवात को भी मिटा देता।) लेकिन इनमें इसे प्रमुखता किसको है ? कास, रक्तपित्त, छर्दि, श्वास आदि रोगों के लिए वाशा उपयोगी है। इसी तरह तुलसी, हरड़, त्रिफला, दशमूल आदि के असंख्य गुणधर्म फलश्रुति में देख सकते। फल देखे तो लगेगा कि उपर्युक्त सभी रोगों को मिटाने के लिए इनमें से किसी एक काफि है। इनके विस्तृत गुणधर्म संसार से हर एक के विशिष्ट कर्म कैसे समझ सकते? अगर इसके लिए कुछ सामान्य तत्व नहीं है तो इन दवाओं को अच्छे ढंग से कैसे इस्तेमाल करते? यह सोचना क्या ठीक होगा कि एक द्रव्य उसकी फलश्रुति में बताये जानेवाले हर रोग के लिए फलदायक होगा?

यहाँ एक प्रश्न उत्पन्न हो सकता। रोग का मतलब दोषवैषम्य है; चिकित्सा का उद्देश्य दोषसाम्य पैदा करना है। तब तो हर द्रव्य के दोषसमीकरणात्मक गुणों को आधार बनाते हुए चिकित्सा कर सकते हैं न? रोग चाहे किस भी आसार द्वारा प्रकट हो जाए लेकिन मौलिक रूप से दोषसाम्य होने पर रोगशांति होगी न? ठीक है। लेकिन, इधर कई बातें विचारणीय है। सामान्य रूप से यह कहना ठीक है कि रोग त्रिदोषवैषम्य है। इसलिए एक विशेषरोग (मधुमेह, अर्श, ग्रहणी आदि) होता है तो दोषवैषम्य भी एक विशेष रूप से होना चाहिए। यह कहने की बात नहीं कि एक विशेष दोषवैषम्य के लिए एक विशेष दवा की ज़रूरत है। यह भी ठीक है कि शरीर के एक दोष के सार्वत्रिक वैषम्य के कारण कई रोगों का उपद्रव हो सकता है। यह भी ठीक है कि इनके आसार अन्योन्याश्रित अत्यंत साधारण होने के कारण सामान्यतः दोषसाम्य होनेवाली दवा या दवाओं का उपयोग करना काफी है। मानो कि कफदुष्टि हो गयी और उसके सारे सामान्य आसार - कास, श्वास, अरुचि, छर्दि, मान्द्य आदि प्रकट हो गए; कफदुष्टि को दूर करने को एक साधारण दवा इस्तेमाल करने पर ये

सारे उपद्रव क्रमशः मिट सकते हैं। एक ही दवा शरीर के कई हिस्सों में एक साथ काम करता है, इसे इसका उदाहरण कह सकते हैं। यह एक प्रकार की कारण चिकित्सा है। लेकिन हमेशा रोग का आगमन चिकित्सा सुविधाओं को मदे नज़र रखते हुए नहीं होता। अगर कफदुष्टि सिर्फ अंशिक रूप से है तो ? कास है श्वासरोक नहीं, या तो मान्द्य है, श्वासरोक नहीं। श्वास रोक है, कास नहीं। या तो मान्द्य के सिवा उपर्युक्त कोई भी दोष नहीं। यह सब हो सकता है। तब तो सिर्फ एक साधारण कफशमन दवा का इस्तेमाल करें तो रोगग्रस्त स्थानों पर दोषवैषम्य दूर होगा तो भी शेष हिस्सों में स्वस्थ अवस्था में जो कफांश है उसकी क्षति भी हो सकती नहीं ? वह तो एक दूसरी अस्वास्थ्य को पैदा करेगा न ? ऐसे प्रसंगों में एक विशेष हिस्सा में विशेष कार्य करनेवाली दवाओं को चुनकर इस्तेमाल करना पडता है।

जैसे विशेष हिस्सों में विशेषकर्म निभानेवाले द्रव्य की ज़रूरत है, वैसे ही विशेषरोगों के लिए विशेष कर्म करनेवाला भी चाहिए। एक बीमारी के अनेक आसार हो सकते। एक बार का एक रोग दूसरे प्रसंग में केवल राग का आसार हो सकता। ऐसे आसारों में एक ही कभी क्रमशः रोग का रूप धारण कर सकता है। मान लीजिए कि रोग ज्वर है, अतिसार, पेट दर्द, जलन आदि का भी उपद्रव है तो और भी गुण होने पर भी ज्वर के लिए उपयुक्त दवा ही इधर इस्तेमाल करनी चाहिए। वरना किसी उपद्रव को सिर्फ अस्थायी शान्ति ही मिल सकती है। कभी रोग अतिसार हो सकता है और ज्वर आदि उसके उपद्रव। उपर्युक्त प्रसंग में जो दवा दी है वह भी यह देखकर इस्तेमाल करने पर फलदायक नहीं होता कि किन-किन उपद्रवों को तसल्ली मिली है। अतिसार के लिए विशेष फलदायक दवा ही चाहिए। ये सब हमारे आचार्य ठीक तरह जानते थे। इसलिए एक ही दवा को कई रोगों के लिए फलदायक बताए जाने पर भी, विभिन्न रोगों के लिए बहुत अधिक

याग, इक दवाएँ, अग्रौषध को सुझाया है। एक ही रोग के लिए कुछ विशेष शरीर के स्वभाव के अनुसार विशेष अवसर पर इस्तेमाल करने लायक कर्म निभानेवाली दवाओं के बारे में भी बताया है न ? कुछ सामान्य तत्वों को आधार बनाने के सिवा इन सबको उन्होंने कैसे जान लिया।

तब तो यह समझना चाहिए कि द्रव्यों के विशिष्ट कर्म (प्रभाव) जानने के कुछ सामान्य तत्वों की जानकारी अचार्यों को थी। फिर क्यों सुश्रुत ने *अमीमांस्या-न्यचिन्त्यानि*, *प्रभावोऽचिन्त्यः* आदि बताया है। जैसे कि मैं ने पहले कहा कि यह सिर्फ लाघवबुद्धि से इसके न निपटाने की एक चेतावनी है।

उपाय क्या है?

रस, वीर्य, विपाक आदि फलौं-फलौं है वैसे कहने की तरह क्या हर एक द्रव्य के विशिष्ट धर्म जानने का कोई सामान्य नियम है ? रस, वीर्य, विपाक आदि के बारे में विचार करके आधुनिक विज्ञान के आलोक में आधुनिक ढंग से एक द्रव्य का विश्लेषण करके उसके मौलिक घटक कौन कौन है यह जानने से सिर्फ उस द्रव्य के कुछ सामान्यधर्म ही जान सकते। विशिष्टधर्म सिर्फ द्रव्य की प्राकृतावस्था (संगठित अवस्था) में ही होता है। जब द्रव्य का विघटन करता तब उस विशिष्ट धर्म रह नहीं जाता। दूसरे शब्दों में कहें तो विभिन्न घटक पदार्थों के रूपधर्म संयोग के समय बदल जाता है। यह आसानी से समझ सकते। इसके लिए औत्पिदद्रव्यों की बढोत्तरी का निरीक्षण करना काफी है। एक विशेष स्थान पर वैसे ही अंकुरित होनेवाले पौधों को देखिए। सबको समान रूप से सूर्यप्रकाश और हवा मिलते हैं। धातुलवण, अन्य पोषण और पानी भी उसी मिट्टी से ही उन सबको मिलते हैं। लेकिन सब एक ही तरह अंकुरित हुआ है ? कई विभिन्नताएँ देख सकते - अनभिगम्य विभिन्नताएँ। एक से पत्ते अधिक पुष्ट रूप से बढते, दूसरा अपनी अधिकांश शक्ति फूल

ARYAVAIIDYAN

भरवाने के लिए छोडती है, तीसरे में बहुत अधिक फल है तो चौथे के मुख्य रूप से मजबूत छाल ही अधिक है। अच्छे ढूँठ और मोटापन एक और को है, पत्ते व ढूँठ में दूध सा नीर है, कुछों को जलनेलायक नीर है, एक लता जैसा फैलता, दूसरा नुकीला जैसा बढता, कुछों को बहुत से छोटे-छोटे फूल, कुछों को इधर-उधर बडे-बडे फूल, मोटे पंखुडिवाले घने छिलकेवाले, छिलके रहित - इतनी विविधताएँ देखते वक्त सिर्फ घटकों के आधार पर द्रव्य के विशिष्ट कर्म का कैसे निश्चय कर सकते?

एक बात कहने को लगता है। ऐसा पक्का कहना तो ठीक नहीं होगा कि जिसका प्रत्यक्ष प्रमाण नहीं है वह सच नहीं। कभी कुछ सत्यों को एक हद से परे सिर्फ अनुमान कर सकते है। इसलिए वह अविश्वसनीय होना आवश्यक नहीं कि वह सिर्फ अनुमान पर आदृत है। संयुक्त अवस्था में द्रव्य का विशिष्ट धर्म अत्यन्त सूक्ष्म है। इसलिए वह एक हद तक अनुमानिक ही हो सकता। वह विश्लेषण से प्रकट करने की कोशिश प्रकृतिनियम के विरुद्ध है। जहाँ तक शरीर का संबन्ध है यही हाय है। अनेक घटक के अंश तथा विशिष्ट और अत्यंत आश्चर्यजनक एक संयोग का परिणाम है यह शरीर। सिर्फ विविध घटकों के विशिष्ट संयोग की अवस्था में ही वह सचेतन बन जाता है। शरीर के सारे अंगों को गठन की दृष्टि से अत्यंत समानता देख सकते हैं। तो भी जरा अन्तर होता है। रूपधर्मों में विभिन्नता होने का कारण यह है। यह अनुमान कर सकते कि हर एक अंग के गठन के लिए समान गठन के द्रव्य से शरीर को ऊर्जा मिले तो वह शरीर के उन-उन हिस्सों में विशेषरूप से काम करेंगे। इस प्रकार एक द्रव्य शरीर के अन्य हिस्सों में सामान्य रूप से और एक विशेष हिस्से में अधिक काम करें तो उसे हम विशिष्ट धर्म के रूप में पहचानते हैं। यह बात बारीकी से सोचने पर जान सकते हैं। विविध शारीरिक हिस्सों को बाहरी दुनिया के विविध रूपों को रूपधर्मों में जो समानता है उसे खोजने में विशिष्ट कर्म या प्रभाव जानने

का उपाय विद्यमान है ।

यह नयी खोज नहीं । वृद्धिः समानैः सर्वेषां विपरीतैर्विपर्ययः नामक सूत्र में एक तत्व छिपा हुआ है । शरीर के किसी भी अंग का गठन, समानगठन के द्रव्य से बढ जाता; विपरीतों से क्षति होती । सर्वदा सर्वभावानां सामान्यं वृद्धिकारणम् और सामान्यमेकत्वहरं विशेषस्तु पृथक्त्वकृत कहने का मतलब यही है । शरीर के हिस्सों तथा बाहरी द्रव्यों को ऐसी समानता है । यही समानता द्रव्य के विशिष्ट धर्म अथवा प्रभाव का निर्णय करता है । यह निष्कर्ष शस्त्र स्वीकृत है ? देख लेंगे ।

वृद्धिस्समानैः सर्वेषां नामक नियम को मांसं मांसेन वर्द्धते जैसे उदाहरण दिए हैं । मांस जैसी मांसधातु बढानेलायक और कोई चीज़ नहीं । खासकर मांस खाकर जीनेवाले प्राणियों का मांस ।

नहि मांससमं किञ्चिदन्यदेहबृहत्वकृत ।

मांसादमांसं मांसेन संभृतत्वाद्विशेषतः ॥

मांस के और धर्म हैं । मांस वर्ग में बकरी का मांस अधिक उपयुक्त है, क्योंकि शरीरधातुओं से उसकी अधिक समानता है ।

नातिशीतं गुरुस्निग्धं मांसमाजमदोषळम् ।

शरीरधातु सामान्यादनभिष्यन्दि बृंहणम् ॥

गुरुता और स्निग्धता मांस के सामान्य गुण है । ये गुण शरीर में सार्वत्रिक रूप से काम भी करते । लेकिन यहाँ मांसधातु बढाने का एक विशिष्टधर्म (प्रभाव) उसे हैं । कारण ? समानता ही । व्रणविज्ञान प्रतिषेध में शुष्क और मांसशोषित व्रण में मांसादमांसं अच्छा बताया है ।

शुष्काल्पमांसे गंभीरे व्रणे

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अद्यान्मांसादमांसानि विधिनोपहितानि च

मांसं मांसादमांसेन वर्द्धते शुद्धचेतसः

इसीतरह बहुत अधिक रक्त निकलकर संकट आने पर तुरंत उसे बढाने के लिए प्राणरक्त बहुत उपकारी होता । विरेचनातिथोग से रक्त आकर प्राणरक्त की हानि हुई तो हिरण, गाय, भैंस, बकरी आदि का रक्त पीने के लिए सुझाया जाता है ।

मृगगोमहिषाजानां सद्यस्कं जीवतामसृक् ।

पिबेज्जीवाभिसन्धानं जीवं तद्दहाशु गच्छति ॥

यह पता न होने पर भी कि blood transfusion आज की तरह तब होता था कि नहीं, तो भी इसे यह समझ सकते कि प्राणरक्त पिलाने के कुछ प्रसंग तब भी अज्ञात नहीं थे ।

जंगमं (Animal kingdom) पार्थिवं (Mineral kingdom) औद्भिदं (Vegetable kingdom) इसप्रकार द्रव्य तीन प्रकार के है । इनमें जंगम मांसरक्तादि से शरीरधातु के समतुल्य को ढूँढने के कुछ तरीके हैं । सिर्फ यह है कि पार्थिवों से समतुल्य को ढूँढना थोडा और मेहनती है । जो भी हो उस प्रकरण की ओर अब नहीं जाता । सिर्फ इस लेख का उद्देश्य सिर्फ इसकी ओर इशारा करने का रहा कि पूरे शरीर को और विविध शारीरिक अंगों को बाहरी दुनिया के विविध द्रव्यों से जो विविधमुखी समानताएँ हैं, उसे ढूँढना एक द्रव्य का विशिष्ट कर्म (प्रभाव) जानने का अनुमानिक तरीका है और वृद्धिस्समानैः सर्वेषां नामक सूत्रवाक्य इस निष्कर्ष के लिए एक संकेत है ।

प्रकृतियाँ

वारियर, पि. आर.*

ABSTRACT

Variations among men occur based on fundamental structural aspects. The word *prakrti* indicates these peculiarities. This meticulous study of *prakrti* is taken from the collection of essays *Ayurvedapadhanangal Avalokanangal*.

उद्भव और स्वरूप की दृष्टि से बहुत समान लगने पर भी परिपूर्ण स्वभाव समानतावाली दो वस्तुओं को प्रकृति में हम देख नहीं सकेंगे। लंबाई, आकार, स्वाद आदि की दृष्टि से उनमें अन्तर होगा। इसके लिए जड़-चेतन का भेद लागू न होता है। मनुष्यों के बीच यह अन्तर अधिक प्रकट हो जाता है। तन-मन की एकरूपता जुड़वां भाइयों के बीच भी पहचान न कर सकेंगे। विद्यार्थियों की बात लें। एक छात्र मोटा-मजबूत होगा। दूसरा छात्र दुर्बल और पतला होगा। तीसरा छात्र नाटा-मोटा होगा। एक छात्र अकलमंद होगा। दूसरे छात्र की बुद्धि कमजोर होगी। एक अदमी जल्दी गुस्से में आयेगा तो दूसरा शांत प्रकृति का होगा। एक छात्र प्रसन्न चित्त होगा तो दूसरा चिंतामग्न और गंभीर भाव का होगा। एक ही बीमारी से मुक्त हो गये दो आदमियों को देखें। एक तोंदवाला होगा। दूसरे की नसें मजबूत होगी। वह हँसमुख दिखायी पड़ेगा। आदमियों के बीच

यों कई अंतर दिखाई पड़ते हैं। ये अन्तर शरीर गठन की कुछ बुनियादी खूबियों पर निर्भर हैं। इन खूबियों को इधर 'प्रकृति' (temperament) मानते हैं। स्वास्थ्य और आयुबल के इच्छुक व्यक्तियों को इस प्रकृति के बारे में बारिक ज्ञानार्जन करना है। वैद्य शास्त्र के विद्यार्थियों के लिए वह अनिवार्य है।

दूष्यं देशं बलं कालमनलं प्रकृतिं वयः ।

सत्त्वं सात्त्व्यं तथाहारमवस्थाश्च पृथग्विधाः ॥

सूक्ष्मसूक्ष्माः समीक्ष्येषां दोषौषधनिरूपणे ।

यो वर्तते चिकित्सायां न स स्वलति जातुचित् ॥

(अ.ह.सू.)

दोषौषध निरूपण में प्रकृति के बारे में सूक्ष्मज्ञान मिलने के बारे में आचार्यों का अनुशासन यों मिल जाता है। शरीर

अनुवाद : डॉ. आरसु, कालिकट विश्वविद्यालय, केरळम - ६७३ ६३५.

प्रकृति के अन्तर के कारण एक आदमी का पथ्याहार दूसरे आदमी के लिए विषतुल्य बन जायेगा। दूध एक उत्तम आहार है। किन्तु कुछ व्यक्तियों के लिए वह विरेचन का कारण बनेगा। ये व्यक्तिगत खूबियाँ होती हैं। इसे अंग्रेजी में idiosyncrasy कहते हैं। यों एक ही रोगवाले दो आदमियों में एक ही दवा का प्रभाव भिन्न ढंग से पड़ता है। एक रोगी को वह प्रभावशाली लगेगा और दूसरे के लिए प्रभावहीन। चार व्यक्ति एक साथ सुबह को चलने निकलते हैं और उनपर बर्फ गिरती है। इन में से एक आदमी को जुकाम और सिरदर्द होते हैं। दूसरे आदमी को बुकार और संधि वेदना की बीमारियाँ होते हैं। तीसरे आदमी को खासी होती है और उसे छाती का दर्द होता है। चौथा आदमी सारी परेशानियों से मुक्त रहता है। विषूचिका जैसा अणुजन्य संक्रामक रोग भी सब लोगों को बराबर नहीं आता है। मनुष्यों के बीच का रोगाक्रमण विषय का अंतर भी शरीर गठन पर निर्भर है। अंग्रेजी में इसको diathesis कहते हैं।

ये प्रकृतियाँ कैसे होती हैं - इस पर भी सोचना है।

शुक्लार्त्तवस्थैर्जन्मादौ विषेणेव विषक्रिमेः ॥

तैश्च तिस्रः प्रकृतयो हीनमध्योत्तमाः पृथक् ।

समधातुः समस्तासु श्रेष्ठा निन्द्या द्विदोषजाः ॥

(अ.ह.सू.)

इस श्लोक के जरिए आचार्य का मकसद यह है - गर्भाधान के समय माता-पिता के बीजों में स्थित वात-पित्त-कफ (उनकी तुलनात्मक स्थिति) शिशु की प्रकृति को तय कर लेते हैं। जब दोषों के वृद्धिक्षय होते हैं तब रोगावस्था आती है। कभी मृत्यु की भी संभावना है। क्या किसी दोष उत्कट रहने पर गर्भाधान संभव होता है? इस प्रश्न के उदाहरण बताया गया है कि विष से ही विषकीड़े (toxic

microbacterium) होते हैं। यों त्रिदोषों में से एक या दो प्रबल बनते हैं। या तीनों का समान बल होता है। कुल सात प्रकृतियाँ होती हैं - वे वात, पित्त, कफ, वातपित्त, कफपित्त, वातकफ और समधातु प्रकृतियाँ हैं।

शुक्लशोणित संयोगे यो भवेत् दोष उत्कटः

प्रकृतिर्जायते तेन (सु.)

इस प्रकृति चिंतन में परंपरा (heredity) की समस्या भी शामिल होती है।

संयोगावसर पर स्त्री पुरुषों के अंड कोशों से स्त्री पुरुष बीज विसर्जित होते हैं। इनके अन्योन्य मिश्रण (fusion) के फलस्वरूप उस प्राथमिक गर्भगोल में जीवावेश होता है। तब गर्भाधान होता है। पुरुष बीज को पौरुष (sperm) और स्त्री बीज को यौवत (ovum) कहते हैं। संयुक्त पौरुष यौवतों का नाम कलल (fertilised ovum) है। शरीर असंख्य परमाणुओं से निर्मित है। शरीरावयवास्तु परमाणुरूपेण अपरीसंख्येया भवन्ति अति सौख्य्यादतीन्द्रियत्वादतिबहुत्वाच्च। तेषां संयोगविभागे परमाणूनां कारणं वायुः कर्मस्वभावश्च। (च.) ये परमाणु प्रतिनिमिष उत्पन्न होते हैं यों उनका विनाश भी होता है। इसको संगठक विघटात्मकज जीव्याणु परिपाक (constructive and destructive metabolism) कहते हैं। इन परमाणुओं को शलक (cells) कहते हैं। पहले बताये गये कलल भी एक शलक है। कलल अन्य सारे शलकों का मूल परमाणु है। देहारंभकमूलत्वं कललस्यांगीकृतं - कलल से उत्पन्न दूसरे शलकों से धातु उत्पन्न होते हैं। इसलिए उन्हें धात्वारंभक परमाणुधर्म भी प्राप्त होता है। कलल के बीच में नवक्रिया (nucleus) नामक एक मध्यबीज है। कललारंभक पौरुष यौवतों की भी अलग अलग नवक्रिया होती है। गर्भाधान के लिए यौवत की नवक्रिया में पौरुष, शक्ति से प्रवेश करता है।

ARYAVAIDYAN

पौरुष यौवत भी शलक के समान हैं। उनका अन्तर आगे के प्रतिपादन से स्पष्ट हो जायेगा।

हर शलक की नवक्रिया के अन्तर क्रमसोम (chromosomes) नामक एक प्रकार का तन्तुखंड एक निश्चित संख्या में विद्यमान हैं। ये क्रमसोम लिंग भेद और स्वभाव भेद के कारण बन जाते हैं। पौरुष यौवत स्त्री-पुरुषांडकोशों में निर्गमित होते हैं। इसके बाद परस्पर संयोग के पहले उनकी नवक्रिया के क्रमसोम आधा-आधा होकर विभक्त होते हैं। यों बंटे दोनों के क्रमसोम के आधे भागों में संयोग होता है। इस प्रकार उत्सर्जित क्रमसोम के यौवत को सिद्ध यौवत या अन्तयौवत (matured ovum) और पौरुष को अन्तपौरुष कहते हैं। इसकी पहली स्थिति में उन्हें क्रमशः प्राथमिक यौवत और प्राथमिक पौरुष कहते हैं। साधारणतया मानवजाति के एक शलक में 48 क्रमसोम होंगे। प्राथमिक पौरुष यौवतों में भी इतने ही क्रमसोम होंगे। दोनों से पहले 24 क्रमसोम (12 युग्म) विभक्त हो जाते हैं। पौरुष यौवतों के संयोग में दोनों के शेष 12 युग्म (24) क्रमसोम का मिलन होता है। पौरुष यौवतों के संयोग में दोनों के शेष 12 युग्म (24) क्रमसोमों का मिलन होता है। पौरुष यौवतों के ऐसे क्रमसोम विभाग के पहले मिलन को उत्क्रम विभाग और दूसरे को क्रम विभाग कहते हैं। यों उत्क्रम-क्रम विभाग के संयोग के कारण कलल की क्रमसोम संख्या शरीर शलक की क्रमसोम संख्या की दुगुनी नहीं बन जाती है। दो बीजों के 12 क्रमसोम युग्मों का संयोग होते समय कलल में 48 क्रमसोम ही होते हैं। बाद में उस कलल से निकलते सारे शलकों में यों 48 क्रमसोम ही होते हैं। स्त्रीबीजक के भीतर का हर क्रमसोमयुग्म स्त्रीरूपक क्रमसोम से उद्भूत होता है। इसलिए इसको स्त्रीयुग्म (xx pair) भी कहते हैं। इस प्रकार पुरुष बीज के भीतर के युग्म को स्त्रीपुंयुग्म (xy pair) भी कहते हैं। एक स्त्रीरूप क्रमसोम और एक पुंरूप क्रमसोम के मिलन से इस की उत्पत्ति होती है। विभागावसर पर अन्त पौरुष का आधा क्रमसोम अन्तयौवत के क्रमसोम

से मिलता है। अन्तपौरुष के अर्धभाग का स्त्रीजनक क्रमसोम और सदा स्त्रीजनक अन्तयौवत के अर्ध क्रमसोम जुड़ते हैं तो स्त्रीप्रजा का जन्म होगा। इसके विपरीत अन्तयौवत के स्त्रीजनक क्रमसोम का युग्मार्ध और अन्तपौरुष के पुरुषजनक क्रमसोम युग्मार्ध के बीच संयोग होता है तो पुरुष प्रजा का जन्म होगा। स्त्रीपुरुषक्रमसोमों के अन्योन्य संयोग में बलाधिक्य के अनुसार स्त्री या पुरुष का जन्म होता है - ऐसा सिद्धांत रखते हैं तो वह प्राचीन अभिमत के अनुकूल होगा।

हर क्रमसोम में जीन (gene) नामक वस्तुविशेष विद्यमान है। एक ही पंक्ति में धागे में पिरोये मोतियों के बराबर क्रमसोम में उनकी स्थिति है। इधर क्रमसोम का सूत्र और जीन को मोती के रूप में मान सकते हैं। माता और पिता से उद्भूत जीनयुग्म बच्चों के मानसिक और शारीरिक स्वरूप-स्वभाव की खूबियों को तय करते हैं। जीनयुग्म का हर एक जीन अलग अलग रंग, आदत आदि का वहन करता है। संयोग में एक जीन ज्यादा बल देता है तो उसके आधार पर स्वभाव तय हो जाता है। यह बहुत स्वाभाविक है। बलाधिक्य वाले जीन को निर्णायक (dominant) और दूसरे का पराजित (recessive) का विशेषण दे सकते हैं।

उपरोक्त क्रमसोम वर्णन के साथ आयुर्वेद वैज्ञानिक एक दूसरी बात भी जोड़ देता है। पौरुष यौवतों के अन्योन्य मिश्रण में क्रमसोमों के साथ उनपर आधारित वात पित्त कफ भी भाग लेते हैं। पौरुष यौवतों का सम्मिश्रण, क्रमसोमों का विभाजन, फिर हर एक शलक में होनेवाली परिणाम वृद्धियाँ-ये सब नवक्रिया रूपी वायु द्वारा नियंत्रित होते हैं। यह वायु हमेशा पित्त और कफ से संयुक्त रहती है। उस हालत में भी शलक का नियामक तत्व (dynamic principle) वायु ही है। हम मान सकते हैं कि उपरोक्त हर जीन एक विशेष अनुपात में त्रिधातुओं से मिश्रित है।

यह भी मान सकते हैं कि शिशु की आदतें क्रमसोमों के आधार जीन पर निर्भर हैं। किन्तु पैतृक स्वभाव को नियंत्रित करनेवाले बुनियादी तत्व जीन में विद्यमान वात-पित्त-कफ ही होते हैं। किन्तु लंगडा, गूँगा, अंधा या कोढ़ी के स्वभाव की विशेषताएं क्या उसकी शिशु परंपरा में भी आयेगी? आत्रेय ने इसका उत्तर दिया था। आत्रेय मत के अनुसार बीज, बीज भागों से संगठित है - कललं बीज इति शुक्ल शोणिते - चक्रपाणी। बीजभाग शरीर के विविध धात्वावयवों का प्रतिनिधित्व करते हैं। बीजस्यांगप्रत्यंग निवर्तको भागो बीजभागः - चक्रपाणी। इन बीज भागों को जीन मान सकते हैं। बीज के बीजभाग को रोग से विकलता आती है तो उस शरीर में भी ऐसी विकलताएं आयेगी अविकल बीजभाग से निकलते शरीर भाग सहज ढंग से विकसित होते हैं। यही आत्रेय का मत है।

यच्चोक्तं - यदि च मनुष्यो मनुष्यप्रभवः, कस्मान्न जडादिभ्यो जाताः पितृसदृशरूपा भवन्तीति, तत्रोच्यते - यस्य हांगावयवस्य बीजे बीजभाग उपतप्तो भवति। तस्य तस्यांगावयवस्य विकृतिरुपजायते, नोपजायते चानुपतापात्। तस्मादुभयोरुपपत्तिरप्यत्र (च. शा.)

ऐसे आर्जित स्वभाव परंपरा से संक्रमित नहीं होगी। भले ही इस प्रकार का एक तर्क है तथापि आर्जित स्वभाव के समग्र अध्ययन में 'उभयोरुपपत्तिरप्यत्र' के अनुसार नवीन आचार्यों ने दृष्टिकोण अपनाया है।

The whole question of inheritance of acquired characters, however, is still under discussion, and while it may be true, as Weisman states, that the inheritance of acquired characters is, inconceivable, still we must remember that it is perhaps inconceivable only because we have not a knowledge of the facts upon which it is based, if it is a fact,- (William A White M.D.) यों

प्रमाणित होता है कि ऐसे पैतृक स्वभाव परंपरा से संक्रमित नहीं होते हैं। आत्मजानि इन्द्रियाणि च भोगसाधनानि आत्मप्रतिबद्धकर्माधीनानि। तेन पिता यदि कुष्ठयपि भवति, बीजनदुष्टं भवति कुष्ठाधान त्वगादि जनकम्। (चक्रपाणि)

कोढ़ के बारे में और एक राय है - वे ज्यादा बढ़कर त्वगादियों को नियंत्रित करनेवाले जीन पर असर डालें तो शिशु के उन अवयवों में कोढ़ के लक्षण दिखायी पड़ेंगे।

यदा त्वतिवृद्धकुष्ठतया पित्रोर्बीजमपिकुष्ठजनक दोषदुष्टं भवति, तदा दुष्टत्वगादिबीजभागाद् कुष्ठ दुष्टैव त्वग् जायते - यदुक्तं दम्पत्योः कुष्ठबाहुल्यात् ज्ञेयं तदपि कुष्ठितं - (चक्रपाणि)

किन्तु शरीर पर (पौरुष, यौवतों पर भी) यह रोग त्रिदोष के द्वारा ही आयेगा। इसलिए परंपरा-स्वभाव के बुनियादी तत्व वात-पित्त-कफ ही साबित होते हैं।

हम पुनः प्रकृति की ओर लौटेंगे। पौरुष यौवतों के क्रमसोमों के मिश्रण के तौर पर वात-पित्त-कफों को मान सकते हैं। तब इस बात पर भी अनायास विचार कर सकते हैं ये प्रकृतियाँ कैसे बनती हैं। बीज संयोग के अवसर पर दो बीजों के त्रिधातुओं का परस्पर लय हो जाता है। इस विलय के अवसर पर कभी कभी उनका बल समान रहते हैं। समधातु प्रकृतिवाला शिशु शारीरिक और मानसिक तौर पर हर क्षेत्र में स्वस्थ रहेगा। किन्तु यह प्रकृति अत्यंत दुर्लभ है। किसी एक या दो दोषों अधिक बल से रहने के समय साधारणतया गर्भाधान होता है। ऐसे बच्चों में प्रबल दोषों की खूबियाँ दिखायी पड़ेंगी। एक कलल की दोषप्रकृति कभी नहीं बदलेगी। वही प्रकृति बच्चे के हर शलक और जीन में विद्यमान होगी। मानलें कि त्वचा के रंग को तय करनेवाले एक जोड़ी जीन है। एक माता का और एक पिता का हो सकता है। मानले, कि इन में से पिता के जीन का बलाधिक्य से होता है तब बच्चे के शरीर

का वर्ण पिता का होगा। किन्तु त्वचा का स्वभाव जीन की विशेष दोष प्रकृति के अनुसार होगा। अगर वायु का बलाधिक्य होता है त्वचा रूक्ष होगी। कफ का होता है तो त्वचा श्लक्ष्ण तथा शीतल होगी। पित्त का होता है तो त्वचा गरम होगी।

कुछ आचार्यों का मानना है कि समप्रकृति जैसी कोई अवस्था नहीं है। उसके लिए वे एक कारण भी बताते हैं। किसी भी दोष को बलाधिक्य न होने के ढंग से सही अनुपात में आहार करनेवाले आदमी नहीं होंगी।

नायम पुरुषस्तुल्याहारधृतमिवाहारमुपयुक्ते,
तेनावश्यमत्र वातादिष्वन्यतमोऽपिदोषो विकृतो भवतीति
भावः (च.वि.) (चक्रपाणि)

कुछ आचार्यों का कहना है कि समप्रकृतिवाले आदमी भी होंगे। वातप्रकृति, पित्तप्रकृति, कफप्रकृति जैसे प्रयोगों पर उन्हें आपत्ति है। उनका विचार है कि अगर दोष सम नहीं होते हैं, कोई एक दोष प्रबल बनें तो प्रकृति शब्द तब प्रासंगिक नहीं होगा। उस स्थिति में जन्म से वात के बलाधिक्यवाले आदमी को वातप्रकृतिवाला न कहकर वातज कहना उचित होगा। इसका अर्थ है कि वह आदमी जल्दी वात का शिकार बनता है। किन्तु स्वभाव वाली व्यख्या इधर प्रकृति के लिए सही है। प्रकृतिं इति स्वभावम् - (चक्रपाणि) प्रकृतिः शरीरस्वरूपम् - (अरुणदत्त - अ.ह.सू.)

भ्रूण परिपूर्ण विकासवाले शिशु के रूप में परिणत होता है। इस विकास के वक्त सारे शलक विभजनों में कलल का दोषस्वभाव दृढ़ ही रहेगा। शरीर के सारे शलकों में यह स्वभाव बना रहता है। वह आजीवन उसी स्थिति में रहेगा। प्रकोपो वाऽन्यभावा वा क्षयो वा नोपजायते प्रकृतीनां स्वभावेन जायते तु गतायुषः (सु.शा.) जीवन काल में वातप्रकृति को कभी भी पित्तप्रकृति या कफप्रकृति

के रूप में या विपरीत स्थिति में बदल नहीं सकते। इसी प्रकार समप्रकृति को अन्य किसी प्रकृति के रूप में बदल नहीं सकेंगे। समप्रकृतिर्वातप्रकृतिर्न भवति, वातप्रकृतिः पित्तप्रकृतिर्न भवति समप्रकृतिर्वा (चक्रपाणि)

शरीर पांचभौतिक है। वायु - पित्त - कफ क्रमशः वायु, तेज, पृथ्वी-जल का प्रतिनिधित्व करते हैं। इसलिए सुश्रुत ने दोषों को शरीर के उपादान कारण मान लिया था (देहसंभव हेतवः)। प्रकृतियों का प्रतिपादन करते समय उन्होंने उसे सीधे भूतों के साथ जोड़ा है।

शरीर के उपादान कारणों के तौर पर मानते समय दोषों से कुछ कठिनाइयाँ होती हैं। किन्तु शरीर गठन के स्वभाव को निर्धारित करनेवाले एक सहायक तत्व के तौर पर मानते समय एक दोष आजीवन काल तक दृढ़ है। प्रसव के बाद बच्चे को स्वतंत्र अस्तित्व और आहारक्रम आवश्यक हो जाते हैं। तब शरीर के दोष आगन्तुक कारणों से कठिन बन जाते हैं। किसी दोष की वृद्धि या क्षति होने पर रोगावस्था आ जाती है। यों संकीर्ण बनते दोषों को स्वस्थावस्था की ओर ले चलने के लिए औषधों का प्रयोग होता है। किन्तु जन्म के बाद पैदा होनेवाले दोषों के वृद्धि-क्षय, शरीर की सहज दोषप्रकृति को दूर करने के लिए सक्षम नहीं है। याने किन्हीं आगन्तुक कारणों से वायु का शरीर में क्षय हो जाता है तो प्रकृतिजन्म वातदोष का क्षय होकर शरीर में समप्रकृति का आना अनिवार्य नहीं है। एक शरीर में जन्म से जिस दोष का बलाधिक्य होता है, उस दोष की शरीर में अपेक्षतया जल्दी वृद्धि होती है। उपादान कारण के बलपर होनेवाले दोष और दोष प्रकृति का संबंध इस प्रकार है। उदाहरण के तौर पर वात वृद्धि का कारणभूत शैत्य से पित्त प्रकृति वाले आदमी की तुलना में, वातप्रकृति वाला आदमी जल्दी बीमार हो जायेगा।

किसी एक दोष के बलाधिक्य होने की स्थिति में पौरुष यौवत दोषपूर्ण बन जाते हैं तो कैसे गर्भाधान होगा?

इस का उत्तर आचार्य ने दिया है। यह विषेणोव विषक्रमेः उस उत्तर का भाग है। सुश्रुत भी वही उत्तर देते हैं। दूसरे जीवों को मार डालने का सक्षम प्रखर विष वहन करनेवाले साँप विष के शिकार नहीं बनेंगे। क्यों कि साँप और उसका विष सहजात हैं। यों प्रकृतियाँ शरीर को प्रदूषित नहीं करतीं।

विषजातो यथा कीटो न विषेण विपद्यते

तद्वद् प्रकृतयो मार्त्यं शक्नुवन्ति न बाधितुम्

(सु.शा.)

इसलिए जन्म के बाद सहज रूप में जीवों को होनेवाली सारी मानसिक शारीरिक स्वभाव विशेषताओं को प्राकृत कह सकते हैं। वे सामान्यतया शरीर को रोगावस्था की ओर नहीं ले चलेंगी।

परमाणुविज्ञान, मनोविज्ञान और मनोरोगविज्ञान में नये अनुसंधान चल रहे हैं। वे प्रकृति तथा शरीर विज्ञान के भिन्न पहलुओं के संबंध में प्राचीन आचार्यों के निष्कर्ष और सूत्रोत्पन्न परिभाषाओं के सौन्दर्य को अधिकाधिक सही सिद्ध करते हैं।

बृहच्छारीरम् (संस्कृत शारीर ग्रन्थ)

आयुर्वेद पर जो यह शिकायत है कि उस का शरीर विज्ञान अपूर्ण है; वह दूसरे वैद्य पद्धतियों के समान योग्यता नहीं रखता, इस का वैद्यरत्न के इस अनुपम, बृहत् गन्थ से निराकरण किया जाता है। सरल संस्कृत भाषा में लिखे हुए इस ग्रन्थ में नवीन शारीर विज्ञान से मेल कराते हुए, आयुर्वेद के शारीर विज्ञान को विस्तार से वर्णन करके विकसित किया है। सारी बातों का तत्तद् अनुयोज्य नक्शों के साथ सूक्ष्म रूप से प्रतिपादन किया है।

आयुर्वेद के अध्यापकों तथा छात्रों के लिए यह अमोल निर्धि है।

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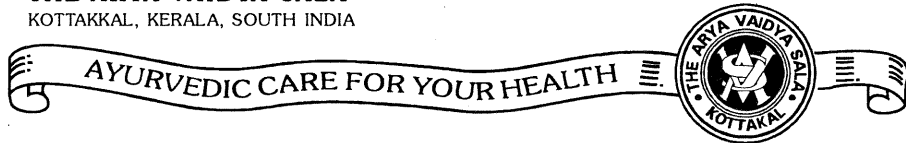
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