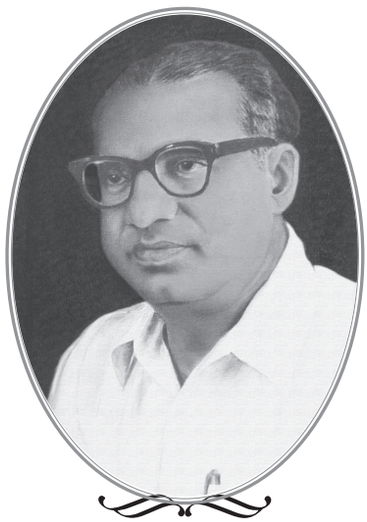
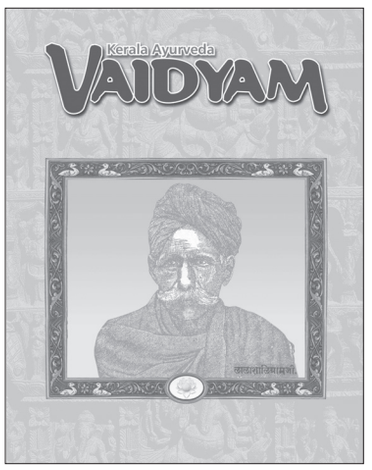
Kerala Ayurveda
VAIDYAM
A JOURNAL ON EVOLVING AYURVEDA
Vol-I. Issue 1. Jan.-Mar. 2008



Aayurvedaacharya Vaidyan
K G K Panicker
Founder of Kerala Ayurveda Limited

The cover

The cover depicts an etching portrait of Sri Saaligraama Vaisya, author of Saaligraama Sabda Saagara alias Aayurvedeeya Aushadhi Kosa. He lived in Dindapur in the city of Muradabad on the bank of the sacred river Ramaganga. He has also authored ayurvedic books like Bhaarata Bhaishajya Bhooshana, Saaligraama Nighantu Bhaaskara, Raaja Nighantu Darpana and Dhanvantari Cikitsaa. His Hindi commentary on Bhaava Prakaasa is notable. Please read more about Saaligraama Aushadha Sabda Saagara in the heritage column of this issue.



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Writing on Ayurveda

Writing on Ayurveda is not an easy task, especially in English and other foreign languages. It is so because writing is for others to read and readers are often very obstinate that they should understand what they read. Unfortunately most of the ayurvedic writers seem to write for themselves and do not much bother about the readers. They write as a ritual and in rituals, the result is not in the hands of the performer, it is usually procrastinated by divine powers. Being one among the genus of ayurvedic writers, I have no intention to exempt me from the above allegation. In fact, I am scribbling down my own self-criticism and generalizing it, perhaps to lighten my own sin of ambiguity as an inevitable common error. I hope that, if not me, other writers will be benefited by this self-criticism. I have been told by many that my writings are far from being simple, though I rate myself as a transparent writer.

Writing on any science requires a special language. It is so because sciences have their own vocabularies. Though many of the terms of these vocabularies are adopted from the common languages and convey different connotations, as technical terms they work under specific definitions. For example, terms like force, displacement and gravity in physics are also met with in common language. But in physics these terms have restricted scientific meanings and they are well defined. In physics, force means an effect that causes things to move in a particular way. But according to Oxford Advanced Learners Dictionary the same word has eleven other meanings directly or indirectly connected with the same meaning. So when we speak of a 'law in force' or the 'Air force' there is implication of action, yet it is much different from the force defined by physics.

Formerly all sciences of the world used words from classical languages for coining their terminology. Knowledge was considered to be a precious possession of the elite and was not the cup of tea of the commons. Hence, scientific writings were coded in such a way so that the lay public will not be able to decipher and apprehend the secret scriptures.

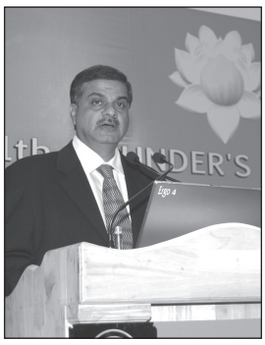
In the western world scientific writings were in Greek and Latin. Even when the writings were in English or French, at least the technical terms were inevitably Greek or Latin. Now the trend has changed. Everybody speaks about science for the common man. Science has at least a branch called popular science. Keeping aside scholarly bombastic eloquence, scientists have started singing in simple language, so that they can communicate with the grass root level. Technical terms are now taken from the ordinary language. Latin and Greek have lost their monopoly in the field. Nevertheless, there are many who sing and love 'the old songs'. For example, in Moscow, doctors write prescriptions in Latin and not in Russian. Prescriptions are not for the patients. They are for the dispenser. The universal consensus that the patient has the right to know is effectively let down with Latin prescriptions which are mere Greek to the patient. This provides sufficient loopholes for conspiracy with the doctor and druggist. In Russia a medical student has to study two languages - Russian and Latin. (Just compare the dilemma of the ayurvedic student who has to study Sanskrit. Formerly engineering students in India had to study German because innovations in engineering mostly came from Germany.) But I am sure; this obsolete practice cannot escalate even in a conservative country like Russia. In India, Latin terms have withered away from medical prescriptions long before. Instead of B.I.D doctors now write 'twice daily' or even use a more expressive symbol '1-0-1'. So far so good.

(contd. on page 4)

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Welcome 2007

Dr K. Anilkumar



Today we are here to celebrate the Founder's Day of Kerala Ayurveda Ltd. and to participate in the intellectual conclave held in connection with it. Before spelling anything more, it is my humble duty to bow before the memories of the great doyen of Ayurveda, Vaidyan KGK Panicker, my father and founder of this prestigious Ayurvedic institution. As you are all aware, this company, Kerala Ayurveda Ltd. has passed through various phases of metamorphosis right from a proprietary concern to a corporate organization operating nationally and internationally. The seed of the whole system was sown by Vaidyan KGK Panicker through starting a humble vaidyasaala on the banks of the river Periyar. Through out all the stages of its development, the organization was guided by the philosophy and vision of its founder. It is in his name that we are presenting every year the Vaidian KGK Panicker Memorial Award to the best outgoing graduate from Ayurveda Colleges of Kerala on the founder's day. This year we are instituting one more annual award, the Kerala Ayurveda Research Award. This award is at a national level and is based on the best PG thesis of the year. Details regarding these awards will be cited here soon and hence I am not elaborating the subject. One thing worth mentioning is that the Kerala Ayureda Research Award is prompted by sincere intention of the company to better the research arena of Ayurveda. One may think that the awards should have been at a wider level embracing all walks of Ayurvedic research. But we decided to confine to research at academic institutions, that too at postgraduate level, as this form the primary hatcheries of Ayurvedic researchers and it is at this level that Ayurvedic research is to be promoted, mended and perfected. Hence the Kerala Ayurveda Research Award is instituted to develop postgraduate education and research in Ayurveda.

Higher education in Ayurveda at various levels such as PG Degree, PG Diploma, Doctoral and Post-doctoral studies are very important in the contemporary global scenario of Ayurveda. We want highly qualified postgraduates and persons with doctorates in Ayurveda to converse with the global enthusiasts in Ayurveda and to quench their inquisitiveness satisfactorily, scientifically and logically. Graduates are trained to practice. But their exposure to research is highly limited. Intense studies of Ayurveda are intended at the PG and higher levels in Ayurveda. In fact the area of higher education in Ayurveda is still in its making.

The international scene is much different. The global population seeks to get medical advice from the most qualified persons because medicine is a matter of life and death. It is in this context that higher education in Ayurveda deems relevant. This is the real area, which should strengthen Ayurveda and make it competent to meet the requirements of future. But it is unfortunate to note that even those who acquire PG in specialized subjects are not utilizing the faculty as they seek employment as general practitioners. Though they are trained to research, they do not pursue research. Hence the goodness of specialization in various branches of Ayurveda is not transcended to the general public.

We have to probe into causes of this phenomenon. Is the curriculum or design of the courses is defective? Is the defect at the implementation level or in the machinery implementing them? There is urgent need to turn our search light to this area. Hence we are contemplating together in today's intellectual conclave on the field of higher education in Ayurveda. All our previous intellectual conclaves were based on research. This too is, since higher studies are invariably linked with research as research forms an essential component of higher studies.

Dr K. Anilkumar
Executive Director, Kerala Ayurveda Ltd.

(contd. from page 2)

The only writing of the majority of the medical practitioners is the writing of the prescriptions. Now there is no vent for ambiguity in these precious scribbling. Thanks for the computers. There were days when people took friendly letters from doctors to the nearest drug store to decipher and were promptly dispensed with pound bottles of tonics.

Ayurvedic writings in English as well as in regional languages cannot be generally apprehended by the target group. Just think of the following sentence. "Vaata is a dosha which in avikritaavasthaa blesses with utsaaha, ucchvaasa, nisvaasa, ceshtaa, vegapravartana, samyak gati of dhaatus and paaṭava of aksha." Do you think that an Englishman without mastery in Sanskrit will be able to make any sense from this sentence? If it is not for the reader who has a working knowledge in English, why should we write in English? I would rather like to write the same as " Vaata is a humor, which when in normalcy is responsible for enthusiasm, respiration (inspiration and expiration), voluntary actions, reflexes, proper transformation and transport of tissues and acuity of sense faculties." Note that I have retained a Sanskrit term –vaata. Even this could be replaced by the term 'Wind'. But there should be general scientific consensus about the use of such terms. Even when most of the Sanskrit terms are replaced with English equivalents, some very common key Sanskrit terms can be retained. There is no harm in it. Here I have suggested the term "wind' and not 'air' as the term vaata is from the root 'vaa' which means movement. Air does not imply movement, but invariably wind is always on the move. Instead of 'acuity of sense organ' I have used 'acuity of sense faculty', as Ayurveda differentiates the sense organ as the seat of the sense faculty. In modern physiology such a differentiation is lacking. Yet to do justice to the Ayurvedic concept, the term 'sense faculty' is useful.

I am not exaggerating. Just go through any reputed English translation of any classical treatise of Ayurveda. You will find it for yourselves. Some translators are kind enough to provide English equivalents of some of the terms, not all, in parentheses. Instead of putting the English term within brackets, why can't we keep the Sanskrit term within brackets? For a person reading an English translation, English should be continuous. My Russian interpreter Maria (calling herself as Meera as she is an indologist) was always scolding me for the profuse use of brackets in my lecture notes. I am incorrigible. Even in the sentence referring to her here I have used brackets. It is true that commas, semicolons, brackets, asterisks, footnotes, endnotes, italics etc substantially curtail the readability of the passages. But when we are insistent to keep Sanskrit terms side by side with English terms, brackets are very handy. We have a premonition that only Sanskrit terms can convey the ayurvedic ideas. It is not always true. We can define words of any language as scientific terms. All sciences are doing it. We also should be able to do so if we really want to globalize Ayurveda. Using Sanskrit terms when we can do without them is a sin. For example, why should we use the term 'ushna' in an English writing when the term 'hot' will convey the same meaning?

I feel that most of us are identifying Sanskrit as inseparable from Ayurveda. This again is a scholastic conviction. We are used to it. Well and okay. It is our habit. But it should not be our addiction. Sanskrit is a rich language. I admit. But that doesn't mean that Ayurveda should be always on the crutches of Sanskrit. All sciences use technical terms. When technical terms are coined or first introduced, they are defined. The same pattern is to be followed for Sanskrit terms too. In that case, why can't we introduce English words in English writings and define them? It is possible. But there is a problem.

Coining and defining scientific terms is a specialist's job. Authors or translators are not usually autho-

rized to do the job haphazardly. For all branches of sciences there are international conferences to coin and accept terminology. We also have international conferences conducted by various agencies. But our conferences are mainly utilized to proclaim the greatness of Ayurveda and not to generate any scientific advancement. Our conferences are mere masses. Masses cannot undertake responsible scientific activity. We want intellectual conclaves and workshops for serious deliberations on science. Coining nomenclature is a serious scientific activity. The Government of India is conducting workshops on Ayurvedic terminology in various states. The main intention of these workshops is to introduce Hindi terms. Hindi terms in place of Sanskrit terms will not contribute to the global growth of Ayurveda. What we want is authentic workshops to coin English terminology for ayurvedic technical terms. This is not an easy task. It requires homework and repeated discussions spread over a pretty long period. This should be guided and managed by an authentic agency.

Now each English author on Ayurveda coins and uses his own English terms. Such terms are often bitterly criticized as to be erroneous or worthless or at least blamed to convey wrong notions. But I do not find any crime in coining terms by authors. Sooner or later only apt terms will be retained and erroneous or defective ones will be promptly rejected. For example, many authors use the term 'fire' for the Sanskrit term 'agni' in Ayurveda. Outside Ayurveda, the word agni means fire. In Ayurveda it is the biological fire. If the Sanskrit term agni could mean biological fire in Ayurveda, the English term 'fire' also could mean biological fire in the context of Ayurveda. Remember that though the technical terms are identical in form with words of common language, they are not identical in meaning or the object expressed.

We could find similar pattern of defining in ayurvedic treatises. The term dravya is defined as substance (something where attributes and or action are inherent and capable of being the material cause of attributes, action and other substances) and includes even concepts such as time and direction. But in ayurvedic pharmacology the same term is redefined and restricted as 'formed of the five elements'. If Sanskrit terms are to be redefined at every context, why can't we define and redefine English words as Ayurvedic terms for writing Ayurveda in English? Here I am referring to English as a representative of world languages. It can be French, Spanish, Russian, German or any other language as the case may be.

We find that writers of ayurvedic books on regional languages have coined ayurvedic terms in regional languages. They were acceptable to the public. This method can be applied to foreign languages too. When unanimously accepted Ayurvedic terms are lacking in English etc writers are compelled to coin their own technical terms. As each writer in the field is using different terms for the same Sanskrit term, readers find it very difficult to apprehend all these terms. As it is, there are thousands of ayurvedic technical terms in Sanskrit. To have different English equivalents for each of them makes things worse. Further, Sanskrit texts use many synonyms for the same technical term. Thus *vaata, vaayu, pavana, pavamaana, prabhanjana, sadaagati, maaruta, anila* etc. are used as synonyms of the humor vaata. Such synonyms differ in their literal meaning slightly but the technical meaning is the same in all the cases. Sanskrit treatises used synonyms to suit the meter of the verse order and for alliteration. In modern English writings in prose order, synonyms are not necessary. We may use only one specific technical term for a specific object and avoid confusion. Our classical authors were literary wizards too. Hence when a humor was in normalcy and functioning properly, instead of *dosha* they used the term *dhaatu* and when it was in a denatured state worthy of elimination, they termed it *mala*.

A very important thing in scientific writings is that there should be at least one person who understands the writing – the author himself. I am pointing

out this because many writers do not seem to understand what they write. This is due to the over use of Sanskrit in the articles. It seems that many are using Sanskrit terms without really knowing their meanings and implication. I am not making this accusation point blank. Let me confess that as a beginner in writing, I have used the same technique many times successfully and safely. When the understanding is poor we tend to use jargons. When there is clear understanding we are able to speak and write in simple language. Hence the best way to write Ayurveda is to understand it properly.

Trying to put all the implications of a Sanskrit term in one English term is a futile exercise. Rarely it may be possible; but not always. Hence if we are not satisfied with a single English word we can use two or more words. According to Susruta, a technical term may be of one, two or more words. We may also use compound words. Many technical terms is Sanskrit too are compound words. See the term *vicitra-pratyaya-aarabhdha-dravya*. Thus if we feel that the term 'fire' is inadequate we may use the term 'biological fire' or even the compound word 'biofire'. But in translating we should not tamper the ayurvedic sentiment of the term. For example *agni* should not be translated as enzyme even if enzymes are doing the job of *agni*. The term enzyme in place of *agni* may generate categorical misrepresentation in the reader when we detail the factions like *bhoota-agni* and *dhaatvagni* because in many cases the term agni is a collective name for many enzymes. For example, *jat̲haraagni* is the collective name for all digestive enzymes and even bile.

Another difficulty with Sanskrit terms is that some of them are having different meanings in other languages. For example *vaata* means cotton in Russian. Sometimes such meanings may be obscene. For example the term *manda* in Sanskrit means female genitalia in Russian slang. While I was teaching the properties to Russian students they were giggling at the term *manda*. I did not understand the reaction until some one else pointed out the fact to me later.

Writers convey their convictions too. There is nothing wrong in presenting convictions. But the writer should be convincing. In scientific writings new ideas are to be validated with accepted scientific norms of validation. If not, the writer is not contributing to science and is fiddling to his own tunes. Many writers in Ayurveda do so. Many want to elevate the spirituality of Ayurveda. Some want to make it an herbal system. Yet others want to make it vegetarianism. All these ideas have their limitations as Ayurveda will not accommodate in the cage of such convictions. I have chanced to meet a Muslim tabalist from South Russia who turned to vegetarianism as he took interest in Ayurveda. He was astonished to note that I, an ayurvedic professor by profession, am having non-vegetarian diet. I told him that eating meat is not banned in Ayurveda and at many occasions Ayurveda prescribes non-vegetarian dishes for the patients. He commended that my understanding of Ayurveda is poor. His teacher of Ayurveda at Petersburg, a Russian business man importing Ayurvedic medicines, is translating Ashtaanga-Hr̲daya into Russian and in doing so he is eliminating all references of meat from the text. This elimination therapy, I am sure, will suffocate Ayurveda to termination. But such attempts are not new. Kalyaan̲a-kaarakam is a Sanskrit Ayurvedic treatise popular in Karn̲aataka. It was authored by a Jain. He has changed the mythology of the descent of Ayurveda to match with the Jain mythology. It is okay. After all it is mythology. But he has removed honey from Ayurveda and has suggested old jaggery in its place. Jains do not use honey as it involves killing of bees for the collection of honey. They believe in nonviolence. But, to me, their nonviolence is a violent assault on Ayurveda.

Dr. C.R. Agnives
Editor in Chief, Kerala Ayurveda Vaidyam

Kerala Ayurveda VAIDYAM A JOURNAL ON EVOLVING AYURVEDA

Yoga and Ayurveda for positive health

Dr. N.H. Kulkarni.

INTRODUCTION:

In the recent past Yoga has been evolved as a separate science and art of life. In these days it has been advocated as a ray of life; a kind of psychosomatic preparation for spiritual uplift.

Patanjali being heavily influenced by atheistic writings of Saankhya-yoga did not concern himself seriously for such transcendental, blissful or ego-dissolving experiences. Primarily, Patanjali yoga handed over to millions of practitioners as a set of exercises that appreciably improve the health of a person physically, mentally, as well as systematically in social life. The utility of yogic exercises for a commoner should therefore be assessed at the grosser levels of health and fitness.

Yoga being a module of many rules, influences almost all aspects of our life, like the holy Ayurveda, the science of life i.e., food and nutrition, metabolism, physical and social habits, emotional attitudes and many such common factors. The board spectrum of influences makes it rather difficult for the modern scientists to establish experimentally the cause and effect relationship of diverse parallel influences

Ayurveda aims at maintenance of health of healthy individual *(svasthasya svaasthya rakshaṇa)* and treatment of diseases of diseased *(aaturasya vikaara prasamana)*. In this view of Ayurveda, the state of *svaasthya* is nothing but the proper functioning of vital factors like *dosha*s (physiological representatives of the body), *dhatus* (anatomical structures of the body) and *agni* (digestive and metabolic fire) along with clarity of soul *(aatmaa)*, sensory faculties *(indriya)* and mind *(manas)* in the maintenance of health. The same has been taken care of by the science of yoga too. The word 'yoga' has been derived from the root word *'yuj'*, which means, 'to unite'. Hence, on the basis of root word, Yoga is that science by which one can be able to join the personal soul with the cosmic soul *(jeevaatmaa* with *paramaatmaa)*, which is considered as the state of ultimate liberation *(moksha)*.

Patanjali defines yoga as a process of gaining control over mind, barring of all mental modulations *("yogah cittavṛtti nirodhah")*. One who practices yoga attains control over mind *(manas)*, intellect *(buddhi)*, and ego is on *(ahankaara)* and will not have attachment to the five quanta *(panca tanmaatras)*. Thus he considers each and every substances like – mud and gold equally. In this state he is considered as to have ascended the phase of union *(yogaaroodha)*.

The goal of both Yoga and Ayurveda is one and the same i.e., salvation *(moksha)*. Both the sciences deal with the person with six components *(shad-dhaatuka purusha)*. Ayurveda mainly deals with the health and diseases whereas yogic approach is to join the soul with the cosmic soul during one's life itself. To achieve this, eight steps of yogic practice and some other procedures are

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mentioned. Ayurveda, the holistic science of life, has adopted some parts of yogic science, which can be explained by the fundamental theory of the humors.

In this advanced era, because of advancement and modernization, each and every individual has to pass through stress and strain, which results in a number of psychological and psychosomatic disorders like high blood pressure, Diabetes mellitus, Acid peptic diseases etc. All these ailments have become headaches to the medical field but yoga has the answer for these ailments. Hence, yoga is reputed internationally as a popular branch of preventive medicine.

Difference between Yoga and Exercise

Most of the people confuse yoga with exercise. Hence it should be cleared that yoga prepares an individual mentally, physically and socially whereas, exercises can only increase the tonicity and strength musculature. Exercises need about 10 – 20 cal of energy whereas, yoga needs hardly 3 – 4 cal.

Types of Yoga

Many confuse yogic procedures *(kriyaa)* and postures *(aasana)* with different forms of yoga. procedures and postures are some practical aspects of yoga. The following are the types of yoga.

1. Hatha yoga: This form of yoga is best known and is widely practiced all over the world and is the subject matter of the majority of the yogic manuals. This type of yoga emphasizes in the physical aspect of Yoga and insist mainly on postures *(aasana)* and breath control *(praanaayaama)*. In Ayurveda before applying rejuvenation *(rasaayana)* and reproductive medicine *(vaajeekarana)* the body is cleaned by means of purification therapy *(panca-sodhana)* In the same way, yoga also attempts to purify the body using *'shatkarma'* before the practice of "hatha yoga". These six procedures are:

- ***Nauli*** – control of rectii.
- ***Dhauti*** – cleansing of the intestinal tract up to stomach by using water, cloth or a stick *(danda)*.
- ***Basti*** – enemata.
- ***Neti*** – cleansing the nasal passages by using water, thread *(sootra)*, milk *(dugdha)* or ghee *(ghrta)*.
- ***Kapaala-bhaati*** – stimulation of brain cells.
- ***Traataka*** – cleansing eyes by gazing on the flame a lamp or at a point.

2. Raaja yoga: This is considered royal because, by its practice yogi achieves total control over his physical and mental attributes and becomes ruler over his mind. Raja yoga also includes the steps of hatha yoga. In other words, raja yoga is the second state of hatha yoga.

3. Jnaana yoga: This is the path of spiritual knowledge and wisdom.

4. Bhakthi yoga: This is the yoga of strongly focused love, devotion and worship. Bhakthi yoga is accessible to those, who have been gifted with highly devotional temperaments.

5. Tantra yoga: The epithet *'tantra'* is applied as a general term to distinguish the physiological systems from those of non-physiological. It is practiced all over India, but mainly in northern parts of India.

6. Mantra yoga: The practice of mantra yoga influence consciousness through repeating certain syllables, words or phases. This is beneficial to achieve mental peace and mental concentration.

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Amṛtottaram Kashaaya - Review

Dr. K. Sasidharan

This is a widely used formulation in clinical practice due to its efficacy in the management of fever (*jvara*) and could be used irrespective of "*Dosha* combines". This contains only three ingredients i.e. dry ginger (***naagara*** - *Zingiber officinalis),* Tinospora (***gu<u>d</u>oocee*** - *Tinospora cordifolia)*and rind of chebulic myrobalan fruits (***hareetakee majjaa***-*Terminalia chebula)* in a proportion of 1:3:2 where 8 grams (*2 kazhancu*) 24 g (6 *kazhancu*) and 16 g (4 *kazhancu*) of the above medicines are taken respectively in a standard preparation. This particular formulation is not mentioned in the three major triad of treatises of Ayurveda (*br<u>h</u>at-trayee*), but has been in practice among the physicians of Kerala, hence is described in Sahasra-yoga, a book of formulations compiled in Kerala. It is also known as ***naagaraadi kashaaya*** in some local texts. The above ratio of the ingredients is described in a poetical manner relating to the number 8 which incidentally coincides with the 8 mythological elephants (*ash<u>t</u>a-dik-gaja*) carrying the divine guardians of the 8 directions. The elephants, their 24 forelimbs (including the trunks as forelimb) and their 16 eyes are considered in the calculations. The 1/4th of 8, 24, and 16 becomes the actual quantity (according to the Keralite table of conversion) of the ingredients respectively in this formulation. The decoction (*Kashaaya - kvaatha*) is to be prepared as per the directives of <u>S</u>aarngadhara and the dose is to be taken usually with a pinch of jaggery (raw sugar) as an adjuvant. The pharmacological principles of ingredients as per Bhaavaprakas<u>a</u> nighantu are given as table.

Dry ginger due to its powerful 'fire' (*agni*) fraction helps dry up the water principle (*jala bhaava*) in the GIT (*kosh<u>t</u>a*).This drug is ideal in the state of indigestion (*aamaavastha*), indigestion due to Kapha (*aama-ajeerna*), local distension of abdomen (*gulma*), cough (*kaasa*), breathlessness (*<u>s</u>vaasa*), vomiting (*chardi*), cardiac disease (*h<u>r</u>droga*), flatulence (*aadhmaana*), running nose (*prati<u>s</u>yaaya*) and neurological disorders (*vaata roga*).

Tinospora is ideal in diseases like fever (*jvaram*), rheumatic disease involving joints (*vataraktam*), diabetes (*prameham*), dysuria (*mootrak<u>r</u>chram*), skin diseases (*tvagroga*), jaundice (*kaamalaa*) etc.

Chebulic myrobalan is used in diseases like diabetes (*prameham*), irritable bowel syndrome *(grahan<u>e</u>e roga*), cardiac disease (*h<u>r</u>drogam*), jaundice (*kaamalaa*), tympanitis (*Anaham*), disorders of liver and spleen (*Yak<u>r</u>t-pleehaa-roga*), calculi (*a<u>s</u>mari*) and advanced dermatoses (*kush<u>t</u>ham*).

As the above formulation is prescribed in all humoral combinations (*Dosha* combines) in the treatment of fever (*jvara chikitsaa*), it is interesting to know its pharmacological action according to Ayurveda. Transfer of heat (*ush<u>n</u>a* - a*gni*) from the GIT *(kosh<u>t</u>ha)* to the periphery is the important event in the pathogenesis of fever (*jvara sampraapti*), mentioned in classics as rejection of fire outwards (*nirasya jvalanam bahi<u>h</u>*). This causes a non-linier distribution of heat in the system leading to rise in temperature. The analogy depicted here is to the anguish of the Lord <u>S</u>iva is also much interesting. It is logical to derive the hypothesis that in the pathogenesis of fever the micro level analysis reveals a shift of heat, an associate property of Pitta, to the periphery which in turn results in the simultaneous genesis of state of indigestion (*amaavastha*) and occlusion in canals.

Dr. K. Sasidharan MD (Ay)
Medical Superintendent, Kerala Ayurveda Hospital, Aluva

Drug	Rasa	Guna	Veerya	Vipaka	Karma
Naagara	***Kaṭu*** (acrid)	***Laghu*** (light) ***Snigdha*** (unctuous)	***Ushṇa*** (hot)	***Madhuram*** (sweet)	***Paacana*** (digestant) ***Rucya*** (appetizer) ***Graahi*** (constipating) ***Soolahara***(analgesic) ***Stambhaghna*** (relieving stasis)
Gudoocee	***Tikta*** (bitter) ***Kashaaya*** (astringent)	***Laghu*** (light) ***Snigdha*** (unctuous) ***Ushṇa*** (hot)	***Ushṇa*** (hot)	***Madhuram*** (sweet)	***Rasaayana*** (rejuvenating) ***Deepana*** (carminative) ***Samgraahi*** (constipating) ***Daahaghna*** (relieving burning sensation)
Hareethakee majjaa	***Madhura*** (sweet)	***Laghu*** (light) ***Rooksha*** (dry) ***Sara*** *(s*preading/ flowing)	***Ushṇa*** (hot)	***Madhuram*** (sweet)	***Anulomana*** (carminative) ***Deepana*** (carminative), ***Rasaayana*** (rejuvenating) ***Bṛmhaṇa*** (nourishing) ***Stambhaghna*** (relieving stasis) ***Cakshushya*** (good for eyes) ***Aayushya*** (prolongs life)

The transfer of heat deprives Pitta of its digestive action (*paacana karma*) at its sites and the unctuousness (*snigdha guṇa*), an associate of Pitta, facilitates the over-hydration in the canal system (*srotas*) leading to the early symptomatology in fever (*jvara*). It is also to be noted that the transfer of heat is basically facilitated by the humor Vaayu (*Vaata*) which could be related to the thermo-regulating mechanisms in the body. Such events can also occur in relation to the fire in tissue levels (*dhaatvagni*) in particular conditions. The heat transfer is concerned with temperature and flow of heat whereas the temperature represents the amount of thermal energy available and heat flow is the movement of thermal energy from place to place depending on the consistencies of various mediums (tissue structures) in the system. Hence the management of fever (*jvara*) initially could be based on the following aspects

1. Reduce the over-hydration in canal systems (*srotas*) using the principle of digesting the undigested (*aama paacana*) without causing tissue damage.

2. Regulation of heat transfer and bringing back the linear distribution of heat by controlling the humor Vaata

These two are equally important as any one correction will not serve the purpose of the complete cure of the illness. *Amṛtottaram Kashaaya* brings forth the wonderful dual action while protecting the tissue principles in channels with the rejuvenating (*rasaayana* - antioxidant) action of tinospora and chebulic myrobalan whereas dry ginger helps metabolize the embedded undigested materials (*aama*) in the corresponding sites. The unctuousness (*snigdha guṇa*) of the ingredients keeps an important role in maintain-

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Kerala Ayurveda VAIDYAM A JOURNAL ON EVOLVING AYURVEDA

Kashaaya to Tablet

Dr. C.I. JOLLY

Herbs have provided the basis for the great medical systems in Human history. The great Islamic medical eras, the Ayurveda of the Indian subcontinent, the Chinese systemization and many smaller cultural traditions had their places in medicine. All these systems were formed in large part by the peculiar characteristics of their materia medica; plants have clearly demanded and been granted their own therapeutic approach.

Researchers have no doubt that nature is still the preeminent synthetic chemist and infinite resource of fascinating chemical constituents with actual and potential effects on human body.

Herbal pharmaco-vigilance is the need of the day. Otherwise our preparations like decoction (kashaaya) will vanish one day. India has so many ancient systems of medicine like Ayurveda, Siddha, Unani etc., which are being practiced from time immemorial and it is a pity that proper pharmaco-vigilance is lacking.

In this context the following parameters can be considered:-

- Traditional scholarly system may be accepted as such.
- Traditional popular practices may be reassessed and then accepted.

Therefore, to establish the potentiality of traditional medicine, research has to be simultaneously conducted on important aspects to meet the requirement of the society where they have to serve. It is essential to rationalize the utility of positive and judicious use of modern scientific methods that pertain to the development of Ayurveda.

Throughout the world many drugs and foods are used as a part of the life for diets which are known to be for nutritional and therapeutic purposes. In India, the traditional Indian systems of medicine are being used to maintain general health of the people. While reaching a status of globalization, the scientific community should create awareness about the excellence of traditional practitioners and their medicines and revalidate, if necessary, and bring a better living atmosphere for the future generations. The present generation is in a position to do so. It is a moral and ethical responsibility of the traditional healers along with scientific community to gain knowledge, which has been created and established.

If you analyze throughout the world, traditional medicines constitute the basic physicochemical properties of the medicines and this characteristic phenomenon was used to understand the chemical and therapeutic efficacy and quality of the medicines. Similarly the physicochemical parameters of the human body and its various parts were well correlated by similar properties of the medicines. In earlier days one would specifically identify the disease and a suitable medicine having the appropriate properties were selected and administered.

While preparing a decoction, the basic parameters like tridoshas (vaata, pitta and kapha) used in traditional system are interpreted rightly and understood fully to categorize their chemical properties and the same was proved by present day scientific instrumentation. When I look back, I always felt that when the property of dosha is deficient, sufficient or excess to body to weight ratio, it is considered defective. When I scan through the literature it was observed that the medicines were standardized using the physicochemical properties of the materials. In earlier days the colour, texture and taste were used as a measure of the efficacy of any medicine. Our ancient traditional healers after many years of

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evolution tried to understand the nature better. No food or drug was used or administered without any merit in it because improvement of mind and health is a continuous process.

Some misinterpretation and misconception might have been added in due course of time. But these can be removed by studying the same with rational and scientific methods and confirm and understand the real science behind the traditional philosophies.

Thus, if we can understand the chemistry behind the traditional concepts and parameters used for diagnosis and to know the efficacy of the medicines and correlate their physico-chemical properties, drug standardization, drug designing, drug mentioning and drug targeting along with the disease identification become easy and understandable.

The selection, application and treatment using traditional medicines have specific philosophical guidelines. Hence the method of standardization should have the same basis.

For the modern scientific community's understanding the chemical and therapeutic properties are always with respect to constituent molecules present in drugs and foods. This has been generally classified as high polar, medium polar and the non-polar molecules. It is worth noticing that the total polarity of the molecule depends on the entire electrophilic and neucleophilic moieties attached to the molecule. The properties of this molecule change at different conditions like temperature, pH, pressure, viscosity and polarity of constituents and ionic and non-ionic media in which they are present. In other words, the living human-body, animal-body and plants will also contain the same type of molecules wherein different polar molecules will carry out different functions.

The physico-chemical properties of the medicine play a major role on the therapeutic activity of the medicine. The molecular energy will depend on the energies of the atoms of the molecules, its geometry and the energy it can absorb and emit.

In modern medicine there are essentially two liquid dosage forms – one is the decoction and the other syrup. The decoction of a single drug or multi-component drugs is not administered as a medicament unlike in Ayurveda or Hemeopathy. Syrup normally constitutes only pure compounds in a dosage form. So they are easily identifiable and detectable.

What one understands of Kashaaya is in a different perspective which can be summarized as follows:-

- Ayurveda believes in the holistic philosophy of life and emphasis is given for the prevention and management of the diseases.
- Kashaaya is a pure water extract, thermostable and filtered not very finely with modern scientific filters but with a fine cloth.
- In short, the Kashaaya constitutes organic compounds, soluble fibers, inorganic matter and trace elements. So the activity is three-fold.

The world has witnessed an unprecedented resurgence of interest in herbs during the last three decades. Alternative systems of medicine, specially Ayurveda has played significant role in health in Indian continent for the past 3000 years and now heading towards globalization. New dosage forms are introduced without sacrificing the Ayurvedic concept.

Conversion of Kashaaya into tablets is a need of the day for many reasons:-

- While changing the dosage form the entire classical kashaaya should be incorporated as it is. Kashaaya constitutes organic, organo-metallic, metallic and metallo complex molecules which have absorptive properties and needs to have a chemical and therapeutic standardization as a whole.
- While preparing the tablet dosage form, preferably the same powder could be incorporated as exepient as far as possible by analyzing its dosage. This exercise enhances the phyto-pharmacological efficiency and reduce the exepient percentage too.

A tablet is a convenient dosage form and has the following privileges:-

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Kerala Ayurveda VAIDYAM A JOURNAL ON EVOLVING AYURVEDA

The 11th Founder's day Celebrations and Intellectual Conclave on Higher Education on Ayurveda

The 11th Founder's day Celebrations and Intellectual Conclave on Higher Education on Ayurveda was conducted at Hotel cochin durbar on 30th September 2007. The program started at 9 a.m. with registration of delegates. About 1200 delegates including students of various Ayurveda Colleges attended the function. The meeting started at 9.45 a.m. with the lighting of the auspicious lamp by dignitaries, accompanied with a solemn prayer.

Dr. K. Anilkumar, Executive Director, Kerala Ayurveda Limited welcomed the august audience and dignitaries. (Excerpts from the welcome speech is given separately in this issue.)

In his presidential address the Chairman of Kerala Ayurveda Limited, Mr. Ramesh Vangal mainly addressed the youth of the audience whom he considered as the future of Ayurveda. He expected that at the end of the session the youth in the audience will be inspired to take Ayurveda globally. He narrated his own story as an example of how dedicated hard work could take us to higher planes. He started his life from humble beginnings and reached where he is now as a business magnet through dedicated hard work. It was a visit to the Ayurvedagram, Banglore, that inspired him to involve with Kerala Ayurveda. To him Kerala Ayurveda is a discovery because the name Kerala itself is a symbol of a rich tradition, a tradition of health care and healing which is safe and devoid of side effects. It is essential to take this tradition to all over India and abroad. The authenticity of five thousand years is of crucial importance. Today the world has got the modern technology which is developing so rapidly. But at the same time we are going to our roots. The grand mother recipes has their own values like the ishushi of the Japanese. In spite of all luxuries we often seek home-cooked meal because of our traditional connections. The whole world is searching this connection now. Credibility is another important thing. In the past he was known for selling a certain sugar water with a lot of carbonation. Today Pepsi is the only brand in the world that outsells the Coke. It was a grand success because it combined elements of tradition with modernity. He don't feel particularly valuable to society because he has sold Pepsi and filled so many stomachs with it. He said that he feels a lot inspired by contributing in a very small way to Ayurveda. He thinks that is the inspiration, in his linking with Kerala Ayurveda.

He stated that there are five things to remember – 1) Liberation, 2) Vision, 3) Cohesion, 4) Passion and 5) Execution. Liberation means to think big, think pink, think broad and think far because success and boundries are all in the mind. Ayurveda to him, especially Kerala ayurveda, is uncorrupted by various invasions that occurred in other parts of India. The vision has to be two fold. It has to be practical and it has to have an ability to think big. Cohesion means alignment. We are all together - Teachers, doctors and students in reaching the hearts. If we can create cohesion by aligning them it will make a grand success. Passion is not always easy. It is difficult to be passionate to a cause because with time we tend to lose interest. Execution means getting it done.

There is a long journey ahead. We are to bring India to the world. First to India and then to the world. Lao Tse said, a journey of a thousand miles starts with a simple step. He requested to make the first step with the team of Kerala Ayurveda.

Mr. P.R.Krishna Kumar, Managing Director of Arya Vaidya Pharmacy, Coimbatore, delivered the Vaidyan K.G.K.Panicker memorial oration. He said that Vaidyan K.G.K.Panicker is a great soul because he dared to start an ayurvedic institution in those days when Ayurveda was not at all recognized. If a person had the courage and conviction to start an institution, he should definitely be a seer. Even today there are great physicians who limit themselves to private practice, interested only in personal money making. But starting an institution to propagate the science is a great thing. He should be a great dedicated soul committed to Ayurveda. Here he remarked that when we are concerned about higher education, his concern is about primary education. Lack of proper primary education deprives people of humanity and humility and we cannot expect such people to become good doctors. We need people with heart and soul. Today is the heart day. He inquired whether anybody has the heart today. Heart is to be created out of primary education. He started the first Gurukula Ayurvedic College with this intention to create a new breed of Ayurvedic physicians with dedication and devotion. He remarked that Kerala Ayurveda also should take up ayurvedic education along with its research, clinical and manufacturing activities.

He strongly criticized the present inefficient educational system of Ayurveda and the central council of Indian Medicine. Most of the members of the CCIM are motivated by politics and greed than Ayurveda. He opined that astrology, mantra and tantra should be taught at special schools so that in future ayurvedic doctors could diagnose and treat in a better way using the wisdom. He hoped that the team of Mr. Ramesh Vangel would take the institution to global heights since each of the team member has proved his merit in his field. He said that by growth he is not intending mere economical growth. He remarked that though economically India is at the top, spiritually we are at the bottom. We should join hands to see that spiritually, economically, financially and in all senses this country should be what it was centuries ago. We were top in art, culture and science. Where are we now? He thinks that now we are top in corruption. We should reverse it. He wished that Kerala Ayurveda will play a major role in revival, promotion and propagation of Ayurveda globally.

Mr. Sonjoy Mohonty CEO and Managing Director of Kerala Ayurveda Limited, Addressed the audience. He explained the vision of Kerala ayurveda and the various activities of the company. The vision states that "Globally most admired for ayurvedic products and services, can delight customers by delivering knowledge, cure and wellness naturally and effectively." He also explained the significance and implications of the new logo of Kerala Ayurveda. It is a lotus. Lotus is the symbol of life. It is the epitome of ressurection.

Kerala ayurveda has now six large businesses – Education, Clinics, Hospitals, Products, Resorts and Services. For taking ayurvedic education abroad, Kerala Ayurveda has an academy in America. There are many centers there in US. Kerala Ayurveda has also a center of excellence in Kochi. Kerala Ayurveda has traditional and proprietary products. Kerala Ayurveda is delivering them in a customer friendly and contemporary packaging. Clinics, hospitals and resorts are delivering cure in an environment and ambience conducive to healing. Kerala Ayurveda is a professionally managed and fully integrated company. It was not built yesterday. It is a trusted name with six decades of heritage.

He declared the Kerala Ayurveda Research Awards for 2007. The awards are designed so that not only scholar who submitted the best thesis, but also his guide gets an award. Dr. Vijay Gupta of Banaras Hindu University bagged the Gaveshak Ratna Award and prize money of Rupees two lakhs. His guide Dr. K.R.C. Reddy won the Acharya Ratna Award with a prize money of Rupees 50,000/-. Dr. Umesh Sapra of Gujarath Ayurveda University, Dr. Binoker Sandeep Vishnu of Vaidyaratnam P.S. Varier Ayurveda College, Kottakkal, and Dr. P.V.Madhusoodanan of Government Ayurveda College, Thiruvananthapuram were the other three finalists eligible appreciation prizes and prize money of

Rupees twentyfive thousand each. Dr. A.V.Thakar, Dr. C.M.Sreekrishnan and Dr. S.K. Ramachandran were their guides respectively. These guides had a prize money of Rupees ten thousand each.

Mr. Ramesh Vangal presented the Gaveshak Ratna Award to Dr. Vijay Gupta. The Acharya ratna Award was given away by Mr. P.R.Krishna Kumar to Dr. K.R.C. Reddy. The appreciation prizes to the scholars and guides were presented by Dr. K. Rajagopalan, Director, Kerala Ayurveda Ltd.

The Vaidyan K.G.K.Panicker Memorial Award for the best outgoing student from the Ayurveda colleges of Kerala in 2007 was presented to Dr. Praveena P. Nair of Govt. Ayurveda College, Kannur by Dr. K. Anilkumar, E.D., Kerala Ayurveda Ltd. The award carried also a prize money of Rupees twenty-five thousand.

After a short tea-break, Dr. N.V. Sreevaths, Principal, Ayurveda College, Coimbatore presented the Kerala Ayurveda Guidelines for postgraduate dissertation. The guidelines were framed by an expert committee through brainstorming sessions. (The guidelines are provided separately in this issue.)

In his keynote address to the Intellectual Conclave, which he considered as a simple chat with the audience, Vaidyakalanidhi Dr. C.K. Ramachandran MRCP, MRCP narrated the history of ayurvedic education right from his school days to this day out of his 66 years of experience in medical education. Hailing from an ayurvedic family with a standing of five generations of ayurvedic tradition, he began his ayurvedic studies at the age of thirteen in an ayurvedic school at North Parur. Later he shifted to modern medicine only with the intention of upgrading the status of Ayurveda. Referring to the award winning dissertation on Lohaasava, he stated that iron deficiency anemia is a disease identified even in the vedic period. Iron was used in the treatment of anemia in India even in the B.Cs. The western countries adopted it only in the 16th century A.D.

He reminisced the old days when he started ayurvedic studies. The first year was soley devoted for the study of Sootra Sthaana of Ashtaanga Hrdaya. Apart from the three Vaidyakalanidhi teachers who taught Ayurveda, modern doctors were also engaged as guest lecturers to impart modern knowledge. They taught anatomy. In the second year of ayurvedic schooling he had to study Saareera Sthaana, Nidaana Sthaana and Cikitsaa Sthaana of Ashtaanga Hrdaya along with the osteology of skull. In the third year Uttara Sthaana of Ashtaanga Hrdaya and physiology were taught. Vaidyakalanidhi Narayanan Nair, the head of the institution, was teaching physiology. After completing the study for three years in North Parur he shifted his studies to Trivandrum. In the fourth and fifth years he had to study Caraka Samhitaa and Susruta Samhitaa. At those times advanced untreatable cases properly diagnosed by modern doctors such as Dr. Kesavan Nair (Senior) were referred to Ayurveda college, especially to Ayurvedacharya Kumarakam P. Parameswaran Pillai. It was in the fifth year that full dead body dissection was done. Dr. Kesavan Nair (Junior) used to dissect and demonstrate. Physiology was taught by Dr. Panickar. In 1946 he was awarded with Vaidyakalanidhi diploma. Vaagbhata has stated that one who has studied medicine shall not tremble while facing acute critical conditions. But today ayurveda doctors are handicapped to manage medical emergencies. This condition should be changed. To compensate the handicap, Dr. Ramachandran joined the Stanley Medical College, Madras and later studied in UK. According to him medical education should be clinically oriented and doctors should be able to identify the site of the lesions exactly. To him surgery should be only in modern lines.

In the flow of time, Ayurvedic titles changed frequently. Vaidyakalanidhi was replaced by D.I.M, D.I.M. with D.A.M. and D.A.M. with a University degree – B.A.M. Now we have the B.A.M.S and post graduate degrees like M.D. (Ay.) and M.S.(Ay.). Still we have not attained proper clinical skill. Ayurvedic education should focus on clinical wisdom. Over specialization has caused disintegration and general practice is ignored. Now in western countries

medicine is going back to general practice so that a single family doctor can have clinical wisdom to diagnose properly and refer the patient to the proper specialist, if needed.

Ayurvedic students are intelligent. They might have lost the seat in modern medical college for one or two martks in the entrance test. This does not mean that they are inferior. They have scientific temperament and general knowledge. What is needed is proper guidance in clinical approach. It was Hippocrates who started to find out the site of disease. He was also using the humoral theory. But that is not enough. Hence he started to enquire about the site of disease. We have to have that type of approach.

He remembered the charting out of a syllabus in the sixtees of the last century for B.Sc. Ayurveda. Basically it consisted of three years of intensive training in Ayurveda followed by an entry into a modern medical college. But it was not accepted by the government on the aliby that if students go to modern medicine they will not come back to Ayurveda. They opted the old method. Now it is better to admit MBBS degree holders to Ayurveda. Ayurveda should be at postgraduate level. Once they get the ayurvedic postgraduation, they should practice only Ayurveda.

He criticized the teachers of Ayurveda in western countries who try to impart modern medicine in the disguise of Ayurveda. The students there neglect such teachers.

In US many ayurvedic drugs are used. But all of them are used as nutritional supplements. In western countries, one can study homeopathy only after acquiring a basic degree in medicine. There should be some bold step to increase the standard of ayurvedic education. The conclave should contemplate on the ways and means for this bold step.

Dr. Jayaprakash Narayanan MBBS, M.D.(Ay.), Bangalore, Vice-president, CCIM was the moderator of the conclave. In his opening remarks he pointed out that Ayurveda was taught in the oldest universities of India as a science subject. All the eight branches of Ayurveda were taught in Nalanda and Takshasila. The British rule made the status of Ayurveda low. After independance and the formation of the CCIM, things are better. Now we have 242 undergraduate Ayurveda colleges in the country with 11,000 seats. There are 69 postgraduate centers with about 1000 seats of which 204 seats are for Kaaya Cikitsaa and 104 seats for Salya tantra. Maharashtra has 62 colleges and Karnataka has 53 colleges. 50% of seats of BAMS are in these two states alone. Ayurveda medical education has to be streamlined anyway. There are Ayurveda universities in Gujarath and Rajasthan and some more are coming up. One in Kerala is on the anvil. Paramedical courses now do not come under the purview of the council. There is a need to concentrate in this area too. There should be university courses for paramedical training in Ayurveda. There should be a medical education policy for Ayurveda. The curriculum should be need based.

Dr. Narendra Bhatt, Director, Research and development, Kerala Ayurveda Limited presented a paper on the urgent need of changes in ayurvedic education. In 1986 we were discussing the urgent need of changes in ayurvedic education. Still in 2007, we are discussing the same topic. Unfortunately, things have not yet changed as they are expected. In spite of departmentalization and increase of staff strength substantial change in ayurvedic education did not take place. Education is not a sheer process of information transfer. It is a means to acquire abilities, skills and the knowledge where to apply them. From individually centered responsibility of medical care, today we have reached at a collective responsibility. A collective responsibility requires a system and proper centralization and monitoring. We cannot go back to the gurukula tradition. The goodness of gurukula system should be incorporated into the institutionized education.

We have many medical systems and we are medically pluralistic. Instead of being complementary we are becoming complicated. Other factors like social and economical factors are taking over the medical systems. This is the reality. Health care delivery

parameters are dependent on other non-medical parameters. Everybody is expecting some one else to make the change. But we have to make the change. When most of the Ayurveda Colleges are in Karnataka and Maharashtra, both the states are for the commercialization of education.

We are going to institutionalize the process without internal work monitoring. The idea of ayurvedic universities is good. It brings independence and independence invites responsibility. CCIM was formed in 1971. It had great responsibility and power. Today the power has been compromised because of poor monitoring. We cannot have a stagnant approach. We require an everchanging approach to suit the requirements of time. When a person from US wanted 18 ayurvedic teachers who could present ayurvedic ideas in modern scientific language, he cannot find them all over India. We have to meet such challenges of time. Our challenges are increasing in number. The problem of the heavy metals is just one amoung them. Being proud of the heritage alone will not suffice. We will have to meet the needs of the people.

Institutions are for enabling the individual for self acquirement of knowledge. Speaking about the faculties, the whole art of teaching is the art of awakening. The use of education is that one should feel pleasure in the use of mind. Our faculties should be able to provide this pleasure to the students. There should be national faculties.

Integration is another need. Anyone who is not open to modern knowledge is living in a fool's paradise. He is inviting destruction. Anyone remaining in a state of stagnation will turn into a monster and then to a fossil. Hence we have to change. Ayurveda is considered sanaatana as it is universal, has the capability to take up challenges of time and change accordingly. For this there should be adaptability and applicability.

Curriculum is another important thing. It should not be a mere pack of immposibilities. We have a huge syllabus. But most of it is not known. We must invite such system in CCIM where the curriculum becomes adaptable from time to time, say three or five years.

Dr. Bhatt said that Ayurveda to him is poetry. Our education should make us more serviceable to others. Ayurvedic education should be always clinical. It should not just come only in the third year. It should be there through out. The training should be through observation. The difference between U.G. and P.G. is that P.G. has the responsibility to incorporate new developments into the science, a role in the evolution of the science. Undergraduates are more profession oriented whereas postgraduates should be science oriented and should be able to contribute to the science for its growth and development of the fraternity. Thus P.G. is having a responsibility of development.

IT and BT are going to be the vehicle of tomorrow. We are dealing with data base and for aiding us in this IT is the tool. BT (bio-technology) is another important thing. For contemporary education BT is the tool which gives you empowerment. Some twenty five years back, somebody identified the gut as the second brain. Then the idea was discarded. Now we are again coming back to it with the help of system biology and molecular biology. The idea that the site of Vaata is the *pakvaasaya* is nearly rationalized by the new views.

Before we lose, let us act. That is why urgent reforms are needed in Ayurvedic education. We have lost many things in the recent past. The arena of Ayurveda is shrinking day by day. Let us not lose anything more. Let us not go to the warfront with cut hands and legs immersed in mud and with confused heads.

After the lunch break, Dr. Vasudevan Namboothiri, principal, Government Ayurveda College, Thiruvanathapuram presented a paper on "Teaching Methodology of Ayurveda. Dr. S.Gopakumar, Lecturer, Government Ayurveda College, Kannur presented a paper on "Postgraduate Education in Ayurveda" from the perspective of a teacher and a student as he is presently studying for his second

P.G. degree. Dr. Mohamed Ikbal M.D.(Ay.) Ph.D, Vaidyaratnam Ayurveda college, Ollur presented a paper on "Doctoral and Post-doctoral studies in Ayurveda". Synopsis of all these three papers are included in this issue.

There was a short discussion after the presentation and the moderator Dr. Jayaprakash Narayanan concluded the conclave with his remarks on the papers presented. He remarked that the total sentiment of the whole day's discussion is that the present day curriculum needs some change. He said that as the Vice-President of CCIM and the President of the Ayurvedic Board, he collected very good suggestions and guidance from the conclave and the conclave was very useful. He promised that suggestions and guidance from the conclave will be seriously discussed in the Education Committee of CCIM while formulating the new curriculum. He said that an ayurvedic education policy also will be arrived at. We will have to bridge the gap of education with health care delivery and this will be taken into account. The main points noted by the moderator are:

1. Clear delineation of goals and objectives.
2. The adoption of innovative teaching in Ayurveda.
3. Adjustment of the cost structure whenever required is to be done.
4. Updating the cost.
5. Rationalizing the assessment criteia.
6. Emphasis on structured and skill oriented internship.

He said that we have to maintain equity, quality, and cost effectiveness. He obseved that Ayurveda is no more Indian. It has gone global. In the global scenario it should be cost effective to survive. To equip the teachers we should have orientation programs. We should also rethink about restarting the P.G. Diploma courses to equip the practitioners. He also suggested to celebrate an Ayurveda day globally.

Mr. S.K. Arun Kumar, Director Kerala ayurvea Limited and Managing Director, Ayurvedagram, Bangalore casted the vote of thanks and the Founder's day celebrations concluded with a high tea at 4.30 p.m.

(contd. from page 12)

- Easy for transportation.
- Easy for handling bulk quantity.
- Can be presented in an aesthetic format.
- Tablets need not have much preservatives or fixers for retaining the stability of the organic compounds.
- It is possible to prepare a definite disintegration and dissolution pattern unlike in decoctions.
- In this scenario of globalization international acceptability is higher.
- Standardization, no moisture or microbial contaminations are possible features of tablets.
- Bio-availability and usage of advance technology is possible in a tablet dosage form.
- Most of the decoctions have a bitter taste which will not be felt especially in a tablet dosage form and if required it can be coated.
- Once the characteristic marker compounds are identified it is possible to develop Pharmacodynamics and Pharmacokinetic data of the tablets.

By preparing these new dosage forms it is easy to assess the efficacy of a medicine.

Lastly one should remember and note that modern therapeutics will in no way help the traditional medicines, since the isolation of the active principles will drastically change the holistic character of the medicines and their therapeutic efficacy.

We should remember that Caraka Samhitaa and Susruta Samhitaa are the two treasure troves containing plant based drugs and even today held in the highest esteem the world over.

General Guidelines for Post-graduate Dissertation

By Kerala Ayurveda Ltd.

While evaluating the post graduate dissertations for Gaveshak Ratna award the jury unanimously opined that Kerala Ayurveda should formulate clear cut guidelines for preparing postgraduate dissertation. Accordingly all the evaluators at various levels of evaluation were invited for a brain storming session and detailed discussions. The following general guidelines were arrived at. There are various books detailing how a dissertation or research report is to be prepared. Nevertheless, the evaluators felt the necessity of a simple concise guideline so that it can be utilized as a checklist before presenting the dissertation to the university.

Kerala Ayurveda Ltd. will be thankful if the guides of postgraduate scholars instruct their scholars to follow these guidelines. At any rate the evaluators of subsequent years' awards will be directed to see whether these guidelines are meticulously followed and surely it will carry some marks in the evaluation. If anyone has valid suggestions to amend the present guidelines they may please write the matter to Kerala Ayurveda Ltd. or Kerala Ayurveda Vaidyam. Your valid suggestions will be considered for inclusion and any change made will be notified subsequently. But rush your suggestions lest we may not be able to include it and notify in advance.

We hope that the guidelines will enable the scholars to prepare better dissertations. These guidelines were presented before the august assembly on the Eleventh Founders day celebrations in the inaugural session by Dr. N. V. Sreevaths, Principal, Ayurveda College Coimbatore, on behalf of the brainstorming committee constituted by Kerala Ayurveda Limited.

I. General instructions:

1. Cover: Do not include pictures, diagrams and illustrations on the cover of the thesis except the emblem of the College and or University. Remember that the dissertation is a scientific report.

2. Number of pages: it is ideal to have 90 to 120 pages in a P.G. dissertation including charts, appendices etc.

3. Page size: A4

4. Typing: Only on one side (right hand page of the book) with 1.5 spacing. Only Ariel or Times New Roman font is to be used. Avoid underlines.

5. Font size: For the text use 12 point fonts. For the headings larger fonts up to 16 point.

6. Language: Should be English. When terms of other languages such as Sanskrit or regional languages are used they should be in italics. Avoid first person; use third person or passive voice. Avoid Devanagari script from the main text.

7. Binding: Hard bound preferably with laminated cover.

8. Page number: Pages should be numbered in Arabic numerals.

9. New chapter: Begin in a new page.

10. Main text : There should be no decorations, borders or boxes in the main text pages.

11. Proportion of sections:

Introduction	5%
Review of literature	25%
Methodology	20%
Observation and results	20%
Discussion	20%
Summary and conclusion	5%
Others	5%

Note that this is just a guideline. Slight variations are permitted according to the type of work.

II. Cover Page

1. Title – Use title case. Sanskrit should be in Roman italics. Devanagari script should not be used. Font size – The largest on the page 20pts.

2. Author – Give no titles, degrees or credentials; simply give the name.

3. Guide – Titles and degree may be given.

4. Co-guide – if any, may be given.

5. Center of Study – Department, Institute, University

6. Year of Submission

7. Legend – Submitted to the ---University in partial fulfillment of the requirements for the award of the Degree of Doctor of Medicine (Ayurveda)

III. Title content

1. Title should be self explanatory and there should be no ambiguity in it.

2. It should reflect the study design / methodology.

3. Unscientific Ayurvedic or modern correlations should be avoided.

4. Do not hesitate to use modern medical terms.

5. When ever the phrase "with special reference to" is given it should tally with the content of the study.

6. No abbreviations should be used in the title.

IV. Dedications – There is no need to dedicate a dissertation to anybody.

V. Pictures and photos – Do not give pictures or photographs of any kind as insertions in the beginning as homage or gratitude.

VI. Title page – same as the cover page.

VII. Statutory pages

1. Certificate

2. Declaration

3. Acknowledgements – limited to one page.

4. Contents

5. List of tables

6. List of graphs

7. List of illustrations

8. Abbreviations

9. Abstract – 100 to 250 words, in the past tense.

VIII. Introduction

1. The objectives should be enumerated. It should contain-:

i. What was the study about?

ii. Why was the study being made?

iii. Where was the study carried out?

iv. What types of data were required?

v. Where were the required data found?

vi. What was the period of study?

vii. What was the sample design?

viii. What techniques of data collection were used?

ix. How was the data analyzed?

x. What was the style of the prepared report?

2. Should not be prejudiced – do not start with – "To prove that…."

3. Start with a verb – to analyze, to study etc.

4. State hypotheses

5. Mention about previous studies in the same topic.

6. Mention lacunae in current knowledge.

7. Should contain the research design

8. The result need not be included.

IX. Review of literature

1. Aim to establish the academic and research

(contd. on page 30)

Kerala Ayurveda VAIDYAM A JOURNAL ON EVOLVING AYURVEDA

Teaching Methodology in Ayurveda

Dr. M.R. Vasudevan Namboothiri



A student who recollects all that is necessary is a best student and a teacher who can make him recollect is the best teacher. In education, recollection is very important. In Caraka Samhitaa, Vimaana sthaana, 8th chapter, the selection of text for study, selection of teacher to teach it and the methods of study are explained.

Ayurveda is a timetested science and the authentic treatises of Ayurveda are not to be viewed with suspicion. According to Vaagbhata, as the science is traditionally derived and practically verified there is no need to contemplate on its authenticity. It could be utilized like mantras.

The perceptor is very important. Without the blessings of the guru, we cannot apprehend the science. In ancient times students had the liberty to select the teacher. Now the students are not permitted to select their teachers. At the most, they can only opt a particular institution of their choice.

Reading, teaching and discussion (debate) are the three methods of study mentioned by Caraka. Selection of student also is important.

There are certain hurdles for those who come to study ayurveda. The first one is the language barrior. The fundamental principles of Ayurveda such as the three humor theory and the five element theory are not familiar to the student as they are not taught to them at school level. Students come to Ayurveda colleges with great expectations and usually most of them are disappointed when they face the realities. Another important drawback is that our institutions mostly lack good teachers. Lack of proper guidence, confidence and hard work are the main problems faced by ayurvedic education. How can we tackle these problems?

First, we should thouroughly understand the basic principles of Ayurveda. Then we should apply them in practice. Confidence in science could only be generated by merging theory with practice.

For studies there should be motivation. At every instance people think "What is there in for me?" For example you are coming to this conclave voluntarily. This is out of self motivation and not out of compulsion. Compulsion generates stress. Students should not be compelled to study. Teachers should motivate students. Students should be encouraged to ask questions such as "why?" "what?" "how" etc.

I shall cite some examples where the text appears dubious and arouses the curiocity of a thinking student, where to crack the nut, the basic principles of Ayurveda are to be judiciously applied.

1. In the regimen of summer it is stated that Kapha decreases and Vaata increases day by day. Here naturally a diet that will increase Kapha and decrease Vaata is the logical choice. But we find that in summer we are advised to avoid salty, sour and acrid tastes. This confuses the thinking student. Salty and sour tastes usually increases Kapha. Yet they are banned when Kapha is decreased. Why? On a closer examination we find that all the three banned tastes are fiery and summer also is fiery. Hence fiery materials are better avoided in summer. We should thus interpret the practical suggestions of the treatises with the insight of basic principles of ayurveda to clarify the implied aspect and avoid confuson. Then study will become easy and acceptable.

2. The coupled properties viz. cold and dry and

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cold and unctuous are homogenous *(saatmya)* to humans. But the couple, hot and unctuous is heterogenous *(asaatmya)* to the living body. Salt is hot and unctuous. That means it is heterogenous or unwholesome. We are asked to avoid salty substances in various occasions. Even when permitted, salt is permitted only in small quantities. On further enquiry we find that we are advised to avoid many substances which are hot and unctuous. Curds, blackgram, oil and fish are some examples. Hotness corresponds to fire and unctuousness corresponds to water. Water and fire cannot coexit. They are innately opposites. That is why hot and unctuous substances are unwholesome.

3. Chebulic myrobalan *(abhayaa, hareetakee* – Terminalia chebula) is hot and dry. Hence it is dessicating or drying. Almost all substances having hot and dry properties are dessicating. But *abhayaa* is different. In spite of its dessicating property it is a laxative. That is why it finds much application in treatment. *Abhayaa* is considered equivalent to our mother. The mother may be angry with us at times. But *abhayaa* never aggravates.

4. The theory of generality *(saamaanya)* and specialty *(visesha)* also is to be consideed in pharmacology. Crocodile's semen is an aphrodisiac as it has generality of substance *(dravya-saamaanya)* with human semen. Milk increases *ojas* (immunity) because of the generality of attributes *(guna-saamaanya)*. Day sleep increases Kapha because of generality of action *(karma-saamaanya)*.

5. Greengram *(mudga)* is considered as a wholesome food material and it is suggested for routine use. But it is contraindicated in *gulma* (gas trouble) because it causes constipation *(vishtambha)*. Instead, horsegram *(kulatha)* is suggested in the treatment of gulma.

6. Garlic is indicated in all obstructive conditions *(aavarana)* excluding the occlusion by Pitta and rakta. Garlic is contraindicated in rheumatoid disease *(vaata-sonita)* because in it the occlusion is by *rakta* (blood). Thus in the vast array of formulations for rheumatoid disease we do not find a single formulation containing garlic.

7. We can substantiate scientific data with experimental and clinical evidence. An instance of research from my college will establish the point. In Thiruvananthapuram the solubility of *guggulu* in ghee was studied. We found that five *pala* (250 g approx.) of *guggulu* is the optimal solubility in one *prastha* (800 g approx.) of ghee. This is exactly the amount of *guggulu* prescribed in the formulation of one prasta of *guggulu tiktaka ghrta*. This study shows that our science is very scientific.

8. We know that the acrid principle in capsicum inhibits the growth of fat cells. According to Ayurveda acrid taste reduces fat. Such things can be experimentally proved. We have to resort to such experiments to convince the students the authenticity of our theories.

9. Our texts are mostly in verses. Verses are in a coded form. Hence we have to decipher the code for proper understanding. While by hearting the verses of formulations, first divide it into sections. For example, the ingredients in one section and the indications in another section. By-heart these separately and then combine with a logical connection. Repeatedly recite the verses you have by-hearted within twentyfour hours. If you leave it unrepeated for one week, most likely you will forget everything that you have by-hearted. You have to repeat three times within twentyfour hours. Short periods of frequent learning are better than continuous study. Repeat even after you know well. It is called over-learning. It stabilizes knowledge. Learn with heart and brain. The knowledge will be with you.

10. The proper syntax of Sanskrit sentences is also very important. See the definition of *vajeekarana* given by Susruta. *"Alpa-dushta-ksheena-sushka- retasaam aapyaayana-prasaadana-upacaya-janana-nimittam."* Here we have to connect the sentence as *alpa-retasaam aapyaayana-nimittam, dushta- retasaam prasaadana-nimittam, ksheena-*

(contd. on page 38)

Kerala Ayurveda VAIDYAM A JOURNAL ON EVOLVING AYURVEDA

Doctoral and Post – Doctoral Studies and Research in Ayurveda

Dr. N.K.M. Ikbal



'To know' and 'to believe' are different.

To know facts is science,
To believe the one who knows is ignorance.

Higher Education in Ayurveda is not a question of life and death, it is much more important than that. It is really a paradox that deliberations on the higher education in Ayurveda are envisaged at a time when the standards of basic education in Ayurveda do not meet quality issues at various levels. Being an integral system of wellness solutions and health science, Ayurveda spreads over many domains of knowledge. The material and manpower resource lie arguably in India, viewed from the global perspective. Unlike other life sciences, Ayurveda needs to find dependable solutions for any concerns, contemplated in this country. Strategic measures are to be thought of, earlier the better. This paper is more of a concept document discussing the realities and possibilities of Doctoral and Post Doc studies and research in Ayurveda.

Purpose of Higher Studies in Ayurveda is generally and should be aimed at producing quality Physicians, better quality Teachers and top quality Researchers. When it comes to the question of Doctoral and Post-Doctoral levels, what is required is to produce very high quality Research personnel having 'cutting edge' technology. Here the word technology is connoted to carry the advancing as well as the thrust areas in Ayurvedic medical practices. Admittedly the science or theory part in Ayurveda can be considered as valid and futuristic in its own terms, the technology part and the application levels can be further refined, modified and perfected to suit the mass. Global demand for quality assured products and services from Ayurveda is very high.

This paper would primarily explore the scope of PhD (Doctor of Philosophy) and PDF (Post-Doctoral Fellowship) in Ayurveda as a knowledge system. The scope of clinical sub-specialties like DM or MCh also figures in the vast canvas of the discussions. In any case, these are the areas of guided research in the discipline better considered as 'Advanced Academic Research'. PhD and PDF are open ended processes in a time bound manner to equip the candidate with necessary strengths to carry out independent original researches. These researches are not heavily funded and can only train the candidate in the pure or applied research areas to come up with useful findings that adds to the existing knowledge. Industry based researches enjoy the freedom of finance, but is more demanding in terms of time and results.

Research in Ayurveda is again debated upon its very ideological basis. The need of research need not be overemphasized. If situations demand, Ayurvedic scientists of the yore (acaaryas) advocate and recommend addition of new knowledge, modi-

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fication of existing models, perfecting the available techniques and improvement of practices. Logically considered, scientific knowledge and claims should be verifiable. The questions on Ayurveda as a science and the very evidence base are being answered from different viewpoints. When it comes to the scientific research in Ayurveda, fixing the standards in terms of identity, purity, strength, measure and acceptable tools to validate the investigation turns more complex. However, there is no place for orthodoxy, dogmatism or superstition in the context of research.

Historical evidences are conclusive to understand that Ayurveda has not evolved as a medical system intended for the mass. The time and space were different that Ayurveda provided excellent wellness solutions as well as health care provisions. The futuristic potential of Ayurveda has to be identified in tune with times. Those who are into Ayurveda need to reaffirm the basics and redefine the applications of the ancient principles on realistic scales. This would in turn serve the real life needs of the contemporary human being. Ayurvedic scientists in this context should have communicative, cognitive and subject specific skills with elements of critical reasoning and reflective thinking.

Doctoral and Post-Doctoral levels of study in Ayurveda provide opportunity for the Ayurvedic scientist to re-examine and re-validate the principles and practices in Ayurveda. If contemplated by a non-Ayurvedic scientist, PhD and PDF studies in the domain of Ayurveda becomes a validation process. Considering the demand world over, every Ayurveda Graduate can think of Doctoral and beyond in the career building. There can be an inspired Ayurvedist or an inspired Scientist (Interdisciplinary) attempting PhD and PDF. Technically, those having a Masters in Ayurveda or other Health Sciences can proceed to undergo these programs. Those who opt for Ayurveda at these levels should understand the difference of approaches, develop appropriate tools, work and experience, explore areas as a pioneer, achieve goals and accept these responsibilities.

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In this backdrop, primary aim of the Doctoral programs in Ayurveda is to add new knowledge into the knowledge base. Addition and enrichment will be for the cause of growth and development of science so as to attempt solutions of the existing medical problems. In the same track, the investigator can demonstrate the usefulness and reliability of Ayurvedic principles to get wider acceptability and applicability. Any attempt should be systematic and scientific efforts to disclose the truths that are hidden, forgotten, misunderstood or ignored. The studies should follow highly structured format with a roadmap from problems to possible solutions. It can happen in institutes with facilities that offer Doctoral and Post-Doctoral where serious working environment exist. Excellent library and laboratory facilities are inevitable and supervisors or mentors as the case may be. Networking of existing institutes and expertise can add muscles to the body of original research in Ayurveda. It is high time that Government should develop a centre (IIT Standard) that provides umbrella for all Ayurveda related Doctoral and Post-Doctoral programs.

Supervisors, Guides and Mentors constitute the backbone of higher levels of learning. Guidance is a continuous process and has to be consistent for the success and completion of projects. There is definite dearth of experts in this area. But this can be solved by constituting a 'Virtual University' by pooling of resources at the national level. Empanelled with senior PhDs and PDFs, this platform offers opportunity for peer review of the research reports. This academic body can offer short term courses on select topics for undertaking research at PhD and PDF where the prospective candidate can explore the scope and limitations of chosen topics and can focus on promising areas. This is the most viable model with less financial implications.

There exists definite areas to explore as far as Ayurveda and related disciplines are concerned. Core principles of Ayurveda provide excellent opportunity for contemplating fundamental researches. Ayurveda thrive on certain unique concepts like srotas, agni, aama etc. Hence concept oriented investigations pose a novel arena for inter-disciplinary works. Concept of Rasaayana and attempts to bypass *dhaatu-parinaama* stages is interesting for the physiologist and more promising for the physician to treat debilitating diseases. Positive health plans in terms of perfect ojas is another example. Primary focus on ojas is missing while planning management programs for many chronic ailments. Disease related or their etiology related researches are frequent yet not many of them really contributed. Drug or formulation based researches are the main chunk of present day works and this can continue further in new directions.

Newer trends of research can be set out based on Ayurvdic therapies. Despite having strong theoretical back up, there is more of pluralism observed in the treatment pattern in Ayurvedic hospitals for well known conditions. Variables are indefinite and anybody's guess happens to be the therapy schedule in many instances. Research attempts can be in the direction of configuring Ayurvedic treatments against clear cut diagnoses. Preventive medicine has special mention in Ayurveda and testing specific life styles (day sleep, consumption of yoghurt etc.) causing specific diseases deserve special attention. Findings from these researches can be adopted by Government agencies in Social Medicine practices. WHO is encouraging such investigations and practices ongoing in the fields of Complimentary and Alternate Medicine (CAM).

In the context of inter-disciplinary areas, possibilities are endless. Conservation of hundreds of medicinal plants for future generations is a dynamic task. Germplasm of Ayurvedic herbs provides scope for high end researches to validate the biological actions of medicinal herbs, isolation of active compounds and molecules from the herbs and micro-propagation. Genomics and related works can look for links in terms of constitution (*prakr̲ti*) of individuals that can revolutionize medical practices. Sophisticated

laboratories can incorporate Ayurveda researches to explore many new areas like 'neuro-immuno-endocrinal' axis and find out simple solutions in Ayurveda answering some unanswered questions.

It is inevitable that Doctoral and Post-Doctoral levels should be making use of the available tools: be it the biological, bio-chemical, bio-informatical, bio-technological or bio-medical. It requires a good amount of courage for the researcher in Ayurveda to fix those standards. Often these do not fit into the entirety of Ayurveda, but parallels can be drawn. The outcome of studies or the thesis can turn complimentary or contradictory upon situations and populations.

Outcome of PhD or PDF studies provide scientific writings to be published in peer reviewed journals. Findings can encourage further studies on the topic and many times this happened to result in Nobel Prize discoveries. In the domain of Ayurveda, resultant products or formulations can benefit millions of sufferers. The cycle of research in Ayurveda can have elements of reductionistic approach later to end up or sum up in a holistic manner. PhD or PDF studies in Ayurveda can extend to non-Ayurvedic disciplines and benefit them.

Research in Ayurveda at PhD and PDF levels is an important concern for future considerations and growth. A consortium of senior academics to support and shape the higher education in Ayurveda is in evolution. There should be no bias about the fashion in which the PhD and PDF in Ayurveda should come up. Ayurveda badly needs PhDs and PDFs who are able to work in a multi-cultural society of Modern Scientists.

Issues at the Doctoral and Post-Doctoral levels can be simplified to those of quality and quantity. We need Scientists who willfully choose Ayurveda, Institutes of Highest standards, Guild of Guides and Mentors who can really do the job, study areas identified and prioritized. Patronage of the Governments becomes vital and decisive in this context.

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Post Graduate Education in Ayurveda

Dr. S. Gopakumar



What is education…? The question appears to be so simple in terms of an easy direct answer related with personality development. But I suspect that whether the well defined definitions of it really reflect the various domains of education. Education is defined as a process by which a relatively permanent change in the personality of an individual is achieved in cognitive, psychomotor and affective domains. The cognitive domain targets the brain and intelligence. The psychomotor domain is related with the skill and largely depends upon the practical talent. The third and the most important domain aims the development of heart in terms of values and ethics. Now let us come to the arena of Ayurvedic education in relation with these three domains with opened eyes.

As everyone agrees, PG education is supposed to be research oriented with a well structured course and curriculum. The main objectives of university level PG education are to mould the competent professionals to meet the medical challenges in the developing society. Ayurvedic PG education was introduced into the main stream of academy with the same aim. How far this aim is fulfilled till now may be a matter of debate. We very well know that the existing system of Ayurvedic PG education has so many limitations to its credit. Let us analyze the major problems faced by the current academy.

Learning makes the life of an individual more competent. It is applicable to all educational sectors though it is more relevant in professional educational field. All the universities from east and west consider continuing professional development (CPD) as the main objective of PG education. The educational objectives of Higher education can be summarized as shown below-

1. To provide the individual postgraduate student with a solid foundation in research methodologies.

2. To provide a unique competence within a circumscribed area in the field of medical knowledge.

3. To train researchers, research supervisors and teachers for the future needs of colleges and universities.

By sticking on the above mentioned objectives let us discuss the problems of Ayurvedic PG education under the three following headings -

A. Academic level

B. Research level

C. Treatment level

A. Academic level

The academic outcome from any educational institution is the reserve source of theoretical and practical knowledge for the coming generations.

When it comes to the discussion of Ayurvedic PG education, the syllabus is utilized only as an examination tool in most of the PG centers. The students as well as the faculty often don't go to the deeper aspects of the science by which datas for the coming generations could be generated. Scientific seminars and discussions are stereotyped and non converging. In most of the clinical and nonclinical departments

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the majority of the scientific presentations are the exact copy of the previous works. The most important matter of timely updating is totally ignored as for as Ayurvedic principles are considered.

The platforms for exchanging scientific novel ideas with a creative approach are not very much explored by academicians. As a result of this, uniformity is not maintained in teaching methodology and learning practice. Examination patterns and evaluation techniques are also considerably different in different institutions.

The solutions for the above problems should be made by the coordinated efforts of the authoritative bodies. The syllabus and curriculum should be uniformly applied across the country. The seminar system existing in the current PG education should be re-organized into the following three levels-

1. In the primary level, the standardization of the basic principles of the concerned departments should be the main agenda.

This is never an easy task. It may take some years to get the basics standardized with a wide acceptance. Once a basic topic is scientifically standardized at department/institution level, the same should be presented in the concerned state level academic body and then at national level. The changes made in this regard should be communicated to the other PG centers concerned.

2. In the second level of seminar schedule, priority should be given to correlate the Ayurvedic basic principles to that of other contemporary medical sciences. The procedure of departmental/state/national level standardization of the correlated scientific concepts and principles should be done as in the primary level.

3. In the last level of seminars, the new updated concepts and principles which are the products of the first two levels should be explored in the light of current medical knowledge. Such reconstructed concepts/Hypotheses should be subjected to research by the PG students at various levels as part of their dissertation work in the final year of the course. Guides and supervisors should direct the students to take such topics which are previously standardized by themselves in their departments.

Finally, the examination part to evaluate the PG students and their thesis work should be updated and guidelines in this regard are to be published by CCIM.

B. Research level

Research is the systematic and scientific hunt for facts and truths. It is an endeavor to discover new facts or correlate old facts, by scientific study of a subject, or a course of critical investigation. Research is an inevitable part of Ayurvedic science because of following reasons –

1. Ayurveda lacks a strong fundamental basis when it is compared with the modern sciences.

2. Ayurvedic pharmacology, though has successful clinical stories, is not much explored by systematic scientific approach

3. Increasing demand for evidence based studies from other contemporary sciences and international society.

As far as PG education and research are concerned, the main problem is the absence of a well designed research protocol to meet the international standard. In both spheres of research - namely fundamental and applied research, the current topic selections and works have no deep scientific contribution. Departments don't select long term projects with continuous researches. Most of the departments select topics which are beyond the scope their discipline, thus not contributing to the development of the concerned disciplines. If we conduct a cross examination of the research topics conducted by various PG centers in India in an academic year, it can be seen that the most of the topics are only the mere repetitions without any self and soul. Community based issues with high social importance doesn't get much attention while selecting the research topics.

These problems in the arena of research can be reduced by making universal research norms for Ayurvedic PG education. Topics which are beyond the scope of the concerned departments should be discouraged. A well designed scientific research protocol should be implemented after considering the expert opinions of the research persons with sound experience. This protocol should reflect the aims and objectives, nature, duration, list of collaborating agencies and other necessary aspects of medical research. Useful practical training should be given to the first year PG students in any recognized research centers for a specific duration. This will definitely help them to acquire the basic knowledge before they proceed with their study. Selection of research topics should not be done before having the basic ideas of a scientific research. Supervisors and guides should also receive good training on research methodology at national level to avoid the basic defects and to make the protocol a standardized one. Moreover, development of an Ayurvedic research methodology is the need of the day as the existing system has so many lacunas to its credit. Modern scientific parameters combined with Ayurvedic assessment criteria can really reflect the true effect and spirit of this holistic science. Department officials should make long term research programmes which are to be executed by a fixed number of batches. When society has any timely medical need, priority should be given to such topics because any research without social commitment is of no value.

Ethical aspects are to be discussed in detail and institutional ethics committees should be constituted in all PG centers with the involvement of the scientifically qualified and practically trained individuals. Funds for research play an important role in good researches. Schemes should be implemented to provide the adequate funds to the scholar at various levels.

C. Treatment level

It is of great importance that the PG education should bring highly skilled professionals as clinical medicine in Ayurveda is undergoing a crucial period at global level. The findings of research from one scholar should be brought to the field with necessary modifications if needed. But unfortunately the existing system didn't allow the research findings to get an exposure. The fruits of two year research by scholars are resting in the cold storages of libraries without any use to the medical field or layman. This situation needs an urgent change. Proper marketing techniques are highly essential to bring these outcomes to the common man. More over the PG students are to be encouraged to explore more traditional clinical knowledge from ancient texts and local folklores.

In general, at the end of a three year PG course, a student should be highly competent in academic, research and treatment level. Each of the above mentioned fields have their own importance and largely depend upon each other.

Ayurvedic University

A central body to coordinate the academic and research activities in a state is the need of the hour. Ayurvedic universities should be established with a foresight of Ayurvedic education and research at international level. Ayurvedic universities should have a global standard and they have to control and coordinate the entire academic - research programmes in the state.

To promote Ayurveda at global level and to get international acceptance Ayurvedic PG education has a definite role to play as higher educations field is the soul and life of any science. Let us remember what Acaarya Caraka told - If one possess the six qualities of research, nothing is impossible to him in the science. These qualities are *vidyaa* (knowledge), *vitarka* (reasoning), *vijnaana* (scientific knowledge), *smṛti* (memory), *tatparataa* (aptitude) and *kriyaa* (practice). The existing PG education in Ayurveda should aim the development of these six qualities in a scholar.

(contd. from page 20)

relevance of the topic.

2. Key words should be identified and their academic and research relation should be established.

3. Present a reasonable collection on the subject by summarizing the texts, research reports, articles from journals etc. – mere mention of the name of the book or article is not sufficient.

4. Review the literature related to all the key concepts.

5. Detailed analysis of the texts is not needed.

X. Methodology

Should include the following:-

1. Settings - Study locations – inclusion and exclusion criteria

2. Type of study design – the selected design should suit the study like double blind control study, single case design etc.

3. Sampling – Population, sample, sampling techniques and sample size.

4. Details of materials – trial drug, instruments used, therapeutic methods etc.

5. Details of intervention

6. Process of data collection- Questionnaires, observation etc.

7. Details of data analysis - Statistical tools

8. Strength and weakness of the methodology

9. Ethical considerations

XI. Observations and results

1. Should be logically organized in readily identifiable sections.

2. Should give the logical organization of the effect of intervention.

3. Should present detailed statistical analysis which is advanced, appropriate and relevant.

4. Should use appropriate charts, tables, graphs, figures etc – all data need not be presented in all formats.

XII. Discussion

Should include:-

1. Comparison of base line data in different groups.

2. Justifications and reasoning of observations with prevailing academic and research data.

3. Justification and reasoning of outcome with original thoughts.

4. Interpretation of implications of outcome.

5. Statement of limitations of interpretations.

6. Mention of unanswered questions.

7. Mention of new questions that were raised.

XIII. Summary and conclusion

Should include:-

1. Summary of the study
2. Enumerate conclusions arrived at
3. Statement of original contributions
4. Limitations of the study
5. Recommendations for further study

XIV. References

1. Give complete identification of the reference – Text, Part, Chapter, stanza etc in case of Sanskrit textual references. In case of articles give the name of the author, journal, volume, issue, date and page number.

2. List out only the significant and published references.

3. Accepted International reference system shall be used – Harvard system (Name and Year system) or Alphabet-Number system.

XV. Bibliography

1. Follow norms given for reference.

2. Avoid lengthening the list by including unwanted titles.

XVI. Annexure

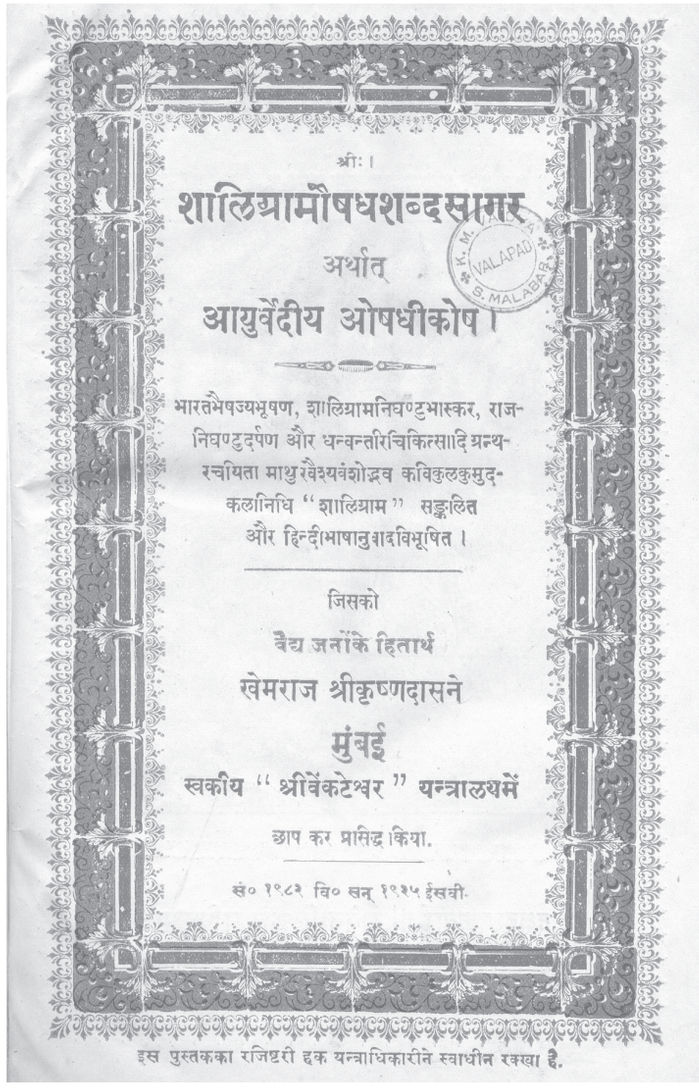
Required annexure and appendices are to be included.

E.g. Format of questionnaire, sample case sheet etc.

Kerala Ayurveda VAIDYAM A JOURNAL ON EVOLVING AYURVEDA

Ordered in Alphabetical Order

Saaligraama Nighantu Bhooshan or Saaligraama Nighantu as it is popularly known, hails at the end of the 19th century C.E. and is the last of all the classical dictionaries of Ayurveda. This emerged as the seventh and eighth parts of another larger work called Brhat Nighantu Ratnaakara compiled by Dattaraam Caube. This work was completed in 1896 C.E. Nighantu is a lexicon and in classical ayurvedic lexicons the names and synonyms of herbs were the main entries. They were not arranged in alphabetic order but were discussed as groups of drugs such as 'the group of camphor etc' *(karpooradi varga)* and 'the group of chebulic myrobelon etc.' *(hareetakyaadi varga)*. Hence it is difficult to find out any single entry if we do not know its group. Further, the descriptions were mostly in verse order and to decipher the verses one should have a good working knowledge in Sanskrit.


श्रीः ।

शालिग्रामौषधशब्दसागर

अर्थात्

आयुर्वेदीय ओषधीकोष ।

भारतभैषज्यभूषण, शालिग्रामनिघण्टुभास्कर, राजनिघण्टुदर्पण और धन्वन्तरिचिकित्सादि ग्रन्थरचयिता माथुरवैश्यवंशोद्भव कविकुलकुमुदकलानिधि "शालिग्राम" सङ्कलित और हिन्दीभाषानुवादविभूषित ।

जिसको

वैद्य जनोंके हितार्थ

खेमराज श्रीकृष्णदासने

मुंबई

स्वकीय "श्रीवेंकटेश्वर" यन्त्रालयमें

छाप कर प्रसिद्ध किया.

सं० १९८२ वि० सन् १९२५ ईसवी.

इस पुस्तकका रजिष्टरी हक यन्त्राधिकारीने स्वाधीन रक्खा है.

Saaligraama Nighantu was written by Saaligraama Vaisya of Moradabad. Later in the early part twentieth century, he ventured another dictionary in alphabetic order. This book is the topic selected for this column in this issue. The book is named Saaligraama-Aushadhi-Sabda-Saagar (meaning 'the sea of names of medicines'). An alternate Hindi name for the same is Ayurvedeey Aushadhi-kosh (meaning a 'dictionary of Ayurvedic medicines'). This book was first printed and published in 1925 C.E. i.e. Samvat 1982 in Virama calendar by Khemraaj Sreekrshnadaas of Bombay in his Sree Venkatesh Press. Prof. P.V. Sharma has mentioned the year of publication as Samvat 2013 but it seems to be incorrect as evidenced by the facing page of the book reproduced here. The reproduction is from the copy of the book belonging to Kerala Ayurveda Archives. At the time of publication, the author was pretty aged. In the preface of the book the publisher hopes that let the author be able to contribute much more to the treasure of Ayurvedic literature in spite of his old age.

The pedigree of Saaligraama Vaisya is given by Prof. P. V. Sharma up to nine generations starting from Baalamukunda. Aananda Roopa (Khusaalram) was the father of Saaligraama.

Till 19th century many new drugs were added to the armament of Ayurveda due to foreign influence and Saaligraama has ingeniously included such additions in his first dictionary Saaligraama

Nighantu. It was Umesh Chandra Gupta of Bengal to first compile an Ayurvedic dictionary in alphabetic order simulating modern dictionaries. The dictionary is very large and is named Vaidaika Sabda Sindhu (the ocean of medical terms). This was first published in 1914. This prompted many others to compile similar lexicons. Saaligraama Vaisya compiled the book under consideration as per the request of the publisher. When Umesh Chandra gave Bengali meanings also to the terms, Saaligraama gave Hindi meanings in his alphabetical lexicon. This is very useful for the majority of the Ayurvedic population of India. But Saaligraama Vaisya has not provided English or Latin equivalents. More over Vaidyaka Sabda Sindhu has included names of diseases and formulations etc as entries but Saaligrama has confined his entries to drugs alone excepting the inclusion of some anatomical terms which seem to be a misfit in a glossary of drugs. Vaidyaka Sabda Sindhu is very elaborate and bulky whereas Saaligraama-Aushadhi-Sabda-Saagar is very handy and has only 220 pages.

In compiling this dictionary the author has referred Amara-kosa, Paryaaya-ratna-maalaa, Sabda-candrikaa, Sabdaartha-cintaamani, Unaadi-kosa, Medinee-kosa, Hema-kosa, Halaayudha-kosa, Dharaneedhara, Jataadhara, Dhananjaya, Vijaya-rakshita, Ajayapaala, Trikaanda-sesha, Haaraavalee, Vaidyaka-kosa, Aushadhi-kosa, Sabda-kalpadruma-kosa, etc. which are very reputed lexicons. He has also referred to various Ayurvedic treatises like Caraka samhitaa and Bhaava-prakaasa-samhitaa.

Later, various other dictionaries of ayurvedic terms were published by many agencies and individuals. Yet the name of Saaligrama Vaisya will be revered as a luminary of Ayurveda and his lexicons will be remembered and utilized by generations to come. The works are such important landmarks in our Ayurvedic heritage.

(contd. from page 10)

ing the consistency of Pitta which is basically linked with heat (*ushna guna*) despite the possible failing action of the unctuousness (*snigdha guna*) due to the digestive action (*paacana karma*) of the formulation. Moreover the drug chebulic myrobalan with its laxative (*anulomana*) action corrects the unusual motion of Vaata in the system. This is a peculiar process by which the occlusion in the canals got relieved off on digesting the undigested components in the canals through an carminating (kindling) action and carry forth smoothly towards the lower part of GIT for getting eliminated. Apart from this, the flowing property (*sara guna*) of jaggery (used as adjuvant) and *chebulic myrobalan* help drain the inconsistent filth (*mala*) to GIT (*koshtha*) and got eliminated subsequently in the above process of correction. It is a fact that the permutations and combinations of properties (*guna-vikalpana*) of ingredients play a major role in eliciting the therapeutic effects as well as in preventing the untoward reactions according to Ayurveda. It is interesting to note that while producing a change in a state of this illness we should not confront contradictions with the parts left unconcerned so as not to produce problems in tissue levels. I strongly apprehend that this formulation definitely is proved as a reasonable link at a certain point in this disease process.

We can find other contexts where the same combination is being used with some change in the ratio of ingredients. The ingredients in equal quantity made into decoction (*kvaatha kashaya*) with Indian bdellium (*guggulu*) as adjuvant is prescribed for low backache and pain in chest, shank and thighs (*katee-jankha-ooru-prshta-stana*). *Amrtottaram kvaatha* prepared with half quantity of hogweed (*punarnavaa - Boerhavia diffusa*) is a very popular combination in edema (*sopha*), ascites (*udara roga*) etc. *Amrtottaram kvaatha* has found to reduce the elevated ESR in certain conditions especially during the undigested stage (*aama avasthaa*) of certain diseases where over-hydration is obvious due to the resolution of Kapha.

Sounding the Sound

Dr. C. R. Agnives

We wonder why a urethral sound is called a sound. Is it something like the heart sound? Oh! No. It is a long, slender, slightly conical, steel instrument like a probe. It is used to explore and dilate the urethra. Yet it sounds funny to call it a sound. The procedure of using it is called sounding. We sound the horn at a turning where the visibility ahead is almost absent to warn and for resounding that some vehicle is not approaching. Yes. Sound is an explorer. Sounding is an exploration. Now we use ultrasonic form of sound waves even to explore the internal organs. So let us sound the sound to resound. Are our theories about sound, seem sound enough?

Indian theories on sound are a bit complicated and diverse. Some of those who believe in an evolution theory of sound consider that in the beginning there was sound and everything emerged from it. To them, matter is an effect of sound. There was the sacred AUM, the cosmic humming, that diversified into three to form three types of ego (ahankaara), the brilliant ego of knowledge (*saatvika ahankaara*), the dynamic ego of action (*taijasa ahankaara*) and the static ego of ignorance (*taamasa ahankaara*).

But materialists hold that there is no sound without matter. After all any sound, whether it is of the string, bell, drum, flute or of the vocal chord is generated by vibration. Vibration is movement. Movement is action. For any action there should be an actor. The actor is termed substance (*dravya*). By definition, substance is that which where action and or property coexist with inherence. Without substance there is no action. Hence prior existence of sound to substance is a mere impossibility.

But Saankhya system of evolution states that the properties were generated first in subtle forms called quanta (*tanmaatraa*) and they begot substances with mass through evolution and pentamerism (*panceekarana*). Many philosophers including the great Sankaraacaarya has written critically on pentamerism. Einstein's theory that mass is convertible to energy has in a way revalidated the Saankhya theory. If mass can be converted to energy, naturally mass is made of energy and energy can be condensed to mass.

Those who believe in the eternity of sound hold that sound is always there and it is not created. But there are many who believe that sound is the first creation. This again is a point of controversy. Manu, the first lawgiver, states that the Creator generated water first and it is from water that other substances emerged gradually. Kaalidaasa in the opening verse of his masterpiece drama, Abhijnaana Saakuntala, implies water as the first creation of the Creator. But many others opt to believe that it was from sound that everything emerged. Explaining the evolution of matter Manu changes his views and states that it was from ether (*aakaasa*) that air (*vaayu*) was generated so on and so forth.

According to the Vaiseshika philosophy sound could be eternal as it is a property of a substance called ether (*aakaasa*), which is eternal. Since properties and substances have inherence, an inseparable eternal relation, sound enjoys eternity as it is inherent in eternal ether. This philosophy does not believe in evolution. According to it the atoms of the four elements (namely earth water fire and air), ether, time, direction, the soul and the mind are eternal. Hence according to this philosophy, properties are also eternal (to a great extent).

It seems that the action oriented 'Former Contemplators' (advocates of poorva meemaamsa philosophy) putting forward hair splitting semantics to interpret the Vedic hymns in accordance with their theory of action are very particular to hold that sound is eternal. To them action means ritual performance

according to the scriptures. The authenticity of the performances is validated by the scriptures, which are transcended from generation to generation through verbal transaction by uttering and hearing with correct accent and stress and not by writing. It is like learning a song. Thus sound becomes identical with the scriptures and scriptures are thought to be eternal and not manmade. To them, if sound is a creation, it surely will have a beginning and anything that has a beginning has an end too. The philosophy envisages the indestructibility of sound. Hence they hold that sound is not created and it is ever present. Note that the Indian scriptures are designated as 'the heard' (*sruti*) and what you hear is the sound and sound becomes synonymous to scriptures. Hence, to them, sound should be eternal.

Following suit, Kaalidaasa the poet laureate has mentioned in the opening stanza of his first major work of poetry, the versified saga of the emperors of the Sun dynasty (Raghuvamsa) that the parents of the world, Paarvati and Paramesvara are united together as the word (*vaak*) and its meaning or object (*artha*). But any one with preliminary insight of any language knows that the meaning is not innate with word as words changes meaning according to contexts. Even the statement of Kaalidaasa could be twisted to change the parents of the world into Lord Siva (Paarvateepa) and Lord Vishnu (Rame_vara), especially when Kaalidaasa himself has used the term 'two fathers' (*pitarau*) to denote the parents. Later in poetics we come to theories where the spoken word and the meant sense are totally different. We have implications of various sorts. Some implications are expressed and shouting but many are secretive murmurs and are like the escalated resonance of a bell. Such unheard resonance is an implication called 'sound' (dhvani). It was T.S.Elliot who said that when two words are put together, a star rises above them. This spark of a star is the subtlest implication and this is the soul of poetry. See how the sound is different from the spoken word.

The idea that the expression or even the impression of idea is eternal is almost universal. Detailing on cosmogony many religions think that it was the word that existed before further creation. In the New Testament, the Gospel according to John begins with cosmogony and generation of life. It is worth quoting here to substantiate the point. " In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by him; and without him was not any thing made that was made. In him was life; and the life was the light of men. And the light shines in darkness; and darkness comprehended it not." In Genesis 1. 1. 24 a, we also read that "The Word became flesh" meaning that life is the effect of word.

Note that in these contexts the Word is written with a capital W. It means that here the term Word is not any ordinary word that we phonate. Phonated words are impure according to Sri Raamakrshna Paramahamsa. He told us that spoken words are leftovers as they are mixed with saliva. Saliva, though an essentiality in deglutition and digestive process, is always considered impure when it is spitted out. Spitting has come to stay as an expression of abuse, rejection and protest and not as a mark of acceptance.

We have quoted here the Gideons English version of the Bible. Other versions vary. The Bible was not originally written in English. It was translated from Hebrew to Greek and Latin and then to English. As we know, all translations have their limitations. Here also the Word is not the word in its usual sense in English. For want of a better term, Word is used with a capital W. In the Greek version the term used is Logos. (*En aarke e`n ho Logos, kaai ho Logos en pros ton Theon, kaai Theos e`n ho Logos* – [Transliterated from Greek.]) The Greek term 'logos' is familiar to many of us. It is from logos the word element –logy is derived and we have many sciences like biology, geology and astrology. So logos means science or knowledge. Thus, in the beginning it was not the uttered word that was present but the pure knowledge,

knowledge that was with God and knowledge as God was present. In other words, the primary existence from which creation occurred was of absolute knowledge and this is God. In Indian terms we may call it the will power (*icchaa sakti*) of God.

In Upanishats we find that the first form of existence is a cosmic person (*viraat purusha*). It was from the desire of this person everything else was created. This is congruent with the biblical concept. The cosmic person is analogous to God almighty. His desire to create is the urge for creation. We may say that this desire was expressed and that the cosmic person uttered "Let it be" and 'it' came into being. That is the creativity of desire. Desire comes from necessity and we all know that necessity is the mother of invention and this may be applicable even to the Word.

Contemplation has led us into another fix. Are the Word and the sound identical? The Word is absolute and the sound is relative. When we speak we use words. But the original Word cannot be spelt. It is an idea. We may express ideas with approximate words. But no idea can be expressed perfectly with words. Ordinary words are manmade and everything human is bound to have limitations and words are of no exemption. Those who insist that word is eternal are making a categorical misrepresentation. They are mixing up word with Word. Even the infallible Vedas have many versions (*saakhaa*) differing considerably. If the scriptures are not amenable to changes how come we have many versions? It is true that followers of each version claim that their version is the perfect one. None except members of their cult will accept the claim.

According to Indian sciences phonation is not a matter of the organs of phonation. It emerges very deep, passes through four stages *paraa, pasyantee, madhyamaa* and *vaikharee*. The phonated voice is *vaikharee*. Phonation originates as an urge or impulse from deep below, the lowermost plexus of the spinal cord. It ascends up through the spinal cord, reaches the heart and then to the organs of phonation. The vibrations and resistance of the phonating organs makes the voice to emerge. Only the phonated voice is audible. The early stages cannot be heard. The saying that the unheard songs are sweeter perhaps conveys this idea too. But in a hypocritical society people speaks with the tongue and lips. It is mere lip-work. Neither heart nor the soul is in such language. That is why we have to search for authenticity of the words. In the Upanishats we read that the word is based on mind and mind is established in word. Such words are true. The words of a liar are not from his mind.

Words or statements are divided into two groups – the Vedic words (*vaidika*) and worldly words (*laukika*). Worldly words are not always authentic. Vedic words are considered always authentic by the followers of Vedas. Worldly words of authentic persons (*aapta*) can be considered as true as they are devoid of vested interests and there is no need for them to provide us with erroneous data. For telling the truth the speaker should have a clear mind. This means that his mind should be unaffected by the pollutants of mind namely *rajas* and *tamas*.

We have seen that sound is the property of ether. Ether is ever pervasive. It is present everywhere. So sound is also omnipresent. But we hear only when sound is made. Those who insist in the eternity of sound do not like the phrase 'sound is made'. They prefer to refer the process as 'revealed'. They consider that sound is everywhere and is always present. But we hear it only when some agent reveals it to us. Thus according to them unmasking of sound will depend on the type and strength of the medium unveiling the sound. That is why we have different sounds.

Sound may get unveiled by union of matter (*samyogaja*), division of matter (*vibhaagaja*) and by sound itself (*sabdaja*). The clapping of hands produces a sound of union. The splitting of a bamboo causes a divisional sound. An echo is a good exam-

ple of sound unveiled by sound. When we go into differentiation, a vibration of a particle at a place is responsible for sound as well as the vibration of its neighboring particle and this vibration also generates (sorry, unveils) a sound. This helps the 'propagation' of sound.

Since ether (*aakaasa*) is omnipresent, it is in us too. But we are able to hear only with our ears. It is explained that the faculty of hearing (*srotrendriya*) is the ether in our ear. In the case of other senses the faculty is considered as a receptor of the sense object. But in the case of the ear it cannot be considered as a receptor because it is not 'receiving sound', it merely expresses itself. This concept had amply complicated the explanations or perceptions in Indian sciences.

There are certain analogies in Indian Philosophy to describe the propagation of sound. One such analogy is the transmission of waves. When a still pond is disturbed at the centre by a small object falling there, waves are generated around the object. One wave generates another wave around it so on and so forth and finally a wave is generated at the periphery of the pond. But to an onlooker it appears that the wave itself is traveling by enlarging its radius. Similarly when sound is produced at a certain point in the matter embedded in matrix of ever-pervading ether, matter in adjacent points around it is stimulated to vibrate so on and so forth so that though the mater is vertically moving without horizontal displacement, the vibrations or sound reach the periphery of the matter.

This theory is defective in that it explains progression of sound only in a single plane. Hence another theory to establish the three dimensional propagation of sound is postulated. Here the analogy is of the blooming of the flower of kadam (*Anthocephalus cadamba*). Here the expansion of the flower as it blooms is not in a single plane. It is a three dimensional expansion like that of an expanding balloon. This analogy establishes that sound travels in all possible directions.

Thinking of sound we should also think of sound pollution. According to Ayurveda sound should be optimal. Too much of sound will pollute our faculty of hearing. But unfortunately we are now surrounded with all sorts of unwanted noises. It is a noisy world. The loud speakers might have taken away the excessive strain on the vocal cords and the bellowing lungs of the speaker. Ayurveda considers that speaking loudly is a risk (*saahasa*). So the risk factor is now amply reduced by amplifiers. But, what about the ears? They are at the mercy of the generosity of these sound amplifying services. Political parties, religions, social service organizations and even those who protest against sound pollution rely on the equipment to propagate their ideas. In spite of repeated verdicts of the courts, with a view of protecting the public from the hazards of sound pollution, polluters continue to pollute our environment with sound and it seems that they are competing with others for generating a record. Of course, you will have to yell louder to be heard when you are in a noisy surrounding as sound might mask sound.

As with all other faculties and sense organs, the auditory faculty also could appreciate only a range of sound frequencies (20 to 20000 hertz). This is a human limitation. We try to hear distant sounds with the help of radios and telephones. We try to amplify feeble sounds using equipment like stethoscope. Attempting to hear lower frequencies without auditory aids or exposing to higher frequencies is not good to the auditory faculty and its natural equipment.

At times, we try to avoid noisy situations for getting mental peace. We thus prefer silence and consider it as bliss. But unduly prolonged silence can irritate the mind. One who is kept in extremely silent environment for long will go mad. Similarly the one kept in an atmosphere of constant meaningless high pitched sounds also will go mad.

We cannot close our ears in the same fashion we close our eyes. Ears are devoid of lids. We have to use our hands or cotton wool plugs to close our ears. Clos-

ing the ears with hands to cut the volume of sound is not considered as a good practice. It can be more injurious sometimes. Sound waves are transmitted from a distance through air conduction. Even when the air conduction is obstructed by closing the ears with hands the bone conduction is patent and the hands closing the ears could serve as a receiver of sound and augment bone conduction. So it is better to keep away from blows and blasts that generate great sound than going near and closing the ears with hands.

Deafness is a disease that causes defective hearing. Absolute deafness is a rarity. The aged may gradually lose the ability to hear high frequency sound. But still they may retain the ability to hear murmurs those are of low pitch. So do not murmur at the back of the aged on the presumption that they will not hear it. When you raise the volume of your voice, the pitch also will tempt to go up. So there is not much use in yelling at high pitch to an old man who is suffering from deafness. In this case just increase the volume without increasing the pitch. An increased pitch might irritate the old man as he is more and more handicapped as the pitch goes up. He might even retort angrily that "Why are you shouting. I can hear."

Not only the deaf, we are also not completely hearing what is pronounced. We miss many syllables or words from the speech. But we guess the missing links from the lip movements of the speaker, his expressions and also by contributing or supplementing from our mind. This is why looking at the face of the speaker is important when you want to listen him. When the speaker is behind the curtain or cannot be seen as in the case of a telephone call or radio talk, the responsibility of the speaker to pronounce distinctly is much more as the listener is not able to guess from expressions and lip movements.

Again, when our mind is not with the auditory faculty we may not hear. So deep in thought, sounds may go unnoticed even if they vibrate our tympanum. We have also the ability to ignore unwanted sounds and to concentrate on sounds that we seek. Thus an indifferent listener can close his ears without using the hands or cotton wool to a boring lecture. A lover can distinctly hear and identify the voice of his sweetheart in a crowded chorus even when her sound is totally synchronized and harmonious with that of the other singers and others will miss the distinction.

Listening has a sociological connotation too. In the Indian context listening is synonymous to obeying. Hence a paramedical personal working under the doctor should be interested in listening to the doctor and the patient whom he is nursing. He should be a patient listener (*śuśrooshu*). Thus listening came to have a connotation of taking care of. A student also should be a listener of his Guru. Here listening is attending. However good be the speaker, if the listener is not attending, the words will be wasted. Mark Anthony is considered as the best orator in history. Even he had to request his audience to lend their ears.

Listening what others cannot listen may be considered by many as a gift. So when somebody hears sounds from nowhere, he might be elevated to the rank of human god and devotees flock around him to get the messages of God through him. But in many cases, such cases are of auditory hallucinations and they signify mental illness according to Ayurveda and other medical systems. According to Ayurveda, hearing nonexistent sounds is a sign of madness. It may also denote physical illness such as anemia or degeneration of the internal ear. But in such cases the sound may not simulate voice, but will be of ringing or whistling nature. In such conditions I have chanced to see that those who aspire to listen the universal humming of the absolute misinterpret the sign as a gift of the Almighty and do not resort to treatment. So far so good! Many such conditions cannot be cured. But there are conditions like anemia that can be cured and conditions such as high blood pressure that can be managed to arrest further damages. Hence before confirming that that the sound is a token of proximity to Absolute wisdom, just be wise to check if the noise in ears is not the mischief of some physical or mental disease.

(contd. from page 22)

retasaam-upacaya-nimittam and *sushka-retasaam janana-nimittam.*

11. In ascitis *(udara)* there is excessive accumulation of filth *(mala)* in the body. That is why daily purgation is suggested. In *raaja-yakshmaa* (consumption) addition therapy *(brmhana)* is essential. But mere addition therapy will be futile because of the obstruction of the channels and due to the depletion of tissues and tissue fires. Hence all the medicines prescribed in consumption should clear the channels and ignite the bio-fire. Usually additive medicines do not have these properties. But *Indukaanta ghrta* containg *shatpala* is useful. *Shatpala* includes *pancakola* group of drugs which is the most important digestant. Ghee is the most important drug to kindle bio-fire. *Indukaanta ghrta* is a combination of ghee and *pancakola*. It will kindle the fire, digest the obstacles, make the channels patent, ensure nutrition and thus effect addition.

12. Theory and practice should go hand in hand. It is said that one who is well-versed in theory, but having no practical experience, will get confused as a coward in war front.

13. We study in *paandu roga* (anemia) that pitta is important. In its treatment, all the measures are against Kapha, not against Pitta. For example, after unction sharp medicines are used to effect emesis. On deeper study we understand that in anemia there is vitiation of Kapha in blood *(paandvaamaya sonita-gata kapha)*. Kapha vitiated in medas, obesity and diabetes are the results. Thus from the suggested treatments we can infer the pathogenesis.

14. There is no taste that mitigates both Vaata and Kapha. That is why most of the conditions of dual aggravation of Vaata and Kapha are incurable. For e.g., bronchial asthama *(tamaka svaasa)* is *yaapya* (manageable but incurable) because there is dual vitiation of Vaata and Kapha. Another example is osteoarthritis.

15. As fats and alcohol are capable of crossing the blood brain barrier, we are using fatty preparations like ghee and fermented preparations such as *arishta* and *aasava* in diseases of brain.

There should be humor sence in teachers and students so that study can be made enjoyable.

Reading is visual perception. Hearing is auditory perception. When you read aloud both the faculies are involved and study becomes easier because of this reinforcement. Similarly all possible audiovisual aids are to be incorporated in teaching.

For postgraduate education data collection, periodic presentations, seminars etc. are very important. Interpretation of texual setences are very important. Far from the direct literal meaning, the implications of the statements are also important.

The intelligent student is an essential component of ayurvedic education. The intelligent and sincere doubt of a student triggers the wisdom of a teacher. The teacher should be able to substantiate the textual statements.

Aptitude is another important factor.

Knowledge is an iceburg. Only the tip is perceptible outside the water level. Just by fragmentary knowledge we cannot attain the whole knowledge. Perpetual study, debates, referring of texts other than studied and serving a percepter excelled in the subject are considered as the goup of things that enhances intelligence and knowledge. *("Satata-adhyayanam vaadah Para-tantra-avalokanam Tadvidya-aacarya sevaa ca budhi-medha-karo ganah.")*

The entire world is the teacher to the wise and enemy to the unintelligent. *("Krtsno hi loko budhimataam aacaaryah; satrusca-abudhimataam".)*

Please remember the saying – "a bad teacher dictates notes, a good teacher delivers lectures and the best teacher inspires."

(contd. from page 8)

7. Yantra yoga: It employs sight and form to achieve the highest mental condition. *Yantra* is a geometrical design with power to influence concentration.

8. Kundalinee yoga: According to practitioners of this form of yoga, the coiled up dormant cosmic power *(kundalinee sakti)* that underlies the organic as well as inorganic matter is the primordial energy that lies in the lowest plexus of the spinal cord *(moolaadhaaracakra)* in a dormant, potential state. Kundalinee yoga is that yoga, which frees and improves this power, awakening it through breath control *(praanaayaama)*, postures *(aasana)* and gestures *(mudraa)* by the practitioners of hatha yoga, through concentration by practitioners of raaja yoga, through devotion by practitioners of bhakthi yoga etc.

9. Sankeertana yoga: *Sankeertana* is singing the praise of almighty with feeling of love and faith. In this type people gather together and sing God's name collectively.

10. Karma yoga: This is the path of selfless action and service without the thought of fruits of actions.

EIGHT STEPS OF YOGA *(Ashtaanga yoga)*

The following are the eight steps of yoga formulated by Patanjali. The knowledge of these eight steps of yoga is very important for the attainment of physical strength and mental peace.

1. **Yama**: It is the conduct towards others or involves the social discipline. Patanjali has classified yama in to five as –
   - Non-violence *(ahimsaa)*
   - Truthfulness *(satya)*
   - Non-stealing *(asteya)*
   - Moderation in sex *(brahma-carya)*
   - Non-acquisitiveness *(aparigraha)*
2. **Niyama**: It is the conduct towards oneself or individual discipline, Patanjali has mentioned five types of niyama –
   - Physical, mental and verbal cleanliness *(sauca)*
   - Contentment *(santosha)*
   - Austirity *(tapas)*
   - Self study *(svaadhyaaya)*
   - Surrender to God *(eesvara pranidhaa na)*
3. **Aasana**: It is practice of postures for attain ing physical discipline. Asanas are simple and complex in types.
4. **Praanaayaama:** means breathe control; to achieve the mental discipline. It consists of three steps. They are inhalation *(pooraka)*, retention *(kumbhaka)* and exhalation *(recaka)*. Before the practice of *praanaay aama*, one should practice the locks *(bandha)* as ex-plained by Patanjali viz.
   - Fly-up-lock *(udhyaana bandha)*
   - Glottis lock *(jaalandhara bandha)*
   - Anus lock *(moola bandha)*
5. **Pratyaahaara**: It is the withdrawal or the discipline of the five basic senses.
6. **Dhaaranaa**: Concentration of the physical attributes.
7. **Dhyaana**: Is meditation
8. **Samaadhi**: Is self-realization.

YOGA – CURATIVE ASPECTS

Praanaayaama: Controlled breathing calms the nervous system and relaxes the body and mind. Breathing smoothly and rhythmically keeps away the tension and maintains the nervous activity. Hence it is clinically found effective when there is no expected medicinal relief. Medicines along with some yogic procedures have been proved

very much effective. In some of the yoga centers praanaayaama is being effectively advocated to the patients of insomnia, indigestion and constipation and proved for its scientific efficacy.

Aasana: The postures have their direct effect on the musculo-skeletal system. In osteoarthritis and rheumatoid arthritis postures like *santulaasana, trikonaasana, gomukhaasana, setubandhaasana, siddhaasana* and *nataraajaasana* are very effective. The same posters are also useful in other musculo-skeletal ailments.

Role of yoga in diabetes mellitus: *Sooryanamaskara, ardhacakraasana, matsyaasana, suptavajraasana* and *dhanuraasana* are found effective in the stress induced diseases likes diabetes, hypertension etc. These yogic procedures have got effect on the endocrine glands and thereby are effective if advised along with some suitable drug therapy.

Asthma and yoga: Asthma is a most common problem due to allergens in the polluted air, characterized by difficulty in resperiation. Here the practice of *Ujjayi praan̲aayaama, Ekapaada utthaanasana, Tat̲aasana, Usht̲raasana, Sarvaangaasana, Mastyaasana, Padmaasana, S̲avasana* etc., are proved effective as all of these increases the strength of respiratory muscles.

Migraine & Sinusitis: these problems can be treated by *S̲eetal̲ee praan̲aayaama* alone. *S̲eetal̲ee praanaayaama* is found very effective in high blood pressure, but should be followed by *S̲avaasana*.

Obesity *(sthaulya)*: It may be because of hereditary or due to impaired function of thyroid or adrenal cortex or due to lack of exercises etc and it is one of the difficult conditions for medical treatment, but can be effectively treated with yoga.

Yoga schedule for *sthaulya* is given below:

1st week: *ekapaada utthanasana, utthanapaadasana,* and lastly *s̲avaasana* for one week.

2nd week: Along with the postures of 1st week *bhu jangaasana, s̲alabhaasana* and at the end *s̲avaasana*.

3rd week: Along with the above postures *santula naasana, pavanamuktaasana* and at the end *s̲avaasana*.

4th week: Along with all the above postures *dhanuraasna, ardhaakraasana, pas̲cimottaanaasana* and at the end *s̲avaasana*.

The above schedule is to be advocated along with dietetic regimen for obesity.

Cardiac problems and yoga: Simple *s̲avaasana* with concentration has good results in the patients of blood pressure. In other cardiac anomalies some simple postures like *pavanamuktaasana, vakraasana* and *praan̲aayaama* are found to yield result.

Thus yoga has proved efficient in the curative aspects in the challenging ailments in this highly developed era. There are so many diseases wherein yoga has got answer. Let the noble science live longer.

INSTRUCTIONS FOR YOGA PRACTITIONERS

Avoid tobacco, alcohol etc.

Always follow dietetic regimen during yoga therapy.

Consume nutrient light food.

Consume milk, fruits and green vegetables everyday.

Always practice yoga under the guidance of experts.