

Introduction to
AYURVEDA

(BASIC INDIAN MEDICINE)

? *By*

VAIDYARATNA

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Published by

SHRI GULABKUNVERBA AYURVEDIC SOCIETY,
JAMNAGAR (INDIA)

Copies can be had from
All the leading booksellers
or
GULABKUNVERBA AYURVEDIC SOCIETY
Jamnagar (INDIA)
© 1965 Ancient Wisdom Publication
1975 (for second edition only)
Gulabkunverba Ayurvedic Society
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Price: Rs. 20.

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FIRST EDITION, JUNE 1965
SECOND EDITION, JANUARY 1976

Printed by J. S. Khamesra for G. Claridge & Co. Ltd., Bombay, India, and
published by Shri K. P. Shah, Hon. Secretary,
Gulabkunverba Ayurvedic Society, Jamnagar.

To
The Memory of My Father
Vaidya Gopalji Kunverji Thakkur

ACKNOWLEDGEMENTS

We are indebted to certain sources in the preparation of this book, particularly to the Samhitas of Charaka, Sushruta and Vaghbata. Others have been mentioned at the proper places. While quoting the original texts of Ayurveda, we have mainly used the excellent translations that already exist. English translations and compilations of some Ayurvedic works especially of 'Charaka Samhita' and 'Clinical Methods' published by Shri Gulabkunverba Ayurvedic Society, Jamnagar, have been extensively used in this book.

Her Highness Gulabkunverba, the Maharani of Nawanagar, a great patroness of Ayurveda has all along taken keen interest in our work and encouraged us. We are therefore deeply grateful to her.

Grateful mention must also be made of Kaviraj D. N. Ray's 'Principles of Tridosha', Shri G. V. Purohit's 'Ayurvediya Sharira' and Shri C. G. Kashikar's 'Ayurvediya Padartha Vidnayana'. We are obliged to Pandit Shiv Sharma and Dr. K. K. Datey for having kindly consented to write the foreword. We also offer our sincere thanks to Dr. P. M. Mehta, the noted research Ayurvedic scholar and to G. Claridge & Co. Ltd. but for whose cooperation this book would not have appeared in its present form.

Finally, we express our deep gratitude to Hon'ble Dr. Fakhruddin Ali Ahmed, the President of India, and Hon'ble Shri B. D. Jatti, the Vice-President, for their valuable opinions on the book which no doubt add to the glory and glamour of this book.



राष्ट्रपति भवन नई दिल्ली - 110004
RASHTRAPATI BHAVAN NEW DELHI - 110004
INDIA

November 26, 1975.

Dear Shri Thakkur,

Thank you for sending me "Introduction to Ayurveda - The Science of Life" and other books written by you. I am glad you have brought out an authoritative text-book on Ayurveda and I am sure it will serve a very useful purpose. I hope your other books also will be read with interest.

My best wishes to you,

Yours sincerely,

(F. A. AHMED)

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उपराष्ट्रपति, भारत
नई देहली
VICE-PRESIDENT
INDIA
NEW DELHI

November 27, 1975.

Ayurveda or the Science of Life has a pragmatic worth, and is an asset to our culture, civilisation and science. I have always felt that the Ayurvedic system of medicine is unique and requires scientific research for its progress. It is of the utmost importance that the material on this subject which is scattered in different samhitas should be gathered, collated and presented in modern form. This type of work is particularly important today when the west is evincing keen interest in it. I am happy that an effort in this direction has been made by Dr. Chandrasekhar G. Thakkur who is well known in the Ayurvedic field. I understand that the first edition of his work came out in 1965 and that its French and German translations are ready for publication. Dr. Thakkur has rendered valuable service to the cause of Ayurveda through his lectures and talks in the West as well as Far East.

Dr. Thakkur's book is written in lucid style and reveals his deep knowledge and wide reading of authorities like Alexis Carrel, Colin Wilson, Kenneth Walker and Huxley. I have no hesitation in recommending his book to all those who wish to understand the true importance and significance of the great science of Ayurveda.


(B. D. Jatti)

PREFACE TO SECOND EDITION

Landing of man on Moon is story of yesterday. Meeting of two in astro-space is story of today. While I am printing these lines the news has arrived that Russian Yan has landed on Venus and is sending photographs. There is also a news that in July 1976 America is planning to land on Mars, where Theosophy believes that there is life. All these unique achievements in astro-space have not altered the picture of peace, progress and prosperity of mankind. The same age-old story, the blind leading the blind, persists and it is very difficult to make a comparison between the days of the permissive society and the modern sophisticated society. The urgent need of Ayurveda has not only remained as ever but has increased many times. The West has turned to teachings of *Yoga*, Japanese acupuncture, *Tantra*, Chinese acupuncture and the teachings of Buddhism, Jainism, principles of Chinese medicine and the theory of Yin and Yan, all are becoming popular day by day in advanced countries like America. Man is trying to come to Nature in order to become healthy, vibrantly alive, and in order that he gets in tune with the whole earth, he is simply turning to natural healing. In my tours abroad, starting right from October, 1971 till the signing of this Preface, December 1975 (about eight trips in the West of which three have been round the world) and my visits to U.K., Europe, U.S.A., Canada, Japan, Hong Kong, Singapore, Iran, Africa and other countries, I have been fully convinced by the warm response my lectures to various Universities, Lions and Rotary Clubs, appearance on various Televisions, Radio Broadcasts, apart from my hour-long classes in U.S.A. on Ayurveda, of the vital need of Ayurveda and introducing it to the modern man and I am reminded of the lines from Albert Camus: "In the midst of winter I finally learnt that there was an invincible summer."

Only an understanding of the nature of life can bring man into complete harmony with the universe and the theory of macrocosm and microcosm or *Pinda Brahmanda Nyaya*, as mentioned in ancient Sanskrit literature, or "As above, so below". It is fully embodied in Ayurveda. Garlic which 2000 years ago was hot in action and Moong (green gram) which was cold in action still remain so to this day and the theory of the five elements (earth, water, fire, air and ether), the three basic factors (*vata*, *pitta* and *kapha*), the seven body nutrients (the food juice, blood, flesh, fat, bone, bone-marrow and vital essence), the excretions of the body, the six tastes in diet (sweet, sour, salt, pungent and astringent), hot and cold action of food in the body, the three post-digestive actions (sweet, sour and pungent) and their effects on the body, the various seasons, the daily normal routine and the dietary regimen in details, the effect of the food item not merely in terms of carbohydrate, fat and proteins and starch but in maintaining health, subsiding disorders—all these have received universal appreciation. I recall my lectures abroad, of which one, in New York, lasted from 6 p.m. to 6 a.m. and the giants and geniuses from the cream of society and from various walks of life—barristers, attorneys, scientists, physicists and medicos too—attended the talks and when the basic principles of Ayurveda were made available to them, when they understood it, the highest reward I got in my life

was that the need of Ayurveda was just the same in Paris, London, Geneva, Frankfurt, New York, Chicago, San Francisco, Florida, Tokyo, Singapore, Tehran, Nairobi or Hong Kong. This book which has seen the light of day in American edition in hard cover and is being warmly received, is going to see the light of day in paper back and its French, Japanese and German translations are ready to go on the machine.

I am indebted to the authorities of Gulab Kunverba Ayurvedic Society, who found it necessary to publish this book, the first edition of which was sold out immediately. There have since been many enquiries, which have been pending but for want of time, the last five years having been practically devoted to my world tours, I am sorry I could not make this book available. However, with the publication of this edition, I am sure a long-felt gap will be filled.

With these words, I think, I should close my note on this the second edition of the book, and I am happy to announce that my book "The Principles of Ayurvedic Medicine (Diagnosis and Treatment)" will also soon be out.

375, Kalbadevi,
Bombay-2.

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FOREWORD

There is an impression among certain educated people in India in general and the modern medical profession of India in particular that the allopathic medicine has drawn all that is useful from other systems of medicine. Vaidyaraja Dr. Chandrashekhar G. Thakkur's treatise, *Introduction To Ayurveda* shall go a long way in removing this wrong notion from the minds of men who are not averse to learning new facts, or, perhaps, in the present case, old facts, of which they are ignorant. It is not only the cures of patients through Ayurveda, after the complete failure of the modern treatment conducted at the highest level, as also the large number and great frequency of such cures, which effectively contradict the notion that the "modern" medical system has made all other existing approaches to health and disease entirely redundant, it is the manner of the application of the Ayurvedic concepts and the very ingredients of the medicines employed to achieve the cure that demonstrate beyond any doubt that a very great amount of useful knowledge continues to exist outside the corpus of allopathic medicine.

To illustrate the above take the case of a child of 11, D.S., who suffered from acute nephritis. He was undergoing modern treatment at a Bombay hospital under the care of two leading allopaths, one of whom represented the country's vanguard in the medical line. The condition of the child continued to grow from bad to worse despite the best treatment the modern medicine could offer in India. When the prognosis became "grave," the highlights of the child's condition were: Blood pressure: 180/130; Blood urea: 166.9 mgms; albumin: not estimable as the urine coagulated whenever heated; girth of the abdomen 28"; marked anasarca and ascites (i.e., retention of fluid in the body and the abdomen due to dropsy); marked anaemia and presence of granular and hyaline casts, pus cells, and red blood cells in the urine. The patient had a marked pre-coma drowsiness with frequent and distressful vomiting. The quantity of urine had come down to less than 10 ounces in 24 hours.

At this stage the child was placed under the Ayurvedic treatment. It was more an act of desperation rather than that of hope. However, the child staged a spectacular recovery under the Ayurvedic treatment. At the time of writing this note he has just completed 8 weeks of Ayurvedic treatment. The present pathological tests reveal the following condition:—Blood pressure: 106/68; Blood urea: 42 mgms; albumin: 0.1 per cent; the casts and pus cells have totally disappeared; red blood cells are persisting in small numbers but will disappear soon; abdominal girth 19.5"; oedema completely gone. The child is running about in the house and one day ran away from the house, having quarrelled with his mother, protesting against the salt-free diet, and had to be brought home back from Marine Drive, Bombay's beautiful promenade.

This case has not been mentioned so much to show that Ayurveda succeeded in saving a life where the allopathic medicine had failed to do so, and would have failed probably in any part of the world, not excluding New York, Moscow and London. The case

FOREWORD

has been quoted here to demonstrate a fact of a much greater importance than merely a cure; and that fact, which cannot be emphasised too much, is that the heavy metals employed by Ayurvedic physicians to pull many advanced cases of nephritis out of the jaws of death are just the metals which, according to modern medicine, should not fail to *cause* nephritis in even a healthy man if he takes these metals orally!

Not a day passes when an allopathic physician here or an allopathic surgeon there does not frighten this patient or that into giving up the Ayurvedic treatment by telling him that the heavy metals contained in the Ayurvedic medicines will damage his kidneys and cause nephritis which may prove fatal. Many patients would have been alive today, or would have at least lived much longer than they did, had they not been persuaded to give up the Ayurvedic metallic treatment through the inculcation of the fear that the use of the metals will lead them to nephritis. And yet the Ayurvedic gold, mercury, or copper can be given *indefinitely* and with good results, even to those patients who suffer from nephritis as a result of the treatment with the modern gold, mercury or copper compounds. The child in the case cited above who has staged a spectacular recovery from nephritis, after the failure of the modern medicine in the hands of India's leading allopaths, has been consuming sizeable quantities of these three metals and is maintaining a uniform rate of progressive healing of the kidneys.

There is no need to multiply these instances. They are legion. The one given above should be enough to arouse interest in Ayurveda in the minds of the scientifically curious.

It is for this purpose that Vaidyaraja Dr. Chandrashekhar G. Thakur has prepared this treatise in English language to enable the publication to carry its message to the largest number of educated people in the world. Since the book is written by an eminent Ayurvedic physician who is himself not only a clinician of merit but also a well known Ayurvedic educationalist and author, it is, naturally, free from those flights of faulty imagination and distortion of concepts which are so often the characteristics of the work of the non-Ayurvedic Indian or foreign writers on the subject. *Introduction To Ayurveda* gives in a clear and simple language the concepts of Ayurveda for the benefit of those genuinely desirous of knowing what it is all about. In making this book available for study Vaidyaraja Dr. Chandrashekar G. Thakur has rendered a meritorious service both to the science as well as to those who wish to learn it but find it inaccessible on account of their unfamiliarity with the Sanskrit language.

SHIV SHARMA

16th May 1965.

P R E L U D E

HIROSHIMA and Nagasaki form a landmark and turning point not only in the history of war but also in the history of human civilization as a whole including Medicine.

The splitting of the atom has caused the disintegration of the long standing concept of matter and life. Man had counted on a world built up of atoms which were irreducible units of matter; but now that the Atom is broken, the ground under this belief has given way. He must therefore hasten to readjust and build anew his life's concepts and raise an atom-proof-house of understanding.

The world, not to speak of the human individual, has ceased to be simply material, and man's new vision presents to him an interplay of invisible radiations, each subtler than the other, leading to the unfathomable mystery of all phenomena, but suggesting an overall force that controls, directs and absorbs all the inferior emanations towards a single end.

What applies to the world of Phenomena applies with equal force to the individual, the Noumenon. The central core which is covered by layer after layer of impressions, reflexes, a psycho, physical sheaths, is a mystery beyond contemplation and is understood and seen in its play as whole; that is the soul, mind and body conglomerate, the whole man, known as Purusha.

The new light of biological researches has reinstated the concept of the whole man as all important in Medicine and the Atom and the body cell are not isolated units but integral parts of the life of the World and the human body respectively. Every explosion here has its repercussions elsewhere and creates a change in the total balance.

This is as true of physics as of physiology. The mutual reactions of the cell and body as well as the environment are yet to be fully explored and co-related. In a word, we are re-echoing the age-old truths of life and man. The concept of ENTELECHY propounded by ATREYA and ARISTOTLE is once again the guiding principle of Medicine and Science.

The sciences of Anatomy, Physiology and Psychology have analysed this conglomerate and have resolved him into his minutest parts of the hair and nerve cells. The roots of the impulses have been studied, observed and measured, with the net result that man has been found wanting. His stature is dwarfish ethically and

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spiritually, his selfishness is irredeemable and his aspirations childishly fickle and hollow and mere toys to play with. In his inner evolution, he has not risen beyond the level of the carnivores in spite of immense achievements of the modern science.

The achievements of modern science are stupendous despite the blind alley to which they have led.

But, what is or rather ought to be, the purpose and aim of all this development and opportunity? None of these—neither health nor leisure, nor comfort nor even enlightenment is an end in itself. These must lead to some fundamental advantage, some basic metamorphosis in man. First of all they must enable man to be proof against the ever shifting features of the external environments of temperature, season and social conditions. Internally, the ravages of age, predisposition of inherited tendencies have to be reckoned with and countered.

His might must be liberated from material preoccupation in order to contemplate the possibilities of human life in the realms of truth, beauty and goodness. For, man is perpetually aware of the powerful urge in him for happiness, knowledge and goodness. Health, wisdom and kindness are therefore his highest values and in their achievements, his life and intelligence get fulfilled and justified. Long ago, Shakespeare the poet of all times, sang about man thus: "What a piece of work is man! How noble in reason, how infinite in faculty! in form and moving how express and admirable! in action how like an angel! in apprehension how like a god!" It is indeed out of such godly apprehension that the science of life Ayurveda has come into being; and its objective is to help man to realise his godly nature and uphold such purpose throughout life.

The sages of yore in the golden age of India and Greece propounded godly ideas for man and led him gently along the path of divinity. Their development of knowledge has been along the two great methods of analysis and synthesis and correlations of them. Though these two methods are opposed to each other in nature, the cumulative product of these two methods constitutes the totality of knowledge and wisdom. In their synthetic concept of man-cum-environment, man was the one end of the whole, the other end of which was environment.

Then there came a dark period in the East as well as in the West.

With the renaissance analytic period began; it ignored the totalistic aspect and synthetic co-ordination; with the industrial revolution, wrought by the upsurge of science, Europe reawoke to a new life of scientific discovery, material advancement and political domination. Ever since, wealth, pleasure and power have guided

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the life of the west; and true wisdom in which the simplicity, beauty and all-beholding vision are foremost, gets paid only a lip homage.

The split atom now compels man to take review of himself and his progress; and he finds that his physical and mental ills have yet found no lasting remedy, and his science is tossed about between conflicting theories. Meanwhile natural catastrophes, pestilences and war threatened to wipe him out of existence. There is an essential lack in his wisdom despite all that modern science and civilization stand for. Ayurveda the Science of Life and Living has a message for man of this hour. An understanding and assimilation of its secret and message is fraught with redeeming value for humanity for ever.

Dr. Henry E. Sigenist, Director of the Institute of the History of Medicine of Johns Hopkins University says: "West had its Renaissance in the 15th century and it led to the development of science and technology which are threatening to destroy the world. You have your renaissance now and are going to create a synthesis between modern or western medicine and Indian thought. Dr. Mehta has faith and his convictions that India has a message to give to the world. *It has and unless we get it, the World will go to pieces*".

As a result of the impact between her age-old culture and the new forces of modern thought from the West, India became conscious of her mission and special contribution to the world in the matter of thought, way of life and spiritual ideas. The inadequacies of modern Scientific Mode of life and thought became gradually evident and the people of the West themselves realised that mere scientific achievement was going to lead mankind nowhere. They found that the literature, philosophy and medicine of ancient India are full of inspiration for moral and spiritual upliftment of man. The Western scholars luxuriously translated all the religious books of Hindus, Jains, and Buddhists but unfortunately Ayurvedic Classics were left out. The result is that the world is nearly ignorant of precepts of Ayurveda and Ayurveda today suffers in the estimation of the world more through world's ignorance of her achievements rather than through the absence or insignificance of such achievements.

Renaissance of Ayurved is just passing through its early period. The light of understanding has to pass through three different media to explain the whole of Ayurveda to the people, viz., (1) the study of original text which is in Sanskrit, (2) the thinking of man which depends on his education and experience, (3) the explanation that is needed is to be given in English.

This is the condition of Ayurveda in India—the Mother Land of Ayurveda. At the present time the foreigners have developed further fascinations and curiosity for the knowledge and wisdom of

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Ayurveda. They found it difficult to get the right man or true information. Under these circumstances there was an urgent need to prepare a book by a man who is a good scholar of Ayurveda, who has got good experience and who is able to express himself in English. Just at this moment a young, enthusiastic and energetic physician has taken up this mission. Dr. Chandrashekhar comes from a respectable Vaidya family. His revered father enjoyed a dignified position in the Ayurvedic world. His son, the present author, was brought up in the fertile and wholesome atmosphere of Ayurveda. He had advantage of regular training in an Ayurvedic college. Home and college education educed and developed his latent capacities and potentialities. He cherished passionate love for Ayurveda and so devoted all his activities to the deep studies of Ayurveda. He became a voluminous writer and published more than fifty books on various subjects related to Ayurveda. He contributes regularly to the daily newspaper on medical matters, and conducts an Ayurvedic Journal. He, realising the present need of Ayurved conceived an idea of initiating the English knowing people in India and outside, and with this view he has prepared an excellent volume to introduce the people to the main fundamental of Ayurveda. The present book will fulfil the need not only of India but of all foreign scholars who are in search of right information about Ayurveda. The book is written in simple and lucid language and so it will be easily understood by all. It will awaken a desire to study Ayurveda in persons who are ignorant of Ayurveda and it will stimulate the physicians to make dispassionately deep and all-comprehensive study of Ayurveda.

Thus the author has implanted a fresh and creative seed in the medical world. The season is fully favourable (as there is an urgent need) and the wise and thoughtful people all over the world are in a mood to furnish favourable fertilizing materials, and we hope that this seed will fully blossom and give light to people and show them the way and means to accomplish perfect physical, physiological, psychological and spiritual health not only of the individual, but of the whole humanity which is the true message of Ayurveda.

P. M. MEHTA,

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Bombay, 21st May 1965.

PREFACE

'Now that India has obtained complete independence and has become a co-equal, in a group of allied nations, she has much to give us out of her store of ancient learning.'

—KENNETH WALKER

There is a famous dilemma with which those who burnt down the well-known Alexandria library confronted its keepers. If, so the argument went, the books contained what was already there in the Holy Book, they were superfluous, and if they had something else, they were sacrilegious. In either case they deserved to be destroyed. This is precisely the dogmatic attitude of many modern practitioners of the so-called scientific medicine to Ayurveda in India. What is of value in it, we already have, so they argue; for the rest it just has to recommend potions like those brewed in the witches' cauldron—of no true worth for the alleviation of human suffering.

Though this attitude is slowly but steadily undergoing change, there are a few like Sir William Jones, English Orientalist, who aver that 'There is no evidence that in any language of Asia, there was one original treatise on medicine, considered as science.' This is such an obvious travesty of truth that one may feel inclined to laugh it away as a matter of sheer ignorance; but even in our own country, there is such a widespread misunderstanding and misconstruction of Ayurvedic principles, that some endeavour to throw some light on them is an urgent need. There exist no doubt a few other attempts in this direction but we feel that there is wide scope for a fresh one which is at once accurate and exact as well as simple enough to be intelligible to the interested layman and also the more scientifically inclined persons whose speciality is not Ayurveda.

That we are not bolstering up bogus or even exaggerated claims on behalf of Ayurveda is sufficiently shown from what Will Durant has to say, in his famous work, "Our Oriental Heritage" on the subject:

"Chemistry developed from two sources, medicine and industry. Something has been said about the chemical excellence of cast iron in ancient India and about the high industrial development of Gupta times when India was looked to even by Imperial Rome as most skilled of the nations in such chemical industries as dyeing, tanning, soap making, glass and cement. As early as the second century B.C. Nagarjuna devoted an entire volume of Mercury . . . Anatomy and physiology like some aspects of chemistry were by-products of Hindu Medicine. As far back as the 6th century B.C., Hindu physicians described ligaments, sutures, lymphatics,

nerve plexus, facia, adipose and vascular tissues, mucus and synovial membranes and many more muscles than any modern cleverer is able to show . . . They understood remarkably well the processes of digestion . . . the different functions of gastric juices, the conversion of chyle into chyle and of this into blood. Anticipating Weismann by 2400 years Atreya 500 B.C. held that the parental seed is independent of the parent's body and contains in itself in miniature the whole parental organism. Examination of virility was recommended as a pre-requisite for marriage in man and the code of Manu warns against marrying mates affected with tuberculosis, epilepsy, leprosy, chronic dyspepsia, piles or loquacity. Birth control in the latest ethiological fashion was suggested by the Hindu medical schools of 500 B.C. in the theory that during first 12 days of menstrual cycle impregnation is impossible. Foetal development was described with accuracy; it was noted that the sex of the foetus remains undetermined for a time and it was claimed that in some cases the sex of embryo could be influenced by food or drugs.

“Appended to the Atharva Veda is the Ayur Veda (‘The Science of longevity’). In the latest system of Hindu medicine the illness is attributed to disorder in one of four humours (air, water, phlegm and blood) and treatment is recommended with herbs and charms. *Many of its diagnoses and cures are still used in India, with a success that is sometimes the envy of western physicians* (italics ours). The Rig Veda names over a thousand such herbs and advocates water as the best cure for most diseases. Even in vedic times physicians and surgeons were being differentiated from magic doctors and were living in houses surrounded by gardens in which they cultivated medicinal plants.

“The great names in Hindu Medicine are those of Sushrūta in the 5th century before and Charaka in the 2nd century after Christ. Sushrūta, Professor of Medicine in the University of Banaras wrote down in sanskrit a system of diagnosis and therapy whose elements had descended to him from his tutor Dhanwantari. His book deals at length with surgery, obstetrics, diet, bathing, drugs, infant feeding and hygiene and medical attention. Charaka composed a Samhita (or encyclopedia) of medicine which is still used in India and gave to his followers an almost Hippocratic conception of their calling ‘not for self, not for the fulfilment of any earthly desire of man, but solely for the good of suffering humanity should you treat your patients and so excel all.’ Only less illustrious than these are Vagbhata (625 A.D.) who prepared

a medical compendium in prose and verse and Bhava Misra (1550 A.D.) whose voluminous work on anatomy, physiology and medicine mentioned, a hundred years before Harvey, the circulation of the blood and prescribed mercury for that novel disease, syphilis, which had recently been brought in by the Portuguese as part of Europeans heritage to India.

“Sushruta described many surgical operations, cataract, hernia, lithotomy, Caesarian section, etc. — and 121 surgical instruments including lancets, sounds, forceps, catheters and rectal and vaginal speculums. Despite Brahmanical prohibitions he described the dissection of dead bodies as indispensable in the training of surgeons. He was the first to graft upon a torn ear portions of skin taken from another part of the body and from him and his Hindu ancestors rhinoplasty—the surgical reconstruction of the nose—descended into modern medicine. ‘The ancient Hindus,’ says Garrison ‘performed almost every major operation except ligation of the arteries. Limbs were amputated, abdominal sections were performed, fractures were set, haemorrhoids and fistulas were removed.’ Sushruta laid down elaborate rules for preparing an operation and his suggestion that the wounded be sterilized by fumigation is one of the earliest known efforts of medicinal liquors to produce insensibility to pain. In 927 A.D. two surgeons trepanned the skull of a Hindu king and made him insensitive to the operation by administering a drug called Samohini.

“For the treatment of the 1,120 diseases that he enumerated, Sushruta recommended diagnosis by inspection, palpation and auscultation. Taking of the pulse was described in a treatise dating 1300 A.D. Urine analysis was a better method of diagnosis. Tibetan physicians were reputed able to cure any patient without having seen anything more of him than his water. In the time of Yuan Chwang, Hindu medical treatment began with a seven-day fast; in this interval the patient often recovered; if the illness continued, drugs were at last employed. Even then drugs were used very sparingly; reliance was placed largely upon diet, baths, enemas, inhalations, urethral and vaginal injections and blood lettings by leeches or cups. Hindu physicians were especially skilled in concocting antidotes for poisons; they still excel European physicians in curing snakebites. Vaccination unknown to Europe before the 18th century was known in India as early as 550 A.D., if we may judge from a text attributed to Dhanwantari, one of the earliest Hindu physicians.* ‘Take the fluid of the pock on the udder of the cow . . . upon the point of a lancet and lance with it the arms between the shoulders

and elbows until blood appears; then mixing the fluid with the blood, the fever of the small-pox will be produced. Modern European physicians believe that caste separateness was prescribed because of the Brahman belief in invisible agents transmitting disease; many of the laws of sanitation enjoined by Sushruta and Manu seem to take for granted what we modern who love new words for old things, call the germ theory of disease. Hypnotism as therapy seems to have originated among the Hindus who often take their sick to the temples to be cured by hypnotic suggestion or 'temple sleep' as in Egypt and Greece. The Englishmen who introduced hypno-therapy into England—Braid, Esdaile and Elliotson—'undoubtedly got their ideas and some of their experience from contact with India'.

"The general picture of Indian medicine is one of rapid development in the Vedic and Buddhist periods, followed by centuries of slow and cautious improvement. How much Atreya, Dhanwantari and Sushruta owed to Greece and how much Greece owed to them we do not know. 'In the time of Alexander', says Garrison 'Hindu physicians and surgeons enjoyed a well deserved reputation for superior knowledge and skill and even Aristotle is believed by some students to have been indebted to them.' So too with the Persians and Arabs; it is difficult to say how much Indian medicine owed to the physicians of Baghdad and through them to the heritage of Babylonian medicine in the Near East; on the one hand certain remedies like opium and mercury and some modes of diagnosis like feeling the pulse, appear to have entered India from Persia; on the other hand, we find Persians and Arabs translating into their languages, in the 8th century A.D. the thousand year old compendia of Sushruta and Charaka. The great Caliph Haroun-al-Rashid accepted the pre-eminence of Indian medicine and scholarship and imported Hindu physicians to organise hospitals and medical schools in Baghdad. Lord Ampthill concludes that the medieval and modern Europe owes its systems of medicine directly to the Arabs, and through them to India. Probably this noblest and most uncertain of the sciences had an approximately equal antiquity and development in contemporary conduct and mutual influence in Sumeria, Egypt and India."

This quotation has been given in extenso in spite of some inaccuracies in it, such as the confusion between the four Greek humours and Tridoshas of Ayurveda, because it not only brings out the importance of Ayurveda but also puts it in its proper perspective.

We may add one more opinion of an eminent authority to reinforce this conclusion.

This is what Gertrude Emerson observes in "The Story of Early Indian Civilization" (pp. 32-33):

"The most remarkable part of Charaka's work is his classification of remedies drawn from vegetable, mineral and animal sources over two thousand vegetable preparations derived from the roots, bark, leaves, flowers, fruits, seeds or sap of plants and trees are described and Charaka also gives the correct time of the year for gathering these materials and the method of preparing and administering them. Charaka sounds surprisingly modern . . . that he had a good idea of blood circulation is apparent from this passage in his treatise: 'from that great centre-heart emanate the vessels carrying blood into all parts of the body—the element nourishes the life of all animals without which it be extinct.' High ethical standards to be maintained by the medical profession are also stressed by Charaka. He says 'Not for money nor for any earthy objects should one treat his patients. In this the physician's work excels all vocations'."

And about Sushruta, Gertrude Emerson observes: "Sushruta whose date is some times placed as early as 700 B.C. was a surgeon. He calls surgery 'the first and best of medical sciences.' He insists that those who intend to practise it must have actual experimental knowledge of subject. One who possesses only verbal knowledge of texts he likens to a donkey, conscious of weight but not of the quality, of the load he carries . . . For preliminary training students were taught how to handle their instruments by operating on pumpkins or cucumbers and they were made to practise on pieces of cloth or skin to learn how to sew up wounds. Major operations as described by Sushruta included amputations, grafting, setting of fractures, removal of a foetus and operation on the bladder for removal of stones. The operating room he declares should be clean and both before and after an operation it should be disinfected with cleansing vapors. He describes 127 instruments used for such purposes as cutting, inoculation, puncturing, probing and sounding, cutting instruments, he declares, should be of bright, handsome, polished metal and sharp enough to divide a hair lengthwise." •

There are some notions prevalent about Ayurveda which we would like to clarify for a science-minded reader, the first and foremost being that Ayurveda must be patronised because of its cheapness. We completely disagree with this line of argument. No

doubt Ayurveda treats about 80 to 90 per cent of the population in India, the majority of whom cannot afford to go in for costly medicines and therefore use simple Ayurvedic remedies. Even so there are many costly Ayurvedic medicines e.g. Diamond, Gold, Mica, Musk, Amber, Makaradhwaja, etc. If we look back to the ancient times, we find that there were Royal physicians who used to charge exorbitantly and the kings and queens patronised them. The well-to-do class also go in for costly medicines. Therefore we would like to see Ayurveda accepted for its intrinsic worth. In this connection we can do no better than quote Dr. Henry Sigerist, one of the greatest historians of medicine, who says: "Ayurveda has a message to give to the world and unless we get it the world will go to pieces."

In our view, Ayurveda should not only be accepted as sacred knowledge which has come to us through the ages but advanced countries should utilise their resources for conducting research in Ayurveda which might pay good dividends.

Next we come to the oft-repeated suggestion that Ayurveda is unscientific. In the eyes of those who put forward this argument, everything old is unscientific and that alone is scientific which is new. A study of the chapters that follow will unmistakably establish the scientific nature of Ayurveda. The detailed, classified, orderly arranged, systematised and formulated facts contained in this book speak for themselves.* Max Muller says: "The able and the noble Aryan belief had respect for the truth and accordingly whatever they used to believe they used to declare it with courage and they used to establish the fact according to classics and due to this extraordinary intelligence, Upanishads, Brahmans and the philosophical texts came into existence." In the same classical period Ayurveda was also compiled, and Dr. P. M. Mehta, M.D., M.S., F.C.P.S., F.I.C.S., affirms "The scientific standard of Ayurveda was much higher than today's scientific standard. It is a certain fact." Charaka in Sutra Sthana, Ch. J, says as follows: "All the unhappiness in body and mind is due to absence of knowledge of science and all happiness in body and mind is due to having clear scientific knowledge." All this is sufficient to show that Ayurveda is scientific.

"Where is the Pathology in Ayurveda?" is the mocking question we are sometimes asked by superficial observers, of course. Samprapti or Pathology in Ayurveda implies correct knowledge of the exact nature of disease as to its seat, its mode of advent or

* 'Science' as defined by latest 'Chamber's Twentieth Century Dictionary' is as follows:

Science: n: knowledge: knowledge ascertained by observation and experiment, critically tested, systematised and brought under general principles: a department or branch of such knowledge or study.

birth in the body, its principal cause and the different forms in which it manifests itself, along with a thorough understanding of the various factors working to produce a complex disease, presenting a combination of disorders at one and the same time. Samprapti is divided into five types as discussed in the chapter on Pathology.

It should be remembered that the Ayurvedists have laid emphasis on the examination of a particular thing by three methods—Pratyaksha (practical methods), Aptopadesha (the teachings of learned sages and elder people) and Anumana (inference).

In the face of such overwhelming data, it is baseless to argue that Ayurveda does not take pathology into account. Suffice it to say, the pathological description for a particular disease needed for successful Ayurvedic treatment is given in sufficient detail, based on Ayurvedic theory. Besides, wise and modern commentators of the great compendia like Charaka, Sushruta, Vaghbata and Madhava have discussed in great detail the pathological aspects of each and every disease. A successful Ayurvedic practitioner has not to grope in the dark as far as pathology is concerned.

Then there are those who are convinced about the efficacy of Ayurvedic treatment but deplore the inadequacy of diagnostic methods. They would like us to incorporate modern methods like blood count, urine analysis, screening, X-rays, sputum examination, etc. They forget that Ayurvedic treatment is prescribed according to the principle of Ayurvedic diagnosis and a clever physician has no need to look beyond the limits of Ayurveda to outline his treatment; he finds no use for the modern medical gadgetry.

We can have no objection to any physician acquiring knowledge about modern methods which may help him when a patient approaches him, to follow the diagnosis and treatment which the patient has undergone at the hands of a modern physician. Modern methods of diagnosis have gained such currency that even patients know lot about them. In such circumstances, the Ayurvedic physician would probably look small if he did not possess a smattering knowledge of the various forms of diagnosis. Beyond that an Ayurvedic physician need not bother about modern methods.

We have also cleared the basic differences between the other existing systems and Ayurveda. The fundamental disparity is so wide and evident that it seems there is no point where East and West can meet on this basic difference.

Further we should point out that Ayurvedic physicians themselves knew the various methods of treatment and, what is more, they were aware of all the possible methods of treatment which can exist on this earth, because in the definition of Upshaya they have given eighteen different uses of drugs, diets and practices and one

can see that the various systems of medicine existing even today are included in these eighteen types. However, Ayurveda has stuck to its own fundamental beliefs ignoring all other methods of treatment, saying that permanent cure is possible only with a pure medicine and a pure drug. That is known as Shuddha or pure chikitsa. Upshaya is the beneficial or happy administration of drugs, diets and practices and mode of living :

- (1) contrary to the cause
- (2) contrary to the disease
- (3) contrary to both the cause and the disease
- (4) similar to the cause
- (5) similar to the disease and
- (6) similar to both the cause and the disease.

Pandit Shiv Sharma comments on this saying that the term Upshaya is not restricted to beneficial administration of medicine only. But the science of Ayurveda covers a much wider field. The definition of Upshaya shows beyond doubt that the principle of homoeopathic treatment, *similia similibus curantur*, was known to the ancients at an early date and they were fully acquainted with the law of contraries of the allopathic system of medicine. Each of the three great factors of Upshaya (advantageous or happy administration of the drugs, diets and practices) is divided into two categories of contrary and similar types of treatment. This makes six kinds of Upshaya which, again, are subdivided into eighteen kinds on the basis of the action of each which is of six forms.

We may sometimes be accused of certain repetitions in the following chapters but this is deliberate as some points deserve to be emphasized in the different contexts in view of their novelty and distinctiveness and this is the main purpose we have kept in view throughout. To understand the patient as a whole, is the physician's first and foremost task, but how and in what terms? Not merely as a victim of certain adventitious factors like germs, etc., but as a complex of certain basic factors which are liable to derangement and disorder through various causes such as age, diet, climate, season and the rest; and having done this, to go on to prescribe matching modes of treatment, to restore him not only to a state where his particular complaint has disappeared but to a condition of happiness wherein the body and the mind are equally involved. We think of Ayurveda as a modern 'must' because its appreciation and practice can materially contribute not only to mitigation of disease but more positively to the regeneration and revitalization of the individual, as well as of society.

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CHAPTER ONE

LET US ASK

WHEN any one wants to know what Ayurveda is, he often reminds us of the superficial and supercilious attitude of the Jesting Pilate, who according to Bacon, asked 'What is Truth?' but would not wait for an answer. With certain popular prejudices in him, he seeks quick answers in terms of preconceived categories, such as have arisen, for example, from a misunderstanding of what is 'scientific'. There are certain aspects of Ayurveda which are distinctive of it but not amenable to direct empirical proof or disproof. With regard to these we have to follow the scientific hypothetico-deductive method as is done even in Physics, and accepting them provisionally, go on to test their validity by their pragmatic worth.

With this fact in our mind, we may go on to ask 'What is Ayurveda?' Etymologically it means 'the science of life' ('Ayur' = life, 'Veda' = a science or study). In this it is akin to the word 'Biology' but from which it differs on a very vital point. Ayurveda may now appropriately be spoken of as the 'Science of Living' — thereby bringing out its practical implications as well.

Ayurveda particularly covers not only the knowledge of life but knowledge of healthy living. While defining the nature of Ayurveda, its earliest exponents clearly stated its twin concern: with the normal as much as with the abnormal or pathological. It is firstly, to impart that knowledge which enables a healthy person to maintain his health. This was emphasised no less than the other aspect of this 'know-how'—that which is directed to the cure of disease. So it will be clear from this definition that Ayurveda is not merely a science or knowledge of drugs, herbs or some effective remedies but has a much wider connotation.

The Ayurvedists have given to us in the ancient texts considerable knowledge of life which is equally useful today. The fundamental principles of Ayurveda are most interesting as they are unchangeable and not affected by 'winds' of doctrine, even though there have been many additions and amendments from time to time to the applications and implications of the original principles, without however altering or changing their essence.

In Ayurveda, the term 'Vyadhi' is defined as that which brings about the different forms of unhappiness, and the word 'Roga' is defined as that which causes discomfort.

The body is believed to be composed of five basic factors (Pancha Mahabhutas) viz. Prithvi (earth), Jala (water), Agni (fire), Akasa (ether) and Vayu (air). The whole universe is also believed to be composed of the same and hence the food we eat, the water we drink, the air we breathe — all these to aid the nutrition of our body — are composed of the same five chief components. This is the original idea — the foundation of Ayurvedic thinking — the harmony that exists between the microcosm and the macrocosm.

The above mentioned five basic factors give rise to three somatic Doshas, viz. Vayu, Pitta and Kapha. It is believed that the combination of earth and water gives rise to Kapha, the combination of fire and earth results in Pitta and the combination of Vayu and Akasa gives rise to Vayu. These three somatic Doshas, Vayu, Pitta and Kapha, when they are normal in proportion and action, rule the functions of the body in a normal manner and thus a person enjoys normal health; but due to abnormal diet, practices or some other reasons, when there is derangement of or changes in the proportions and actions of the three somatic Doshas, the body suffers. To make it more clear, we would say that the three somatic Doshas, Vayu, Pitta and Kapha (which hereafter we will be calling “Tridoshas”), when normal in body, maintain health and when they are in an abnormal state they give rise to disease. When we say that these Tridoshas rule normal health, we clearly mean that they control the health of the body as well as the mind. Ayurveda has classified disease as Sharirika and Mansika, both being co-existing aspects of a total entity.

The theory of Ayurveda chiefly advances the view that every disease involves derangement of either one of the Tridoshas or a combination of two of them or of all of them.

Modern medical science thinks in terms of infection where any germ or bacterium or a group of them affect a particular portion of the body causing inflammation of the same, giving rise to the discomfort. Ayurveda does not deny this sort of happening but it believes that it is only due to the abnormality in any of the functions of the Tridoshas.

Furthermore, Ayurveda has got one more distinctive aspect. Ayurveda believes that there are different types of the physical constitution (Deha-prakriti) — a view which closely resembles that of Kretschmer and Sheldon. According to this, the three main physical constitutions are known as Vatika, Paitika and Kaphaja. These physical constitutions are the result of the predominant Dosha at the time of combination of the spermatozoon with the ovum in the womb when the foetus comes into being. According to the predominance of the Dosha at the time of this combination the

constitution of that Dosha is created and that remains unchanged from birth onwards until the end of life. Ayurveda also adds that this physical constitution being unchangeable, no medicine can ever change the Deha-prakriti or the physical constitution.

The ancient sages have given in detail the particular physical as well as mental characteristics of each of these physical constitutions which we will give later on. There is definite variation in the diets, habits, etc., of each physical constitution. However, there are other factors also guiding the main response of the physical constitution of a person, such as the race, the country, the seasons, the hereditary factors, the environment and so on.

Each physical constitution has got a different reaction to a particular drug or remedy and hence an ideal Ayurvedic physician will never prescribe the same drug or medicine to everyone but will consider, while treating the disease of any particular person, the physical constitution of that person and accordingly will make the necessary changes in the prescription, whereas modern medicine mainly aims at killing the germs or bacteria or the virus for destroying the infection.

Ayurveda defines the 'true' medicine saying "It is the correct medicine and the pure medicine which cures a particular disease and doesn't give rise to other side reactions or diseases and it is the impure drug which temporarily cures the disease or suppresses the symptoms and at the same time gives rise to other side reactions." The above principle evolved three thousand years ago is very clearly understandable today when many dangerous drugs and remedies cure and suppress the particular symptom in a miraculous way while they give rise to so many other side diseases. In fact, while giving a drug, if it gives rise to other disorders, there will be no end to the treatment as you will be curing the other diseases and giving rise at the same time to some new disorder due to fresh drug disaster. Sometimes we really feel that drugs are more dangerous than the disease itself. This sort of danger is never there with the real Ayurvedic treatment because the Ayurvedic physician is not trying to treat the disease but is trying to treat the patient as a whole.

The word "Ayur" is defined in Ayurveda as the contact of our body with the soul which results in the state of living. The time of this determines the span of life. Health has been defined as the natural state of all three aspects — body, mind and soul (Prasanna — Indriya — Mana — Atma). Now such a natural state when it comes in contact with unhappiness (Dukhasamyoga) is defined as disease. Ayurveda aims at both maintaining the physical, mental and spiritual health of a particular person and also showing the methods of prevention and treatment of disease when it occurs.

While doing so, the Ayurvedists have kept in view the health of the individual as well as the health of the masses. They have stated that when there is disorder in Jala (water), Vayu (wind), Desh (country) and Kala (time), then there are the ravages of epidemics and endemics resulting in a heavy death roll (Janapadodhwansa).

It is a mistake to believe that Ayurveda has been stagnant. After the Portuguese came to India and introduced the disease known as Syphilis (Firanga) in the 16th century A.D., Shri Bhava Mishra introduced arsenic and mercury in the treatment of the same, which means that according to time there have been admirable and effective additions of very good cures and remedies but they have been added keeping in mind the original principles of Ayurveda. Such additions have never changed the root belief of Ayurveda that our body is composed of five main basic factors, that these basic factors give rise to three somatic Doshas and the same Tridoshas maintain normal health, that with each particular person there is a typical physical constitution which differs with every individual and that the physician has to keep in mind the particular personality and not only treat the disease but treat the person as a whole.

HISTORICAL BACKGROUND

If we study the history of Ayurveda, we have to go back to the Vedic period as Ayurveda is believed to be Upa Veda or a branch of Atharva Veda. In the Vedas, which are four in number — Rig, Sama, Yajur and Atharva — we find ample references to the medicines, drugs, principles of treatment and descriptions of the different parts and organs of the human body; so the germ of Indian medicine no doubt lay in the Vedas. In fact, it is the Atharva Veda which deals in great detail with the medicines. We find therein not only the description of the drugs but the etiology of the diseases (the causes of the diseases) as well. The description of the several parts of the skeleton (which are very cautiously enumerated) strikingly resembles that given by Atreya in Charaka Samhita and Sushruta Samhita, two main texts of Ayurveda respectively. The latter have expressed their faith in Ayurveda as Upanga of Atharva Veda and Ayurveda as a branch of Veda, and generally the time of the Vedas is calculated as two thousand years before Christ. Thus Ayurveda has existed in India for a much longer period than any other system of medicine.

According to the description given in the ancient texts of the evolution of medicine, Brahma the creator of the Universe is supposed to have explained the system of Ayurveda to Prajapati Daksha in one lakh slokas in a thousand chapters. From Daksha two Ashwinikumars learned this art and science and from them Lord

Indra graduated in this system of medicine. From Indra this science of medicine descended to us in two different forms. It is mentioned in Charaka Samhita that once upon a time when this earth was afflicted with various kinds of diseases, the sages who were very keen to relieve men from their unhappiness of body and mind gathered near the Holy Himalayas and they deputed Bharadwaja to go to Indra to learn Ayurveda. On his return Bharadwaja imparted the knowledge of Ayurveda to Atreya. Atreya had six pupils, Agnivesha, Bhela, Jatukarna, Parasara, Harita and Ksharpani. Each of these pupils wrote a separate text on Ayurveda of which only two are available, one Agnivesha Samhita, which is known as Charaka, and the other Bhela Samhita. This branch is known as the branch of general medicine.

There is another mythological saying which reveals that Dhanwantri, the physician to the Gods, was sent by Indra to the earth to impart knowledge of medicine with special reference to surgery. Dhanwantri was also known by the names of Divodas and Kashiraja. Of his students Sushruta was most expert in the skill of surgery and he wrote a compendium on Ayurveda known as Sushruta Samhita. This was the branch of medicine chiefly concerned with surgical treatment though side by side it dealt with general medicine also. Later on there was a scholar named Vagbhata, who wrote an independent compendium known as Ashtanga Sangraha, which included a separate treatise on Ayurveda combining the skill of Charaka in medicine and the art of Sushruta in surgery; saying that both of these are useful to the physician and that it would be more convenient to the students of the science of medicine if they were both covered in a single treatise. Thereafter Vagbhata the Junior created Ashtanga Hridaya, which describes Ayurveda in the form of poetry. At that time there were no printing presses or printing equipment as is available today. So they used to write down in Tadpatras or Bhojpatras and then the teacher used to impart the knowledge to the students in the form of slokas and it became very easy to remember them when the principles were described in the form of poetry. The exact time of Atreya and Sushruta cannot be definitely fixed in the absence of necessary evidence but there is a general inference that Atreya belonged to the 6th or 7th century B.C. These periods are agreed to as there is material available for fixing the time of Lord Buddha, who was born in 557 B.C. and in the literature of that time there is reference to two great Indian Universities, one at Kasi and another at Takshasila in Banaras and Punjab respectively. This helps us to fix the time of Charaka and Sushruta.

The Senior Vagbhata has made in many places references to both Charaka and Sushruta and tried to harmonise the conflicting views of both and produced the most systematic work on Ayurveda.

It is believed that Ayurveda is composed of eight branches, viz., (1) Kaya (general medicine), (2) Shalya (major surgery), (3) Shalakya (ear, nose, throat, mouth and eye diseases), (4) Bhuta Vidhya (Psychiatrics), (5) Kaumara Bhritya (Paediatrics), (6) Agada (Toxicology), (7) Rasayana (Rejuvenation or Tonics) and (8) Vajikarana (Science of Aphrodisiacs). These eight branches have been described by Sushruta also and the name Ashtanga-Ayurveda is given to the whole system which comprises these eight branches. In the above-mentioned eight branches, the first viz. general medicine, is the chief branch and on which Atreya is believed to be the great authority; and on the other two—Shalya and Shalakya surgery—Sushruta is believed to be the highest authority.

This much historical background will be sufficient for the common reader to see in Ayurveda the oldest medical system and even if we ignore and omit the mythological elements, the existence of the oldest references are sufficient to show the ancient timing of the evolution of this Hindu system of medicine and accordingly no more proof is necessary.

FUNDAMENTALS

Now let us try to study the important fundamentals of Ayurveda. The general question being put to us very often is whether Ayurveda is scientific. In the modern period of science on its fast developing level it is quite natural that a science-minded person who believes himself scientific will necessarily raise this issue. So we don't find fault with the person who questions us in this way. To answer this problem we will have to put a simple counter question, viz. a person who has made references to science in several places and has written chapters on science, can we call such a person or such a text where such description is available, an unscientific one? Charaka has clearly described the six virtues to be present in a skilful physician, viz. Vidya (knowledge), Tarka (logic), Vigyana (science), Smriti (remembrance), Tatparata (adaptability) and Kriya (practical demonstration). These clearly indicate that Charaka's system was neither dogmatic nor divorced from empirical research. It was, in fact, a fine combination of rational hypotheses supported by actual application and experience. The same may be said of Sushruta, who has very pointedly remarked that one who is an expert only in the theories and one who does not know the practical applications or has no practical knowledge could never be praiseworthy and he should be taken to task before the king and sentenced to death. Here also we find that the great master in the art of surgery has shown the importance of practical knowledge over and above the theoretical mastery of the subject.

Ayurveda has in many places described Vigyana as the most essential and fundamental factor. According to Charaka, "The whole of suffering which clings to mind and body has ignorance for its basis and (conversely) all happiness is founded in clear scientific knowledge." In fact, the Ayurvedists were so humble that they have said "If you have to learn anything even from a cowherd or a shepherd, don't hesitate in acquiring such knowledge. Not only that, you should believe such a person as your tutor. There is no shame in doing so". Furthermore, they say "For a fool this whole world is full of enemies but for an intelligent man this whole Universe is full of experts and tutors". In this way Ayurveda has never been stagnant.

We have already explained what Ayurveda meant by a "pure" drug. This entire outlook has been maintained thoroughly well while giving the treatment of diseases in the various treatises of Ayurveda. We can very clearly see that we are today living at a time when the drugs available give rise to so many side reactions that while mentioning these drugs the separate treatment to cure their side reactions is also specially advocated!

The Tridoshas which we have referred to before as the maintaining factors of health become the causes of disease when they are not in the normal condition. The Ayurvedists have given various causes responsible for the imbalance of Doshas. They have kept in mind the age of the patient (the age is divided into three stages, childhood, youth and old age); then the country to which the patient belongs is also taken into consideration—the country is divided into three types, viz. Sadharana (equable), Anupa (moist), Jangala (where water, moisture and mountains are scarce); then comes the Deha-prakriti (physical constitution). Ayurvedists then attempt to determine by inspection, touch and interrogation which Dosha is predominant at the time the person is suffering. They have described seven Dhatus such as Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra. The first is Rasa Dhatu which as a result of the digestion of the food in the alimentary canal is assimilated and absorbed and then converted into Rakta (the blood) and then this blood from the heart goes to the various parts of the body and enriches them with nutritional properties and maintains life; hence it is called 'Jeewanam' by the progenitors of this science. It would be very interesting to note here that more than three thousand years ago a description was given regarding the circulation of Rakta from the heart to the body and it would be false to think that only 300 years ago the circulation of blood was discovered, as we are told nowadays.

Then comes the examination of the strength of the patient according to various types of appetite he has been having and furthermore the examination of Kala (time) according to seasons is made.

In this way, while examining the patient not merely the symptoms or the other points of disease are kept in mind but the entire outlook of the patient is sought for. Thus the physician used to come nearer to the patient and go in more detail and examine the whole patient, thereby treating each patient individually. Let us try to understand it in more detail :

Fever is considered as a symptom by modern science and it is part of various infections, while Ayurveda considers fever as a disease and according to various symptoms the different conditions are associated with the name of fever. Now, for the same particular condition there are different drugs mentioned for different constitutions. As stated before, the same drug is never prescribed to all, thinking that it is the only cure of the disease. Furthermore, there is a strict dietic injunction according to which particular varieties of food are prescribed which will not only soothe the patient but will be helpful in alleviating the symptoms. At the same time there is a restriction made that particular items of food must be entirely avoided. Not only that but such restrictions are laid down in practice also of the manner of life, clothes, ventilation etc., and the same have been scientifically explained. This gives us the idea that they were going into much detail for a particular person. Charaka has written at one place that " a clever physician should be never ashamed of not knowing the name of the disease in particular ". He says further that " it is never possible to have the name of each and every condition because so many symptoms and diseases may arise. The skilful and the clever physician must examine the predominance of the deranged Dosha and treat accordingly the condition and should not at all feel depressed because he doesn't know the name of the disease ".

While defining the treatment it is very interesting to note that the Ayurvedists have said that normal proportion and normal action of the Doshas is the state of happy mind and healthy body, while abnormality in the proportion and the action of the Doshas is the unhealthy body and unhappy mind. So when a patient is being treated it becomes necessary for the physician to decide which of the Doshas is in excess in the diseased condition and which of the remaining Doshas are in deficit. Accordingly his effort will be to bring down the Dosha in excess to the normal level and to enhance the deficient Doshas also to the normal level, thus maintaining the Tridoshas' equilibrium whereby the patient remains healthy.

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CHAPTER TWO

THE BASIC DIFFERENCES— A BIRD'S-EYE VIEW

THERE is a general belief that effective remedies and drugs are mentioned in plenty in Ayurveda and sometimes suggestions are made that if modern medicine incorporates these effective drugs in its pharmacopocia there will be no need to teach and practise Ayurveda separately. This idea is absolutely faulty and misleading for it does violence to its basic principles. Ayurveda has no doubt described many drugs which are effective even today and treats about 90 per cent of the rural population in India. This does not, however, mean that these drugs are only mentioned in reference to the names of the diseases. While treating the section on medicine, Ayurvedists have warned the physician saying pointedly "First examine the patient, then make an accurate diagnosis, only then comes the place of medicine. It is no good using an effective drug without an accurate diagnosis." This principle emphasises the idea that they were very keen on first making sure what the condition was and then treating the same. It will be interesting to note here that Ayurveda has given in detail two distinct methods of examination, one of the patient and the other of the disease. The description of the disease is available in the form of a collection of material on etiology (the causes), Purva Rupa (premonitory symptoms), Rupa (symptoms), Samprapti (pathology) and Upashaya (the use of drugs and diet and practices which are soothing to the patient) by which the physician can discover the deep-seated roots of the disease.

The writings dealing with the above mentioned five different aspects and collection of them were known by the name of "Nidana Panchaka" and this entire portion is meant to give directions for deciding the diagnosis of the disease. The word "Nidana" has a dual meaning. In one place it is used to mean the causes of the disease; in another place it has frequently been used to mean the diagnosis of a disease. This latter reference is in much more general use. As we have pointed out in the beginning, Ayurvedists say that it is not possible to have a complete nomenclature of diseases so that each and every case of illness is covered; hence a clever physician should never worry if he doesn't know the names of all the diseases. But they have emphasised that whatever may be the name of the disease a physician must make thorough investigations of the

diseased condition by examining the disease itself and by making a separate examination of the patient in detail. Thus we find that two separate methods have been advocated by the Ayurvedists for the investigation of Roga and Rogi (disease and the diseased). By skilfully combining these two investigations they come to a conclusion on the particular condition and according to predominance of the deranged Dosha they treat the disease as a whole. The reader will observe here that in doing so the physician has to treat each patient individually and it will never do to administer the same drug to all the patients suffering from a similar disease; instead each case will have to be decided on its merits.

The Ayurvedic principles of etiology are described in very great detail. The Ayurvedists were keen observers and they had developed the faculty of intuition. Accordingly they have described the causes of various diseases in a thorough manner. They have given importance to the general environment. Instead of the usual four seasons, they split the year into six, each of two months' duration. For each season they have prescribed special diet, clothing and rules for general healthy living. They have shown how in each season a particular Dosha is accumulated, how the other Dosha is in excess and how the remaining Dosha is decreased, thus giving a vivid picture of the variation of the Doshas in different seasons. The Ayurvedists have made special reference to the seasonal disorders. Thus the modern term "summer diarrhoea" does not seem strange to an Ayurvedic physician. On the contrary, the Ayurvedists have touched upon a very interesting aspect in regard to the seasons. They have said that a wise man should know that when one season is ending and another season is starting, the last eight days of the ending season and the first eight days of the starting season constitute the period of transition. During this period the wise man should gradually give up the rules and regulations of the normal diet and practices of the receding season and accept those of the approaching season because if we do not follow this method we may fall sick due to sudden change of the season. Such a seasonal disorder is described as a Prakrita Roga (natural disease) saying that by simple methods we can cure this ailment. In detail they have given the descriptions of such seasonal disorders like diarrhoea, cold, fever, etc. As we pointed out in the previous chapter, the Ayurvedists have attached great importance to the normal diet when dealing with personal hygiene. They have analysed the properties of each kind of food, describing every part of the diet separately. Thus they have covered the use of wheat, rice, millet (bajri), jowar, different vegetables, milk, butter-milk, curds, butter, various meats, mutton, varieties of fish and such other dietic items. The central idea in describing the diet in such detail is to show the use of diet by which

a particular Dosha is increased or decreased. So it will be evident from this that the Ayurvedic physician will always prescribe the diet for particular diseases keeping in mind the variation of Dosha in the diseased condition to increase or decrease the Dosha as may be required. This interesting portion is called "Pathya" and "Apathya", respectively meaning the "soothing diet" and "prohibited diet". Naturally half of the treatment is followed in this manner.

When dealing with physical disorders in terms of bacteria or germs or viruses, and giving the necessary antidotes, the general physician gets the triumphant feeling of killing and conquering the disease, he pays little attention to these normal and dietic practices. The patient who has a thermometer as the barometer of his health, seeing that the temperature is normal cares very little about the diet. Hence the use of abnormal diet continues, giving rise to a recurrence of the diseased condition or some new condition arising therefrom. This aspect of normal and abnormal diet according to the different physical constitutions, according to the different ages (child, youth, old age), according to the different seasons, according to the relative strength of the body, according to the different types of country, requires great skill and a keen observation and though they have given at the end of each and every chapter of description of disease a general list of the normal and abnormal diet, the Ayurvedic physician today has to be very careful while prescribing such diet but he can very easily use these suggestions according to modern trends, keeping in mind the variation of Doshas in the particular patient, the physical constitution, the season, age, etc.

STRENGTH OF THE PATIENT

The general line of treatment indicated in Ayurveda is to increase the strength and health of the patient. No treatment is recommended whereby the patient's strength is decreased. On the contrary, such a treatment is criticized while the one that increases the patient's strength is lauded. There are two basic types of treatment known as Shamana and Shodana, the former being a milder type of treatment and the latter meaning cleansing of the body by emetics or laxatives, purgatives, enema, etc. While recommending the Shodana treatment, which cures the disease permanently, the Ayurvedists have emphasised the need to ensure that the patient is strong and able to go through such treatment because if such treatment is given to a weak person the chances are that it will cause him more damage which is not the aim or goal of Ayurvedic treatment. They believed that the patient should become resistant to disease. The modern trend is to believe that germs or bacteria

are the cause of disease and these should be killed by the treatment. Unfortunately experience has shown that often the germ becomes more and more resistant to the antibiotic. As a result more and more broad-spectrum drugs are being invented to combat the different varieties of bacterial infections. But the germs are so clever that they are ultimately becoming resistant to all of them. When a germ can become resistant to such powerful drugs, why can't a human being become resistant to the disease? Instead of using such drugs to kill the germ, the Ayurvedic doctrine believes in so increasing the strength and health of the patient that he can overcome the infection very well. The Ayurvedic physician usually has to treat chronic conditions nowadays because so-called emergencies are treated by modern medicine. This is because some persons have the wrong notion that Ayurveda generally concerns itself with chronic cases and therefore in the beginning they start by visiting an Allopath. This is far from being true and the Ayurvedic physician can very competently deal with such cases; as a matter of fact, when the disease is not at all in a dangerous stage the use of anti-infectives and antibiotics and anti-allergics, sedatives and analgesics, etc. makes the treatment so complicated that instead of a life-saving treatment, it becomes a life-spoiling one.

This author has no prejudice at all against modern medicine but when we compare and contrast the different approaches we must definitely point out that the progress of ancient medicine was hampered by so many political factors and that no encouragement was given to this system. We are reminded of the period of King Ashoka, who stopped Ayurvedic surgery because at that time, in the absence of good anaesthetics, the patient suffered great difficulty and pain while being operated upon. This type of treatment which tortured the patient was also considered himsa (cruelty) and it is on record that the palms and hands of such expert ancient surgeons who were performing operations skilfully as, for example in cases of hernia, hydrocele, piles, etc., were cut off and surgery was buried. It was then that the art found its way to the West, where with the subsequent invention of good anaesthetics it developed very fast. Modern surgery has thus no doubt made wonderful progress but it should not be forgotten that Sushruta was the father of modern surgery and in India at the beginning of the Christian era surgery was being practised with great skill. Many methods of operations as are followed today are described in the ancient texts. They were also not altogether ignorant of the idea of the use of antiseptics and anaesthetics as they used to administer some narcotics and tranquillizers to the patient to reduce pain. Further, there is reference available on nasal plastic surgery (artificial nose) in Sushruta and the same method is followed by modern plastic surgeons also.

Pundit Shiv Sharma, a great authority on Ayurveda, has got manufactured 125 instruments of the type described in Sushruta Samhita and many of them resemble the modern instruments not only in shape and action but in name as well. Simha-mukha yantra (lion forceps) is an example. We can enumerate many such examples but suffice it to say that there is ample proof of the practice of surgery available in Ayurveda.

However, it must be admitted that the progress made in anaesthesia today is a considerable contribution and if we make use of it now, the principles of Ayurvedic surgery are not at all altered.

Even obstetrics attracted the attention of the ancient masters. The rules and regulations to be observed after normal delivery are stated in the texts. If they are scrupulously followed, the health of the woman who has delivered a child will become normal more speedily, compared to what we see today in the Nursing or Maternity Homes.

Thus it will be seen that Ayurveda did not only treat the disease of the body medicinally but also concerned itself with surgery, midwifery, ear, nose, throat, eye and mouth troubles, etc. Many chapters were devoted to the diseases of the ear, eye, nose, throat and mouth and the whole of this section is known as Shalakyā (surgery above the clavicle). The Ayurvedists have given the medical as well as surgical treatment for the troubles of the ear, nose, eye and throat. Sushruta has described the various operations on eyes in great detail and given correctly the methods for operating on the cataract.

Our idea in giving this information is to make the common reader conversant with all that is contained in Ayurveda. In the past such efforts in vernacular languages have been misunderstood as giving an exaggerated impression that once upon a time Ayurveda also was comprehensive. When we study and try to emphasise a particular branch of knowledge as a science we have to look at it from all aspects and angles. We cannot stop ourselves from giving the general information about surgery and midwifery contained in Ayurveda. The ancient texts contain references to spermatozoon and ovum, and descriptions have been given of the menstrual cycle, of the normal hygiene for a woman while in menses, of the growth of foetus month by month, of the hygiene to be observed by a pregnant woman for the entire period of conception, of the disorders during pregnancy and after labour and of the treatment for these. The anatomy of the genital organs is given and their physiology according to their point of view is also explained. Of course, here also the same approach is maintained and the Tridosha imbalance is believed to be the origin of disorder, and the restoration of the

Tridosha equilibrium is the main guiding principle of treatment, because the Ayurvedists think that there is no ailment in this world which is not caused by this imbalance.

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CHAPTER THREE

THEORY OF FIVE BASIC FACTORS

THE PURUSHA or the human being is the field of treatment and, as already pointed out, is composed of five basic factors known as earth, water, fire, ether and air. Some authorities call these five factors "five proto-basic factors"; some even call them "elements" and some know them by the word "components". To us, the words "basic factors" seem to be most appropriate. Moreover, there are various definitions of Purusha given according to the different systems of thinking. It is believed according to Sankhya Mata that Purusha is composed of 25 elements. Some believe it to be composed of twenty-four. According to this view Prakriti is the origin of everything. A chart has been given at the end of this chapter to explain the different definitions of Purusha but here we would attach importance to the definition given by Ayurvedists namely that Purusha is a compound of five basic factors and the soul, and the whole is the field of treatment. Let us explain this Panchabhautika theory.

The relation of Doshas to Mahabhutas is very clear: Vayu is believed to be resulting from air (according to another opinion, air + ether), Pitta from fire and water and Kapha from water and earth.

The seven body-constituents also result from these basic factors. Rasa Dhatu has water as the predominant basic factor, Rakta has fire as the predominant basic factor, Mamsa has earth as the predominant basic factor, Flesh has water and earth as the predominant basic factors, Asthi has earth and air as the predominant basic factors, Marrow (Majja) and Semen (Shukra) have water as the predominant basic factor; urine has water and fire, while faeces has earth, perspiration and breast-milk have water, and menstrual blood has fire, as the chief basic factors.

It should be remembered that we have given above the chief or dominant basic factors responsible but the remaining basic factors are also there in lesser proportions.

The organs of sense otherwise known as Gnanendriyas are also Panchabhautika. The eye has predominance of fire, ear of ether, nose of earth, tongue of water and skin of vayu.

THE ACTIONS OF BASIC FACTORS IN THE BODY

EARTH (prithivi) as the basic factor has the action of smell (the work of nose), heaviness and solidity. It is bulky, dense, heavy,

hard, inactive, motionless, rough, firm, slightly astringent, mostly sweet and has a natural tendency to fall down. Its main function is to make the body steady, strong, heavy and hard.

WATER (Jala) — It is dense, heavy, soft, inactive, flowing, moist, viscid, cold, slimy, taste predominant; slightly astringent, sour and salty, mostly sweet. Its function is to make the body viscid, moist, compact, and to make the liquid parts of the body flow.

FIRE (Agni) — It is penetrative, light, active, rough, dry, hot, clear, colour predominant, tastes: slightly sour and salty, mostly pungent. It has a natural tendency to go upwards. Its functions are combustion, digestion, to keep up the heat of the body, to manifest the parts, and to impart glow to the body.

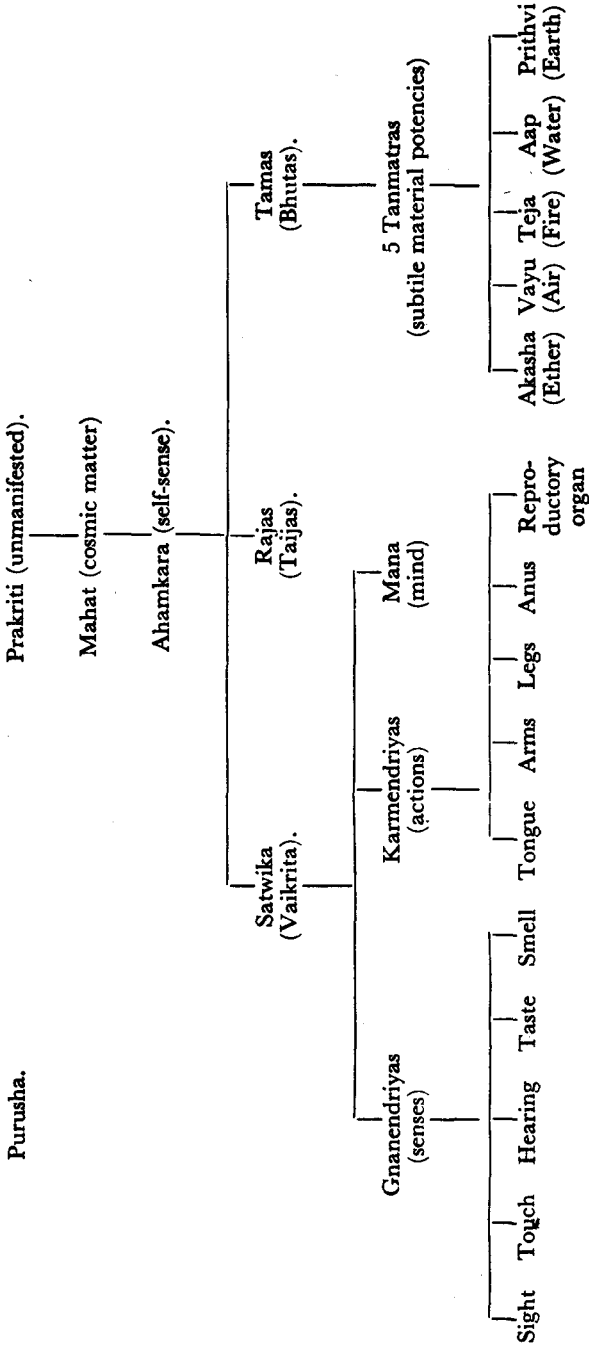
AIR (Vayu) — It is penetrative, light, rough, dry, cold, transparent, touch predominant, tastes: slightly bitter, mostly astringent. Its function is to make the body non-viscid, dry and light.

ETHER (Akasha) — It is penetrative, light, soft, smooth, transparent, sound predominant, taste: unmanifested. It has instantaneous effect like poison and its action is to make the body soft, porous and light.

These are the properties and functions of the five Mahabhutas or the five basic factors described in Ayurveda. This is what Charaka says regarding these Bhutas: "Those parts of the body which are specially bulky, motionless, solid, heavy, rough and hard — such as the nails, bones, teeth, muscles, skin, faeces, hairs, ligaments etc. — they are PARTHIVA; the smell and the sense of smell are also EARTHY. Those parts of the body which are liquid, inactive, viscid, soft, slimy and which flow — such as chyle, blood, fat, lymph, Kapha, Pitta, urine, sweat etc. — are APYA; the taste and the sense of taste also are WATERY. The heat of Pitta and the radiance of the body are Agneya; the colour and the sense of sight are also fiery. Exhalation, inhalation, the opening and closing of the eye-lids, contraction, expansion, movement, incitement, sustenance etc. are VAYAVIYA i.e. due to Vayu (Vayu being invisible its presence is inferred from these actions and qualities); touch and the sense of touch also are AIRY. The pores and channels of the body are ANTA-RIKA; sound and the sense of hearing also are ETHEREAL. The atoms constituting the body, being infinite in number, extremely minute in size and being beyond the perception of the senses cannot be counted."

Charaka has pointed out the primary qualities of the Bhutas. He says that "the characteristic of earth is roughness, that of water is liquidity, of air expansion, of fire heat, and that of ether non-resistance. All these qualities are perceived through the sense of touch." (Car. Sut. Ch. 4St. 1.27).

(CHART ACCORDING TO SAMKHYA OPINION SHOWING ORDER OF COSMIC EVOLUTION)



Shri Dhirendranath Ray, the author of "The Principles of Tridosha in Ayurveda" says as follows :—

"The Bhuta has been translated as 'element'. This is misleading. Bhutas are not elements and Parmanus are not atoms or molecules in the modern sense of the terms. Modern writers laugh at the idea of calling earth, fire, water, air and ether 'elements' ignoring the fact that Bhuta is not an element in the chemical sense of a substance that cannot be further analysed. On referring to Vaishesika it will be clear that what is ordinarily known as 'earth' is not regarded by Vaishesika to be an element in the technical sense; if it were so regarded, then alone could the Vaishesika view be stigmatised as primitive and unscientific. The touch of earth in its pure state is said to be neither hot nor cold, so also the touch of air, and when asked why the ordinary earth and ordinary air are found to be very far from 'neither hot nor cold', the Vaishesika explains that this is due to earth and air being mixed up with the particles of fire or water which make them hot or cold. From this it is clear that what is regarded as element is not the earth etc. as we know and see them but as they exist in their pristine and pure state, unmixed with any other substances."

Just as an atom, a chemical element, has no free independent existence so also the five Bhutas in their pure state are never found in nature and what we find are the compounds of the five Bhutas, mixed together in different proportions, that is to say, all gross matter is pentabhutas.

Thus we have described above the actions and properties of the five basic factors and their functions in the body.

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ANATOMY IN AYURVEDA

SOME modern writers who admire certain aspects of Ayurveda harshly criticise it on the ground that its knowledge of anatomy is not vast. This is not correct. The truth is that our ancients had a vast knowledge of the subject but in the absence of printing equipment and facilities as are available today, the Ayurvedists have conveyed their knowledge in a concise form.

The whole Ayurvedic anatomy with its minute details cannot be described in a book of this nature. Nevertheless, we shall briefly deal with the subject here (those who would like to go into greater details may please refer to "Ayurvediyam Sarira" by G. Y. Purohit, B.A., A.V.V., with English translation). In the last century, Kaviraja Gana Nath Sen wrote a volume on anatomy known as "Pratyaksha Sharira" which contains complete description of anatomy in minutest details. It is written in Sanskrit. It contains illustrations. Its translations in other vernacular languages are also available. It is prescribed as a text-book of Anatomy and its study along with Charaka Samhita, Sushruta Samhita and Vagbhata gives a comprehensive knowledge of the human body.

The Ayurvedic definition of the word 'Sharira' (body) is "that which gradually decays" (Charaka Sut. 1). 'Sharira is the sum total of the products of the five elements (Charaka Sharira 1). Sushruta says "Purusha is a combination of these five elements and of Jivatma; He is responsible for all the activities and is the one to be treated, when the digressions from normal supervene."

To be able to understand the Ayurvedic principles, it is necessary to refer to the fundamental philosophy which underlies it since in Indian thought the various branches of knowledge hang together and human and natural processes have a harmony between them. There are two basic concepts — Prakriti and Purusha. "Prakriti, the latent supreme nature, is the progenitor of all created things. Prakriti is self-begotten and connotes the three fundamental or primary virtues of Sattva, Rajas and Tamas. She is imaged in the eight-fold categories of Avyakta (unmanifest), Mahat (intellection), Ahamkara (egoism) and the five Tanmatras or elementals (proper sensibles) and is the sole and primary factor in working out the evolution of the Universe.

“Out of the latest unmanifest or original nature (impregnated by the atoms or elemental units of consciousness or Purushas) intellection or Mahat has been evolved and out of Mahat, egoism. This Mahat or intellection should likewise be considered as partaking of the three fundamental attributes (Sattva, Rajas and Tamas) of the latent or original nature. Ahamkara or egoism in its turn may be grouped under three subheads as the Vaikarika (or Sattvika), Tajasa (operative or Rajasika) and Bhutadi (illusive or Tamasika).

“The eleven organs of cognition, communication or sense perception have emanated from the cooperation of the aforesaid Vaikarika Ahamkara with the Tajasa or Rajasa. They are the ears, skin, eyes, tongue, nose, speech, hands, genitals, anus, feet and the mind (Mana). Of these organs the first five are sense organs (Gnanendriyas), the next five being operative (karma-indriya). The Mind partakes of the character of both the sensory and operative organs alike.

“The five Tanmatras or elementals (or the five proper sensibles of hearing, touch, sight, taste and smell) characterised by the Nescience etc. have been evolved out of the Bhutadi etc. (or Tamasa Ahamkar) concerted with the Tajasa Ahamkara through the instrumentality of the Vaikarikam. The gross or perceptible modifications of these five Tanmatras are sound, touch, taste, sight and smell. From the combination of the aforesaid five Tanmatras (Bhutadi) taken one at a time have successfully emanated the five gross matters of space such as earth (solid), water (fluid), fire (heat), ether and air. These twentyfour categories together form what is technically known as the twentyfour elements (Tatvvas).

“Hearing, touch, sight, taste and smell respectively form the subjects of the five sensory organs of man, whereas the faculty of speech, handling, pleasure, ejections or evacuation, locomotion successively belong to the remaining five operative ones. The original nature (Avyakta), Mahat (intellection), egoism (Ahamkara), the five sensibles (Tanmatras) and the five gross material principles in their nascent stage in evolution form what is included within the eight categories of Nature (Prakriti), the remaining sixteen categories being her modifications (Vikara). The objects of intellection (Mahat) and egoism (Ahamkara) as well as of the sense organs of knowledge and actions are the material principles (Adibhautika) though they are spiritual in themselves and in their nature.

“The tutelary god of intellection (Buddhi) is Brahma. The god Ishvara is the presiding deity of the sense of egoism; the moon god is that of the mind, the quarters of the heaven, of the ears; the wind god is that of the skin; the sun is that of the eyes; the water is that of the taste; the earth is that of the smell; the fire is that of speech,

Mitra is that of the anus and Prajapati is that of the organs of generations.

“All the aforesaid twentyfour categories or elementals are devoid of consciousness. Similarly the modifications of the primal cause of Prakriti such as the Mahat etc. are all bereft of consciousness inasmuch as the cause itself, the Avyakta or the original nature is devoid of it. The Purusha or the self-conscious subjectivity enters into the primal cause (Mula-Prakriti or original Nature) and its necessary effect (the evolved-out phenomena) and imbuse them with his own essence or self-consciousness. The preceptors and holy sages explain this position by an analogy that as the milk in the breast of a mother, though unconscious in itself, originates and flows out for the growth and sustenance of her child (as the semen in the organism of an adult male though devoid of consciousness, flows out during an act of sexual intercourse); so these twenty-four primary material principles (elementals), though unconscious in themselves, tend to contribute towards the making of the self-conscious self or the universal individul (the aggregate of limited or conditional selves) for the purpose of working out his final liberation or emancipation, i.e. attainment of the stage of pure consciousness or perfect knowledge.

“Both the Purusha and Prakriti are eternal realities, both of them are unmanifest, disembodied, without a beginning or origin, eternal, without a second, all-pervading and omnipresent.

“Of the Purusha and the Prakriti, only the latter is non-conscious and possesses the three fundamental qualities of Sattva, Rajas and Tamas. Prakriti performs the function of the seed or in other words she lies inherent as the seed or the primary cause in the latter phenomenal evolution of the Mahat etc. and contributes the material element in the conception, development and birth of the primordial cosmic matter (phenomenal universe) facundated by the Purusha (self-conscious subjectivity) in its different stages of evolution. These stages are called Mahat, Ahamkara etc. and Prakriti is not indifferent, as the Purusha is to the pleasure and misery of life. But the Purushas devoid of the threefold virtues of Sattav etc. are non-participating hence non-producing and bereft of the seed-attributes, lying inherent in all, as the primary cause of evolution. They are more like witnesses to the joys and miseries of life, and do not participate in their enjoyment though imprisoned in the human organism.” (Sushruta Samhita: Eng. Tran: by Kaviraja A. L. Bhisagratna).

The body is divided into six major parts, two upper and two lower extremities, the trunk, the head and the neck. For a thorough knowledge about the body, Ayurvedists advocated dissection, besides

the study of anatomical texts. Charaka in *Vimana Sthana* says: "One who does not see the inside of the body of the patient by the light of knowledge and intelligence can never be able to treat him". According to Sushruta "A surgeon who desires to obtain thorough knowledge of the body, must dissect a dead body and see each and every structure and organ in it. Whatever is actually seen and observed during dissection and what is theoretically learnt from books on anatomy should supplement each other. Both methods tend to the growth of true knowledge".

The method of dissection is discussed thus: "This is a process of maceration. Secure first a dead body with all limbs intact, where death is not due to poison, where there has been no illness of long duration and the body is not of a very old person." Then, giving importance to every detail: "every external and internal part and also the organs should thus be minutely examined and observed" and "thus the physician who knows the body with all its organs thoroughly cannot be confused in handling a disease".

Ayurvedic anatomy contains embryology, osteology, arthrology, myology vascular systems, splanchnology etc. in detail. To get a picture of the body as a whole, they maintained that:

There are three Doshas — Vata, Pitta and Kapha.

There are seven Dhatus — Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra.

There are three Malas — urine, faeces and sweat.

There are twelve Pranas or vital substances — Agni, Soma, Vayu, Sattva, Rajas, Tamas, the five senses (Gnanendriyas) and the individual soul (Atma).

These maintain and govern all the parts of the body.

Dhatus are known as body constituents. There are Upadhatus or sub-body constituents derived from Dhatus. They are as follows: (1) From Rasa Dhatu the Stanya or breast milk and Artava or menstrual fluid; both these are present in women. Sushruta has declared: "From the age of 12 onwards Artava starts and flows every month up to the age of fifty years, except during the period of conception, child feeding, old age and some illness." (2) From Rakta (body nutrient), kandras and siras; (3) From Mamsa, the vasa and cutis; (4) From Meda, snayus; (5) From Asthi, teeth; (6) From Majja, kesha (hairs) and (7) From Shukra, Ojas.

EMBRYOLOGY

It is said that the mental characteristics of the woman who conceives have a bearing on the child. The child will resemble the

first man she sees on the fourth day of menstruation. Therefore she should look at her husband before the day starts. She should have a clear picture before her mind of the child she is going to give birth to. She should keep her mind engaged on it. She should behave according to her ideal of the would-be child. Ayurvedists maintain that "women who have got pure and clean habits and manners and those who are religious and worship sacred Brahmans give birth to children of extraordinary virtue, and those who do not do so, give birth to children devoid of these virtues."

The seeds in a man and woman mature at the age of 25 and 16 respectively. A physician should know this well. If parents are below this age, the foetus does not develop, dies early or becomes deformed. A healthy foetus comes into existence by union with a man of powerful seed by a woman with a pure vagina, uterus and menses. Semen has the quality of Jalamahabhuta and the Artava is red and like agni, though the remaining four elements are present in each of them in minute degrees.

Sushruta says, "Just as ghee melts when placed on fire, similarly the female seed is set forth in coitus with man. Vayu releases during copulation the Tejas energy of the body and this uniting with Vayu ejects semen. This enters the yoni (vagina) and combines with Artava". The word 'yoni' in Ayurveda is not merely used for Vagina but includes the external orifices of the vagina, cervix, uterus, fallopian tubes and ovaries. The embryo which develops from this union of Shukra and Shonita is thus the combination of Soma and Agni and lodges in the uterus. It is only when the Jiva (Atma) descends in this combination of Shukra and Artava that the foetus begins to form.

There is a theory about the sex of a child resulting from successful conception — during the coitus when semen exceeds the female fluid Artava in quality, the issue is male; when Artava is more powerful, the issue is female; the issue is impotent when the qualities of both are equally balanced. A strong sperm produces a male child by vanquishing the female seed; if the sperm is weak the result is a female child. Another theory, to which we have referred previously, is that coitus on even nights produces a male child; on odd nights, a female child.

When foetus is actively energetic, Vayu (air) forms further segmentation. Agni (fire) performs the digestive functions, Jala (water) moistens the whole, Prithvi (the earthly principle) strengthens it and Akasa (space) develops the same. The embryo is styled 'sharira' only when it is thus developed with hands, feet, tongue, nose, ears, buttocks and other organs. When Vayu divides the seed itself into two, a 'twin' results.

Agni-Dhatu is said to be the cause of the nature of complexion of the Garbha.

The early signs of pregnancy have been mentioned as fatigue, languor, thirst, a feeling of weakness in the thighs and throbbing sensation in the genetic passage, by the drawing in of semen and the female fluid. When pregnancy is confirmed, the signs are: the nipples of the breasts become dark in colour; the breasts develop and grow larger in size and have a milky secretion; the hairs stand out on the body; the eye-lids droop; there is a feeling of movement in the uterus from the fourth month onwards, itching or burning sensation due to Doshas formed by the presence of Garbha reaching the heart of the mother; Striae Gravidarum (kikvisa) also results due to the same cause.

The symptoms are: vomiting without a cause, a dislike for fragrance, watering of the mouth and lassitude, and stoppage of menstruation.

The hygiene to be observed by a pregnant woman has been set out in detail.

The development of the foetus month by month has been described by Sushruta and Charaka as follows:

In the first month the embryo is called 'Kalala' (soft small mass).

In the second month the five elements fuse together by the action of Tridoshas and it becomes more solid, the mass becomes a compact ball if the child is to be a male but is moulded like a Pesi if it is to be a female, and of irregular shape if it is to be sexless.

In the third month five bud-like protrusions representing the rudimentary head and limbs are formed. We can see the other major and subsidiary parts of the body. The 11 indriyas also appear in this month.

In the fourth month all the organs are more clear, the heart is now ready to perform the vital function and the foetus therefore needs various objects which express themselves as longings of the pregnant woman. As the pregnant woman has now two hearts, her desires should be satisfied as far as possible. If these desires are fulfilled, the child becomes brave and strong and lives long enough. The child possesses a body form and behaviour similar to the subject for which the pregnant woman had strong desires or longings.

In the fifth month further development of mental power takes place. According to Charaka only the flesh and muscular parts grow.

In the sixth month, as Charaka puts it "there is accumulation of strength, and complexion is imparted to the skin". According to

Sushruta, during this month “feelings are evident and the distinguishing of pain and pleasure is possible ”

In the seventh month further development occurs in the primary and secondary organs; the foetus is now bestowed with complete physical structures.

In the eighth month, Ojas, the essence of Shukra, which begins to take a firm hold of the body is itself still unstable. A child born in the eighth month does not usually survive because of want of Ojas; some attribute this to the menace of evil spirits also. Remedial measures like an oblation of meat and rice have been prescribed.

Usually in the ninth or tenth month or sometimes in the eleventh, and very rarely in the twelfth, a live child may be born. From the eighth onwards delivery can take place any day; these are the proper days for birth. Abnormalities may cause delay.

A peep into the intra-uterine life would be interesting. Sushruta says: “the excreta are very little in the foetus and Vayu finds no entrance to its colon; it does not therefore defecate nor urinate nor pass wind when in the womb; the mouth of the foetus being covered by Jarayu and the throat by mucus, the passages of Vayu are closed and the child does not breathe or cry in the foetal life”. The child lies in the uterus with all its body parts bent, the head directed downwards and the face to the back of the mother. At the time of delivery therefore it naturally descends head-foremost. This position enables it to occupy the least space in the uterus. (Ayurvediya Śārira G. V. Purohita).

The nutrition of the foetus has been described in minute detail both by Charaka and Sushruta. There are different opinions about the order of development but the opinion of Dhanvantari is considered as final.

Various factors contribute in the formation of the foetus viz. the father, the mother, the nutrient fluid, the vital force, the mental faculty and the assimilation. Apparently the father contributes firm parts like the hair, beard, the down on the body, the bones, the nails, the teeth, blood-vessels, muscles, dhamani, semen and similar objects. The maternal contribution consists of soft parts like flesh, blood, fat, marrow, the brain, heart, liver, spleen, intestines and the anus. The nutrient fluid (Rasa) produces compactness, strength of body, complexion, sustenance and destruction. The vital force produces acuteness of the senses, perception, discernment, longevity, power to bear pain and enjoy pleasure. Assimilatory factors produce vigour, health, strength, colour of the skin, and the intellect. The five chief elements or basic factors also play their role.

The seven layers of the skin are described with their names and readers will note that the Ayurvedists arrived at these conclusions without the help of the modern microscope.

Certain signs have been suggested as aids to the determination of the sex of the foetus. When the mother gets secretion first in the right breast, has heaviness of right eye, walks with right foot forward, desires articles bearing a masculine name, enjoys and sees lotuses of the best type or other articles with a masculine name and a pleasing appearance, then a male child may be anticipated. The child can be a female if the opposite conditions prevail, and twins may be present when the middle part of the abdomen of the woman sinks inwards like a saucer.

Again, rules have been laid down as to what a lady should do during the period of menstruation, during pregnancy and after delivery. The construction of maternity homes with necessary equipments, medicines, drugs, instruments, apparatus — all have been given in detail. The house for the purpose is known as 'Sutikagara', the word 'Sutika' meaning the lady who has given birth to a child and 'Agara' meaning the home, i.e. maternity home.

Dietary restrictions as well as rules and regulations are given for a woman before and after delivery.

It will be clear from the above references that our ancient physicians were masters also in the subjects of obstetrics and gynaecology. In Sharira Sthana, the portion describing anatomy, Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya give general and detailed information regarding these but credit must be given to Kashyapa who composed Kashyapa Samhita pertaining only to Kaumara Bhritya which deals with obstetrics, gynaecology and paediatrics, giving more information on paediatrics i.e. normal health and diseases of children, with proper remedial measures.

The art and science of reproduction is discussed in great detail in Ayurveda and a knowledge of these should prove of immense interest and value to every man and woman.

Dealing with semen, Sushruta says "A man is incapable of begetting children whose semen affected by the aggravated Vayu, Pitta and Kapha, emits a cadaverous smell, or has acquired a clotted or shreddy character or which looks like putrid pus, or has become thin, or smells like urine etc. Further, giving the symptoms of deranged semen, he says "semen deranged by Vayu acquires a reddish black colour and gives rise to pain which characterises the Vayu at the time of being ejaculated".

Semen deranged by Pitta "gets a yellowish or bluish colour, produces specific pain and burning and sucking at the time of emission."

Semen deranged by the action of Kapha "has white colour and produces pain or itching sensation peculiar to deranged Kapha at the time of its outflow."

Semen spoiled by blood is tinged with a bloody hue and produces all kinds of pain peculiar to the deranged Rakta. The semen smells like a putrid corpse and is emitted in large quantities.

The first three types of seminal derangements or defects should be corrected by an intelligent physician with application of medicated oil etc., diaphoretic measures or urethral injections. A medicated ghee prepared with a decoction and Kalka of Dhataki flowers, Khadira and Dadima and Arjuna should be given to drink to a man whose semen emits a cadaverous smell. Similarly there are many recipes for other types of derangement of semen.

The Artava or menstrual fluid is also deranged by Vayu, Pitta and Kapha and symptoms for each of them have been given separately. Then the treatment of deranged Artava or menstrual fluid is also given with various recipes.

Then giving the symptoms of the pure Shukra and Shonita it is said "semen which is transparent like crystal, fluid, glossy, sweet and emits the smell of honey; or like oil or ghee in appearance according to others, should be considered as healthy." "The catamenial blood (Artava) which is red like the blood of a hare, or the washings of shellac and leaves no stains on clothes (which may be washed off by simply soaking them in water) should be considered as healthy."

After these descriptions of Shukra and Artava, rules of conduct for husbands and wives have been discussed in detail. We quote a few of them: "A husband wishing to beget a son by his wife, should not visit her bed for a month (before the day of the next flow). Then on the even days of her uncleanness he should anoint or lubricate his body with ghee, should partake of a food in the afternoon or evening composed of boiled sali rice, milk and clarified butter and then visit the bed of his wife. The wife also, in her turn, should observe a similar vow of sexual abstinence for a month before that day on which she should anoint or lubricate her body with oil, partake of food largely composed of oil and Masha pulse, and then meet her husband at night. The husband then having uttered the appropriate Veda Mantras and having awakened confidence in the wife, should go unto her on the sixth, eighth, tenth or twelfth night of her menses for the progeneration of a male child."

Further it is said that a visit to the wife on any of these nights leads to the continual increase of wealth, progeny and the duration of the husband's life. On the other hand, a visit to one's wife on the fifth, seventh, ninth or eleventh day of her flow leads to the conception of a female child. The thirteenth and the remaining days till the next course are condemned as regards intercourse.

“ A visit to the wife on the first day of her monthly course tends to shorten one's life and a child born of the act dies immediately after its delivery. Similar bad results are obtained by a visit on the second or third day. A child which is the fruit of a visit on the fourth day lives long, will be well developed and remain in the full vigour of health. The semen cast in the womb of a woman during the continuance of her monthly flow does not become fruitful because it is carried back and flows out in the same manner as a thing thrown into a stream does not go against but is carried away with the current. Hence a husband should forswear the company of his wife during the first three days of her uncleanness. The husband should not visit his wife within the month after the twelfth day of her menses. ”

After the impregnation on any of these nights, three or four drops (of the expressed juice) of any of the following drugs such as Lakshmana or Sahadevi mixed with milk should be poured into the right nostril of the enceinte for the conception of a male child and care should be taken that she does not spit it away. This is called 'Pumsavana' Sanskara.

A coordination of the four factors of menstrual period (Ritu), healthy womb (Kshetra), nutrient liquid (Ambu) and healthy semen (Bija) and the proper observance of the rules are necessary for the conception and development of a healthy child just as the proper season, good soil, water and vigorous seeds together with proper care, help the germination of strong and undiseased sprouts. A child which is the fruit of such conception is destined to be beautiful, of vigorous health, generous, long-lived, virtuous, attached to the good of its parents and capable of discharging its filial obligations.

Varieties of impotency are also described which we have dealt with in the chapter on Rasayana and Vajikarana.

It may look strange to a modern reader that subjects like conception etc. are dealt with under Anatomy in Ayurveda but the Ayurvedic student is well aware that Ayurveda deals with every matter from beginning to end, and it would not be inappropriate to mention here that the Rishta and Arishta, the bad signs and omens suggesting the end of a life also have been described in Sharira Sthana.

ASTHI — OSTEOLOGY

Asthi (bone), the hardest structure of the human body, is the main support of the body. Vayu is present in the bones and the Malas of bones are the nails and hairs, as suggested by Vagbhata. The human body stands firm and straight on account of the bones. The bones neither waste nor crumble like the flesh or skin. The fleshy

organs are fastened to the bone by means of big Siras and muscular bands and it is because of this that the organs are well protected and do not slip away.

Asthi is produced from Meda and Prithvi Mahabhuta is in excess in the bones. Meda creates a compact mass of Prithvi, Agni and Vayu by its own heat and forms the bone. Bone is a paternal part in the foetus.

Vayu creates sponginess in the internal part of bones which are filled with Sneha obtained from Meda. This is known as Majja, the marrow.

There are varieties of bones. They are Kapala — flat bones, Ruchaka — lustrous; Taruna — cartilaginous; Valaya — curved; Nalaka — long and tubular. These five varieties are described in the texts with examples.

In Vedic times the number of bones fixed was 360 and Charaka adhered to this, while Sushruta puts it at 300. The modern count is 203. The disparity is due to some structures like cartilages, teeth etc. being included or not taken into account. Otherwise the calculation is correct.

SANDHI (JOINTS) — ARTHROLOGY

The joint is a structure where the epiphysical ends (Asthi-Parva) are kept together by means of ligaments. The joints are deep and firmly situated in a physique which possesses all ideal structures because the muscles are well developed.

Lubrication of the joint is effected by Shleshaka Kapha which resides in the joints only. When Slesaka Kapha is deficient there is a cracking sound due to friction of the bony ends.

Shleshma-Dhara-Kala is found in the joints of all creatures. This resembles the oil in the axle of a wheel which makes the wheel turn smoothly.

Kapha supports the joints and when Kapha is on the wane the joints become loose. When Mamsa is deficient there is pain present in the joints.

Majjavaha-srota has its seat in the bones and the joints. Classification of joints according to structure and movement is made in the texts.

Joints are of two kinds, Sthira (immovable or stable) and Chastavantha (movable).

Diseases of the joints are fully described. Vayu in the bones when aggravated enters the joints and causes general weakness and much pain in the thighs, bones and joints. Swelling occurs, which can be compared to a bag filled with air, and causes pain on flexion

and extension. Diseases like rheumatism (Sandhivata) and gout (vatarakta) are located in the joints.

SNAYUS

Snayus are considered to form the muscular system. Fleishy organs are tied to bone by Snayu and Sira and because of this protection the organs are not crushed, nor are they displaced. Snayus are formed from Meda whose oiliness feeds the foetus through to Sira. That is why the structure of the Snayu is harder than Sira.

Snayus are 900 in number, of which 600 are in the four extremities, 230 in the trunk and 70 in the neck alone. The Snayus are ring-like, large and fat, round and having long tendons. It must be remembered that the joints are held together by Snayus (tendons and muscles).

Vayu causes all the movements in the Snayus. Injuries to Snayus and prognosis of such injuries are mentioned in the texts.

PESHI

Vayu enters the fleshy mass and separates the Peshi. Peshis enclose all the Siras, the Snayus, bones and joints. These four thus become stronger and stouter. The texts give the names of different types of Peshis, thick or thin, firm or hard, large or short, etc.

There are 500 Pesis in the male (400 in the extremities, 66 in the trunk, 34 in parts of neck and above). Females have additional 40 Pesis — 10 or more in the two breasts, 4 in the vagina, 3 at the mouth of uterus and 3 at the place where Shukra and Artava enter inside. In the males the Pesi of the scrotum and penis are on the outer side, while the corresponding ones in the female lie in the interior and cover the ovaries.

SROTAS (CHANNELS)

Srotas are of two types — Bahir-Mukha i.e. those that have their external orifices; and Yoga-vaha. •

Bahir-mukhas are nine in number — the two ears, the two eyes, the mouth, the two nostrils, the anus and the urethra. The females, in addition, have two breasts and the genetic passage.

Srotas directly carry the Dhatus which reach their final stage of conversion. All the substances in the body which are produced or destroyed and separated by elimination, undergo actions through these Srotas.

Srota is the total space which extends in the body from the origin and which carries or produces something. Srotas are thus distinct from Siras or Dhamanies. Srotas are so named because there is flowing, trickling or oozing of a secretion through them which

nourishes the seven Dhatus. According to some experts Purusha is nothing but a combination of Srotas. Their colour is the same as that of the Dhatu they produce. Some are round, some large and some minute. They all, however, form a net-work.

Srotas are innumerable but some consider them to be of a definite number and divide them under 13 heads. According to Sushruta there are only 11 Srotas. These 11 Srotas are described in Sushruta Sharira Sthana Ch. IX, together with the signs and symptoms of injury to them, as follows :

The two srotas (channels) of Prana (bronchi) have their roots in the heart and the Rasa-carrying Dhmanies (pulmonary arteries). An injury to any of these Srotas (vessels) produces groaning, bending down of the body, loss of consciousness (Moha) illusion and shivering, or may ultimately prove fatal.

The Annavaḥa (food-carrying) Srotas have their roots in the Amashaya (stomach) and in the food-carrying Dhmanies (intestines). An injury to or piercing of such a duct, Srota, gives rise to tympanites, colic pain, aversion to food, vomiting, thirst, blindness or darkness of vision, or may even end in death.

The Uḍakavaḥa (water-carrying) ducts or channels, of which there are two, have their roots in the palate and the Kloma, and a piercing of any of these makes the patient thirsty and ends in his instantaneous death (i.e. within 7 days). The Rasavaḥa (serum-carrying) ducts are also two in number and have their roots in the heart and the serum-carrying Dhmanies (vessels). An injury to or piercing of any of these ducts gives rise to Shosha (consumption) and symptoms identical with those developed by an injury to the Pranavaḥa channels of the body ending in death.

The Raktavaḥa (blood-carrying) Srotas (channels) are two in number and have their roots in the spleen and the liver and the blood-carrying Dhmanies (capillaries in general). An injury to any of these channels is attended with pallor, blushness of complexion, fever, burning sensations, excessive hæmorrhage, and redness of the eyes.

The Mamsavaḥa (muscle-carrying) Srotas (ducts or channels) have their roots in the Snayu, nerves, Tvak (serum) and the blood-carrying Dhmanies (capillaries). An injury to any of these channels is characterised by swelling, loss or atrophy of the muscles, appearance of varicose veins or may (ultimately) result in death.

The Medavaḥa (fat-carrying) Srotas (ducts) are two in number and have their routes in the region of the Kaṭi (waist) and the Vrikkas (kidneys). An injury to any of these bring in (a copious flow of) perspiration, oily gloss of the skin, parched condition of the palate, extensive swelling (of the affected locality) and thirst.

The Mutravaha (urine-carrying) Srotas which are two in number have their roots in the bladder and the penis (urethra). An injury to any of these is marked by constipation or epistaxis in the bladder, retention of urine, and numbness of the genitals.

The two Purishavaha (stool-carrying) Srotas (ducts) have their roots in the Guda (anus) and the Pakvashaya (large intestines); an injury to any of these is characterised by complete retention of stool (in the bowels) accompanied by a distension of the abdomen, foul smell and intussusception of the intestine.

The two Shukravaha (semen-carrying) Srotas (ducts) have their roots in the breasts and the testes. An injury to any of them leads to loss of manhood, delayed emission of semen, or blood-streaked character of that fluid.

The two Artava-carrying Srotas (ducts) have their roots in the uterus as well as in the Dhamanics which carry the Artava (ovarian product). An injury to any of these brings on sterility, suppression of the menses and incapacity for copulation.

Sushruta has not mentioned Asthi, Majja and Swedavaha Srotas and it must be borne in mind that instead of Shukravaha Srotas, females have Artavaha Srotas.

“General signs and symptoms of injury to Srotas are as follows: “Normal functions may either be increased or inhibited; tumours on Sira occur and substances like Doshas, Dhatus and Malas travel through other parts leaving their own.”

The treatment for above injuries is also described.

MARMAS

Marmas are vital points or places in the body. They are the sites where fleshy parts, certain Siras, Snayus and bones are intermingled with one another. Therefore the vital forces which carry on life originate in such a place. The symptoms produced by injury to Marmas are peculiar to the place.

A Marma contains the elements of Soma, Vayu, Tej, the Gunas of Sattva, Rajas and Tamas and the individual soul.

Marmas are 107 in number (11 in each extremity, 12 in the abdomen and thorax, 14 in the back and 37 in the neck and upwards).

Marmas have been classified according to injury. There are some Marmas, injury to which may cause immediate and spontaneous death. They are Sadhyahpranahara. There are others where death takes place after some interval. They are 33 in number. Then there are 3 where death occurs if the foreign body is removed. There are 44 where permanent loss of limb or of its activity results. There are 8 where intense pain occurs.

The importance of the knowledge of Marma in surgery becomes obvious because in carrying out operations care has to be taken to see that Marmas are not hurt as the slightest injury to Marmas may prove fatal or have disastrous effects.

SIRA

There are 700 siras in our body, Sushruta observes: 'They are seven hundred but there are many others which cannot be counted due to their minuteness. The siras by their contraction and expansion sustain and nourish the human being as canals and streamlets serve to keep a farm or garden aqueous, moist and fruitful.'

There is a classification of siras given by Sushruta and according to this, there are Vayu-carrying, Pitta-carrying, Kapha-carrying and Rakta-carrying siras. Kaviraja K. L. Bhishagratna suggests that 'Vata-vaha siras are nerves, pittavaha are veins, kaphavaha are lymphatic vessels and raktavaha siras are arteries.' There is no doubt that sira is a vessel in the body. Shri G. V. Purohit in the Sanskrit glossary at the end of his book defines Dhamanis a nerve, a channel for vata. Further he calls it "Duct or tubule or vessel."

Sushruta has described specific colours of the siras, saying, "Vata Vaha siras have a vermillion (yellowish-red) colour, and seem to be stuffed with vayu. The pitta carrying vessels are coloured blue and felt warm to the touch. The kapha carrying vessels are hard and cold to the touch and white-coloured. The blood-carrying vessels are red and neither too hot nor too cold."

There is an important verse meaning, 'there is not a single sira (vessel) in the body which carries either the vayu or the pitta or the kapha alone. Hence each of the vessels should be treated as affording an opportunity for conveying all kinds of doshas of the body because as soon as they are deranged and aggravated they seem to flow through all the siras promiscuously, and that is why they are called sarva-vaha—carrying all.'

DHAMANI

Sushruta says that there are 24 Dhamanias in all, and all of them have their origin in navel region. Shri K. L. Bhishagratna observes: 'so far, as in foetal life, all antoic arteries and the umbilical veins subserve the purposes of nutrition, excretion etc. and reflect the rudimentary vascular system.'

Some believe that there should be no distinction made between the Siras (veins), Dhamanias (arteries) and the Srotas (channels). Since Dhamanias and srotas are but different modifications of one original kind of sira (vessel). Opposing this opinion, observes Sushruta, "this is not correct. Because they have got different natures, origins, functions and as being described so in Ayurveda."

There is yet another description of mode of circulation, we find in Ayurveda. This is called 'Shabda-Archi-Jala santanvat', meaning, the flow of Shabda (sound), Archi (fire-flames-light) and Jala (water-liquid). As sound goes in all the directions, flames blow upward and water falls downward, the circulation has also three directions, downward, upward and transverse. This also gives us a fair idea as to the quality of knowledge our ancient Indian medical writers possessed. Archi-fire wise direction may suggest arteries, Shabda (word-sound) wise direction is suggestive of veins and Jala (water) wise circulation is suggestive of capillaries. Another commentator suggests the speed of these three light, sound and liquid flow: behind light is the fastest of all. Sound is slower than light, and flow of water will be the slowest.

This in brief is the Ayurvedic anatomy. The description of anatomy available in Charaka, Sushruta and Vagbhata may seem concise or lacking in particulars to the student of modern medicine but these experts on Ayurveda believed that what they have covered is sufficient as far as true Ayurvedic physiology, pathology and science of treatment are concerned.

Before concluding this chapter, we would like to place before our readers the remarks of Vaidya Shri. C. G. Kashikar, M.A., author of Ayurvediya-Padarthavijnana, who says: "The word purusha is homonymous. With regard to male and female it means male. In the subject of revelation of vedas it means God. While considering Purusha and Prakriti it means the soul. In animal medicine it may mean animal. In Ayurveda it means a living human being. The purpose of Ayurveda is to maintain the health of the human being and allay his disease. The duration of life (ayu) of a human being is a hundred years. Ayus (life), according to Charaka, is the combination of the human body, organs, mind and soul. Ayurveda is the science devoted to the consideration of what is favourable and what is unfavourable to life.

"Consideration of constituents of a living human being is called purushavichaya in Ayurveda. Vichaya means analysis. Purushavichaya means analysis of a human being".

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CHAPTER FIVE

OUTLINES OF TRIDOSHA THEORY

We have seen in the previous chapters that Vayu, Pitta and Kapha are the three somatic Doshas which in normal balance sustain health, and the imbalance of either one or two or all of them causes physical unhappiness known as Roga or disease. Now let us go into details about these Tridoshas.

There have been efforts to translate the words "Vayu", "Pitta" and "Kapha" in modern language by various authors in different forms. The exact literal translation — "wind", "bile", "phlegm" — does not, however, convey the exact meaning.

For getting the true meaning of the words "Vayu", "Pitta" and "Kapha" the real approach should be to study the principles of Tridosha in detail. We have mentioned before that five basic factors — earth, water, fire, ether and air — are the causative factors for production of the body and Vayu, Pitta and Kapha are the products of combination of these five basic factors (Mahabhutas). These Tridoshas are dravyas. They have got their physical properties and corresponding actions. In the human body these Tridoshas have got their special seats though prevailing everywhere. The production of these Tridoshas from our daily food intake is continuously going on and this production maintains the daily routine of life in normal order. Of these Tridoshas, Vayu is avyakta (invisible) because it has no definite size or shape but is known by its visible actions, i.e. vyakta karma. The Sun, the Moon and the Wind are believed by the ancient philosophers as three important fundamental factors governing the universe. Similarly the Ayurvedic physicians are also agreed that the Sharira Vayu, Sharira Pitta and Sharira Kapha resemble the actions of the Wind, Sun and Moon. The action of Sharira Pitta is compared with the Sun, the action of Sharira Kapha is compared with the Moon and the action of Sharira Vayu is compared with the Wind.

PHYSICAL PROPERTIES OF VAYU, PITTA AND KAPHA

THE NORMAL FUNCTION OF VAYU is to sustain the body and that is why it is the originator of every kind of action of the body. It controls the mind from turning to undesirable objects and guides it to desirable objects; it carries the sensation of sound, touch, etc.; it is the generator of speech; it is the cause of sound and touch;

it is the root cause of the sense of hearing ; it stimulates the body fire for appetite ; it is the cause of evacuation of urine, faeces and other waste material of the body. Thus it will be seen that Vayu has been aptly called Tantra-Yantra-Dhara, meaning the maintainer of the human machinery, keeping it in a natural order. It directs the senses to the respective objects. It is also the cause of every kind of channel, whether fine or coarse, in the body. It should be noted here that of all the Tridoshas Vayu occupies a predominant position as the leader of the three. As in the sky the wind is controlling the movement of the clouds, so in the body Vayu is guiding the movements of Pitta and Kapha. The disorders attributed to Vayu are eighty in number, to Pitta forty and to Kapha only twenty.

The PHYSICAL PROPERTIES of VAYU may be given as follows: It is dry, expanding, non-sticky, light, cold in action, penetrative, with Rajas predominating. It has no taste nor colour.

The physical PROPERTIES of PITTA may be given as follows: It is lightly viscid, flowing, non-sticky, active, hot in action and touch, with Sattwa predominating. In taste it is bitter, smell is that of raw meat and in colour it is red, yellow, green, etc. The normal quantity of Pitta in body is five añjalies.

The normal properties of Kapha may be stated as follows: It is viscid, motionless, sticky and slimy, heavy, cold in touch and action, inert, soft, with Tamas predominating. In taste it is sweet, in colour it is white and the normal quantity in body is 6 añjalies.

These physical properties, of course, belong to Vayu, Pitta and Kapha in their normal stage.

Each of these Tridoshas is further divided into five types, each of which has got a seat and a particular function. We will consider them in detail. Charaka has described five types of Vayu while sushruta had described five types of pitta and kapha also.

THE FIVE TYPES OF VAYU

The five types of Vayu are known as Prana, Udana, Vyana, Samana and Apana.

PRANA VAYU goes through the nose and mouth and has the action of holding the food and sending it down through the oesophagus to the stomach. It is the giver of life (the word 'prana' itself means 'life'). The seats of Prana Vayu are the brain, the face, the thorax, the ears, the nose and the tongue. The special seat of Prana Vayu may be said to be the heart. The normal functions of Prana Vayu are to maintain the action of the heart, the mind, the senses, the intellect, arteries, veins and nerves. In addition, it aids spitting out, sneezing, respiration, eructation and pushing down the

food into the oesophagus. Sharangadhara, one of the authorities on Ayurveda, has stated that “Prana Vayu after forcing through the interior of the lotus-like heart goes out through the throat to drink the outside air. After taking up the nectar of the outside air, it enters the body again to nourish the whole body and to keep up the digestive fire.”

It will be evident from this that the ancient sages of Ayurveda had a clear-cut idea of the process of inspiration and expiration and of the factor controlling them. “The nectar of the outside air” may today be named “oxygen” but with such solid proof available we can't say that the Ayurvedists were ignorant of the Respiratory System. We have mentioned previously that the circulation of blood was described in Ayurvedic texts more than 3000 years ago. Similar references are also available regarding respiration.

UDANA VAYU has for its seats the umbilicus, the thorax and the throat. It has a special tendency to move upward and produce the sound by causing vibration of the vocal chords. Another authority on Ayurveda adds that “Udana Vayu stays in the thorax and then goes upwards to the throat and nose and downwards to the nabhi pradesh (umbilical region). The special seat of Udana Vayu is larynx in the throat and in the thorax Udana Vayu stays in the lungs. The production of various sounds and speech, the action and efforts to keep up the strength of the body and specially to give strength to the mind, memory and intellect — these are the functions of Udana Vayu.

SAMANA VAYU has its special seat in the umbilical region and is connected with digestion which means the stomach and the small intestine, where the flow of digestive juices is helped and aggravated by the action of Samana Vayu. It stimulates digestion in a normal manner. Further, it has got the controlling action of sustaining the flow of liquids in the body. Chiefly it inflames and excites the digestive fire or the Pachaka Pitta and helps the digestion of food with its aid. Then there is its most important function — it separates out, after digesting, from the food juice, parts that are essential for the body and sends down the waste products to the large intestines. Thus Samana Vayu moves in the whole of the digestive tract. Its main function is to receive food from the oesophagus into the stomach and then help the digestion in stomach and duodenum.

Here again we find that the Ayurvedists were conversant with the digestive juices secreted from stomach, liver and pancreas and they were also conversant with the factor which stimulates the same. Thus division of the food juice, subsequent assimilation of the essential part in the body and expulsion of the waste product were

all well-known to them. In short, they have given a clear picture of the digestive system while explaining the actions of Samana Vayu.

APANA VAYU is situated in the lower part of the digestive tract, i.e. large intestines, urinary system and the reproductive system. Its functions are to hold the malam (faeces), mutra (urine), artava (menses) and veerya (semen) up to a normal period and then when the time is due for their expulsion, to send out the urine through the urethra, faeces through the rectum, menses through the vagina and semen through the urethra. It is also believed to be responsible for holding the foetus in the womb of the mother for the duration of about nine months and odd days and normal delivery is again brought by the action of Apana Vayu.

This Vayu has a downward motion (it should be remembered that before its downward motion it has the special function of holding faeces, urine, etc.).

In this description we find indirect reference to the urinary system and other allied functions.

Apana Vayu is one of the most important factors in the human body as when on account of abnormal habits or predisposing factors, the downward motion is held up and this Apana Vayu goes upwards, whereby the flow of urine, faeces, etc. is stopped; then heavy discomfort and uneasiness due to the pressure of this Vayu result and man becomes absolutely helpless. While treating the patient of such condition the physician usually makes sure whether the Apana Vayu has got its normal and natural downward motion or whether by some contributing factors it has acquired an abnormal or unnatural upward motion. In this condition the Ayurvedists used to prescribe enema, hot packages and carminatives (for Vata-anulomana) and help spontaneous relief by effecting the downward motion of Apana Vayu. It is claimed by some experts in Ayurveda that many such common conditions of the abnormal and unnatural upward motion of Apana give rise to the symptoms which are sometimes misunderstood to such an extent by the modern physician that without any clear proof, this sort of uneasiness, discomfort, pain in chest, etc. are mistaken for an attack of coronary thrombosis or such other allied heart conditions.

VYANA VAYU flows in the whole body and carries the food juice (Rasa) and blood throughout the body. It has the heart as the local seat and from there it flows all over the body. It is very quick-moving and has five kinds of actions viz. contraction, expansion, upward and downward movement and other general movements. It helps the secretion of perspiration or sweat. The closing and opening of the eyelids are also effected by this Vayu. It causes

yawning. Furthermore, it is believed to be the helper in the movement of spermatozoon inside the vaginal cavity and uterus enabling the spermatozoon to combine with the ovum.

It will thus be seen that this Vyana Vayu has got reference to the Circulatory System as well as to some special movements in the body and it is the chief cause of movement of the various fluids in the body.

The different actions of all these Vayus give us a complete picture of the Circulatory, Respiratory, Excretory, Digestive and other systems of our body, which means that the Ayurvedists were completely conversant in respect of these Systems. We have already pointed out that as there were difficulties in writing detailed treatises in the absence of printing presses, etc., the Ayurvedists have explained in brief but in a purely scientific manner, the different actions of the body. We again emphasise that these authorities who gave in later chapters the treatment for the various diseases, not only knew the important and effective herbs and drugs but were fully conversant with the actions of the various systems of the body in conditions of health as well as disease.

PITTA

The distinctive functions of Pitta as described in Ayurvedic texts are: colouration or pigmentation, digestion, heat, intelligence, sight, hunger, thirst, softness of body, radiance of body, cheerfulness and courage.

THE FIVE TYPES OF PITTA

PACHAKA PITTA — The Pitta which takes the main part in the digestion of food is known as Pachaka Pitta and its seat is in the duodenum, i.e. between amashaya and pakvashaya. Its qualities are described as transparent and concentrated hot liquid. If, as we have said, everything is panchbhautika, this Pitta is also panchbhautika but the quality of teja (fire) is predominant. It also, after digesting the food, divides the food juice into fine and waste parts and then it helps the remaining four types of Pittas in our body.

RANJAKA PITTA — When the food juice goes to the liver and the spleen it is digested by its own heat but the heat which imparts colour to it so that it turns red, is known as Ranjaka Pitta. This Pitta has its seat in liver and spleen and it is bright red. The liver and spleen are known as the seat of blood in Ayurveda. Like every other normal element maintaining the body (Dhatu), the blood circulates throughout the body. In short, Ranjaka Pitta imparts red colour to Rasa, i.e. food juice.

SADHAKA PITTA — has its seat in the heart and by its special properties it is the finest of all the Pittas and helps in proper functioning of the intellect and memory. By this normal function of the Sadhaka Pitta one's desires are fulfilled but it drives away the *tamas*.

ALOHAKA PITTA — The Pitta that is situated in the pupils of the eyes and helps to maintain normal vision is known as Alochaka.

BHRAJAKA PITTA — The Pitta which is situated in the skin all throughout the body is known as Bhrajaka Pitta (that which shines). It gives normal colour to the skin. Moreover it digests any oily or other substance rubbed into or massaged over the body. It maintains the normal complexion of the skin. Mainly it irradiates the glow of one's complexion.

It must be remembered that of the five Pittas mentioned above, though they have different seats and actions, each is included in the general term "Pitta" and hence the general property described for Pitta will be present in each of these Pittas. As we have said previously, the Tridoshas are also matter (*dravya*) and so are the five Pittas.

KAPHA

The main functions of Kapha as described in Ancient texts are: viscosity, nourishment, binding up the joints, solidarity of body, keeping up of the sexual vigour, fortitude, forbearance, patience and abstinence.

The physical properties of Kapha are: motionless, viscid, sticky, heavy, sweat, inert, cold, soft, white, *tamas* predominating, and it is in measure of (one's own) 6 *Anjalies* is in body.

KLEDAKA KAPHA — After we take food and when it reaches the stomach there is a Kapha present there known as Kledaka (that which moistens) Kapha. It moistens the food and then breaks it up into finer particles. This Kapha is secreted in the stomach as a foamy secretion. Of the five types this is the main Kapha and it nourishes the remaining four Kaphas by its special humid properties.

AVLAMBAKA KAPHA — The Kapha which has a seat in the thorax and protects the heart from excessive heat by its cooling influence and gives a special power to the heart is known as Avlambaka (that which supports). It affects the heart with the help of *Rasa Dhatu*.

BODHAKA KAPHA — The Kapha which moistens any substance when it comes in contact with the tongue and helps to know the taste of a particular substance is known as Bodhaka (that which

helps perception). The Bodhaka Kapha occupies a seat which extends from the root of the tongue to the throat. It also moistens the food before it goes to the stomach via the oesophagus. By this Bodhaka Kapha we know the taste of things and it plays a part in increasing appetite and desire. When we see any food which we like more than others, this Kapha is secreted in excess.

TARPAKA KAPHA — The Kapha which cools the organs of senses such as the sense of sight, of hearing, etc. is called Tarpaka (which satisfies) and is situated in the skull. It has a special soothing effect by which it maintains the sense organs in good order.

SHLESHAKA KAPHA — The Kapha which is situated in the joints and keeps them firm is known as Shleshaka (that which joins). The Shleshaka Kapha by its viscid property prevents the generation of excessive heat in the joints and protects them. It lubricates the different articulations of the body and thus helps them to remain firm while at the same time allowing free movement of the bones.

It will be seen that the Ayurvedists were conversant with the various actions and functions being performed in the body, all of which they attributed to particular types of Tridosha. The reader will have noticed that the hridaya or heart is the seat of Prana Vayu, Sadhaka Pitta and Avlambaka Kapha. It is the seat of Rasa Dhatu. Now, it would be very worthwhile to carry out research on these functions and give appropriate names to these particular types of Doshas. In fact, such efforts have been made by a few authorities. Some, for example, say that Ranjaka Pitta is nothing but haemoglobin, i.e. colouring material; some think that Pachaka Pitta is nothing but the combination of the digestive juices like gastric juice, bile and pancreatic juice; some think that Bodhaka Kapha is saliva, etc.; some attribute the Tarpaka Kapha to be the cerebro-spinal fluid; others think that Prana Vayu is oxygen. In this way efforts have been made to understand each element in modern terms. We are afraid, that unless a group of scientific experts study Ayurveda in great detail for many years and try to understand it and then fix the standard terminology instead of naming these five types of each Dosh by guess-work only, there would be only a lot of futile fuss.

THE DIFFERENT TYPES OF AGNIS

The principal action of Agni is to digest with the help of Vayu. The Ayurvedists have recognised thirteen types of Agnis, seven Dhatu Agnis (Agnis of seven Dhatus of the body), five Bhuta Agnis (pertaining to the five Bhutas composing the body), and one Jathara Agni, the digestive fire found in the stomach. Of all these Agnis,

the Jathara Agni is the most important. The Jathara Agni contained in Pachaka Pitta is the root of the Agnis of the body. It keeps up the heat of the whole body. It maintains good health, development and strength. Energy is increased and the body gets a healthy lustre. When this fire is diminished, life becomes extinct; when it is kept normal, man lives a long and healthy life. When this Agni is deranged, man gets disease; so Agni has also been described as the root of health as well as disease.

Agni is in the form of Pitta and it is present everywhere in the body and in consequence a constant process of digestion is going on in every part of the body. Due to constant digestion of the Dhatus, there is corresponding waste product in the body. This waste is ordinarily given up by the food. Food serves as the fuel for the body fire. Charaka has advised that the body fire should be maintained by a regular and adequate supply of fuel in the form of food and Sushruta calls food "the retainer of strength and vitality." The spermatozoon and the ovum which by their union produce a living being are themselves produced ultimately from food. Thus food is the cause of production and preservation of normal life. So the quality of food should be good; it should contain all Rasas (tastes) and it should be properly digested. Unless it is properly digested, it cannot nourish the body. As Charaka has put it "the undigested food is useless for the purpose of nourishment". Digestion is needed to alter the food to such a condition as to be fit and fine for assimilation and absorption in the body.

There are six factors known as 'food digestion helpers' viz. (1) Pachaka Pitta or Agni (2) Samana Vayu (3) Moisture (4) Kledaka Kapha causing viscosity (5) Time and (6) Proper combination of all the first five. Vayu pulls the food down into the stomach and brings it near the Agni and also inflames the Agni; moisture breaks up the compactness of the food; Kapha by its viscosity softens the food; Time is required for completion of the process of digestion; a combination of all these is necessary for the due production of the final fruits of digestion, which by nourishing the different body constituents keep up the normal proportions.

There are four varieties of food (1) Asita — food like rice, wheat, bread, etc. (2) Pita or liquid — water, milk (3) Lidha or semi-solid like curry (4) Khadita or solid like fruits, etc.

The various kinds of food — and all of them are Panchabhautika — are primarily digested by the abdominal fire and then further by their own different five basic factor fires or Panchabhutagnis. Thus the earthy or solid part is digested by Parthivaagni, watery or liquid part by Apya-agni, the fiery or hot part by Tajjasa-agni, the airy or gaseous part by Vayavya-agni, and the

ethereal part by Nabhasa-agni. The Parthiva part of the food is utilised for nourishing the muscles, bones and other solid parts of the body. The Apya part nourishes chyle, lymph, blood and other liquid parts and so on.

PRODUCTION OF TRIDOSHAS

We shall now deal with the action of Tridoshas on our diet. Our food possesses six tastes known as Rasas — sweet, sour, salty, pungent, bitter and astringent, as against four, recognised by modern physiologists. The food we eat is first subjected to digestive action in the mouth and the upper part of amashaya by Bodhaka and Kledaka Kapha respectively. This action is known as 'Madhura-vipaka' (sweet-digestive special action), Kapha being sweet. Then comes the action of Pitta on the food juice which is known as 'Amlavipaka', amla being the physical property of Pitta. After absorption of the fine parts of the food juice, the coarse waste product is sent to the large intestines, where it begins to be dried up by Agni which is known as 'Katuvipaka'. All these special actions called 'vipakas' are local digestive actions.

These actions undergo some modification according to the food we take. For example, supposing we take a diet rich in sweetness called 'madhura anna' (sweet diet), then in the mouth and stomach, there will be the natural local digestive action, madhuravipaka, which is enhanced by the sweet taste in the diet, resulting in the formation of excessive Kapha. If, on the other hand, our diet has an excess of amla Rasa (sour taste), there will be the usual local sweet digestive action in the mouth and stomach; but when the food juice comes in contact with Pitta, there will be the local natural action known as 'Amlavipaka', which will be enhanced by the excess of amla Rasa in diet. Similarly a diet of excessive bitter taste will be subjected to natural local action by Vayu in the large intestines and 'Katuvipaka' will be enhanced by the excessive bitter taste.

RASAS (TASTES)

Thus it will be seen that if a diet rich in a particular taste is taken, one of the vipakas, madhura, amla or katu, will be enhanced. Ayurveda therefore advocates a diet enriched with all the tastes and which is also thus enhanced.

We have seen before that each physical constitution has a preference for a particular taste — Vatika physical constitution will like sweet, sour and salty dishes more, while Kaphaja physical constitution will like bitter, etc. Rasas more. This is a natural liking caused by the action of various Rasas on the Doshas. Every Rasa has got action on the Dosha and that is a subject of great interest. This Rasa

theory occupies a very important place in the materia medica of Ayurveda. The Ayurvedists have, while describing all the drugs separately, given the principal Rasas present in the drugs, herbs or remedies. This Rasa theory applies also to substances forming diet and we can divide these into four varieties, Dhanya (cereals and condiments), vegetables, fruits and flesh. Later we will discuss each dietary item with the Rasas contained in it. It is not very difficult to find out how the Ayurvedists determined the predominance of a particular Rasa in a given substance. Rasa means taste. Six types of tastes were arrived at. Chakrapani, the learned commentator of Charaka, has written that usually the Rasa of a substance was decided by its taste on the tongue (Sushruta has mentioned that at the tip, in the middle and at the end of the tongue, different tastes are clearly recognised). However, Rasa was also decided by the activity of the substance and results on the physical constitution. As the theory of Vata, Pitta and Kapha is the fundamental principle of physical constitution, so the Rasa theory is the fundamental principle of dietetics and drugs. The reader is requested to refer to the chapter on Materia Medica for further information.

“Virtue lies in the mean” — this Aristotelian principle is as true of bodily health as it is of mental and moral integrity. Tridoshas maintain normal health when they are in equilibrium and their imbalance gives rise to the condition known as disease. To understand this principle in detail we will have to go deep into the study of physiology.

Our physique is called Sharira and is composed of five basic factors, earth, water, fire, ether and air and these when combined with the soul is known as Purusha. There are other theories defining the nature of Purusha but the principle that Purusha is composed of six constituents, five basic factors and the soul, is the main doctrine put forward by Sushruta saying that “This is the Purusha which is the field of treatment”. This is applicable to the animal kingdom as well and accordingly a lion or a dog may be said to be composed of six constituents, five basic factors and the soul. So the question may be asked whether they too can be treated along the lines of Ayurveda. The answer is, for them separate treatises like Gaja Ayurveda (Ayurvedic treatment for elephants), Ashwa Ayurveda, etc. have been written but for the purposes of our discussion here we will confine ourselves to the human being.

DHATUS—BODY CONSTITUENTS •

There are seven constituents of the body known as Rasa Rakta, Mamsa, Meda, Asthi, Majja and Shukra. Some call them ‘Body elements’ also but we would like to call them constituents of the body in the sense that they are known as ‘Dhatus’ and they maintain the

body. Tridoshas, which maintain normal health when they are in a normal condition, are sometimes called Tri-dhatu but 'Dhatu' generally stands for one of the seven constituents named above.

Each Dhatu has got a separate function in the body. Rasa Dhatu which is derived from food-juice, has a typical nourishing effect. It circulates through the various channels of the body and nourishes the blood. It has a soothing effect on the senses; in fact, it soothes the whole body and creates a feeling of peace and satisfaction in the mind. These actions are known as Preenanama and Tushti.

RAKTA DHATU which is derived from Rasa Dhatu is known as jivanam or life. It maintains the normal activities of life and the natural glow of the complexion. It nourishes the muscular tissues and increases vitality.

MAMSA DHATU covers the bone, contributes to the strength of the body and nourishes the meda.

MEDA DHATU cools the body. It gives rise to perspiration and oiliness of the body and contributes to firmness and nourishment of the bone.

ASTHI DHATU supports the body and nourishes the marrow.

MAJJA DHATU contributes to viscosity and strength of the body, fills the cavities and pores of the bones and nourishes the semen.

SHUKRA DHATU mainly produces activity and the sense of satisfaction. It is the cause of bodily vigour and impregnation and possesses the virtue of being ejected out during sexual intercourse.

There are sub-constituents also e.g. in a woman from the food juice milk for feeding the child is formed in the breast after delivery and it gives life to the infant; the other sub-constituent in woman, formed from Rasa, is the menstrual discharge starting at an age somewhere near twelve and ceasing at the age of about fifty.

Doshas, Dhatus and Malas constitute the body. As already explained, Doshas are three in number, viz. Vayu, Pitta and Kapha; Dhatus are seven in number — Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra; Malas comprise of Mutra, Shakrit, Sweda. We have given detailed information about Tridoshas, the three somatic principles, and Saptadhatus or seven body constituents. Now we shall proceed to give a picture of the part played by the various Malas or body secretions.

MALAS

The chief Malas are Mutra (Urine), Shakrit (faeces) and Sweda (perspiration). The term "Kitta" or waste product has also been applied to Mala. In Sanskrit the word "Kitta" means "that which has to go". Actually, after the whole process of digestion is over and the fine necessary part is absorbed and assimilated, the undigested

part which is removed from Pakvashaya or the large intestine by Apana Vayu through the rectum is known as Purisha, Vita, Mala or Shakrit. Generally, the term "Kitta" is applied to the waste products of Dhatus also. The following is a complete list of Malas :—

(1) Rasa Dhatu's by-product will be Kapha; (2) Rakta Dhatu's by-product will be Pitta; (3) Mutra (urine), (4) Sweda (sweat); (5) Purisha-sneha (faecal fat); (6) Mala, Vita or Purisha (faeces); (7) Prajanana-mala (secretion of the genitalia); (8) Kha-malas (excretions of the openings of the body e.g. Karna (ear), Twak (skin), Nasika (nose), Asya (mouth), Keshha (hair on the head), Smasahru (the beard), Loma (hair on the body), Nakha (nail).

Mala and Sneha mean simple waxy or oily secretion or discharges.

We have described the effects of Malas on the body in the chapter on Examination of the Patient and the reader may refer to it. Although these Malas are waste products or by-products and are usually expelled from the body, they too have their actions and functions of a normal nature in the body. Whenever there is an excess quantity of these Malas, untoward effects will be experienced; whenever there is a deficiency in the quantity of these Malas in the body, the effects of such deficiency will also be felt. As we have seen in the previous chapters, the Vriddhi (increase) or Kashya (decrease) of Tridoshas, the seven Dhatus or body constituents have a vital part to play in bringing about disease or discomfort in the body. Similarly the Malas, body secretions or waste products have also a typical effect on the body if they are in an increased or decreased condition.

It will be seen that according to the Ayurvedic theory the Doshas, the Dhatus and the Malas constitute the body and when they are in a deranged condition, they give rise to disorder. Doshas play the main part in the constitution of the body and accordingly greatest importance is attached to Doshas; then come Dhatus and then Malas; hence the whole science of this 'tripod' is known as Dosha-Dhatu-Mala Vignana or the Science of Tridoshas, seven body constituents and various body secretions and excretions.

These Malas also are Panchabhautika and treatment to restore these in normal order has also been suggested.

Purisha or Shakrit (faeces), the portion of undigested food in Pakvashaya or large intestine being dried up by heat, is converted into lumps and as a result of this, Katu or pungent vipaka or the local digestive action takes place and Vayu is formed.

The Ayurvedic theory and the modern view on the formation of mutra or urine differ and if a research is carried out then it will add some new contribution to medical science. In chapters on

jaundice the Ayurvedists have described stool as of clay colour (Tilpishtanibham i.e. similar to the clay colour produced by till when ground and made into a paste). They were conversant with the blockade of Pittavaha srotas or channels carrying Pitta into the digestive tracts and they have suggested the treatment to open up these Pittavaha srotas or the bile ducts. It becomes clear that they were conversant with the theory that urine is not directly excreted from pakvashaya or the large intestine. However, two different theories existing at a time may be suggestive of two different conditions and hence those who are interested in research will find the subject of some interest. We hope that scholars and research workers will pay attention to it.

A lot of confusion and misunderstanding arise from the literal translation of the word 'Doshas' as defects or humours by a few authors who have tried to present the Ayurvedic view-point in the English language. It looks very funny indeed when Tridoshas are spoken of as 'three defects'. As we have seen, Tridoshas maintain the body. We can never say that three defects maintain the body nor that imbalance of defects can cause a disease. Let us try to understand what then is the correct position.

Vayu, Pitta and Kapha these three are usually called Tridoshas and each of them is known as Dosha. We should, in fact, call them Tri-dhatu or each of them as a Dhātu when we say that they are the causative factors for the physique and that their balance maintains normal health. Such references to them as Tri-dhatu and each of them as dhātu are available but as the Ayurvedist is confronted with a situation where he has to deal with the abnormal condition of health, he has to recognise them or each of them from a different position. When a physician is treating a Vyadhi or Roga or disease, he actually comes in contact with the abnormal condition or the aggravated condition or the imbalance of Vayu, Pitta and Kapha and in these circumstances these Tri-dhatu being deranged are known as Doshas and the reason for calling them Doshas arises because one, two or all three of them, after getting deranged, go to the seven bodily dhatus or constituents which are known as Rasa, Rakta, Mamsa, Asthi, Majja and Shukra (q.v.) and spoil them and at this juncture the body-dhatu or constituents are known as 'Dushyas' (being spoiled or spoilt). A clever physician has to recognise which of the Tridoshas is predominant in so spoiling one or more of the seven dhatus and accordingly he has to keep in mind Tridoshas and seven Dushyas. The latter condition when Vayu, Pitta and Kapha are known as Doshas is the one which a physician meets with normally and hence the routine or formal method of calling them by the term Dosha has become common, but to remove the confusion, Ayurvedists have said in the beginning of the texts

that the balance of the Doshas is health and imbalance of Doshas is disease and by saying so they have clarified the two different functions as the balance or imbalance or equilibrium or inequilibrium of the Tridoshas.

As we have already clarified, urine, sweat and faeces are the three by-products excreted from the body known as body secretions or Malas. Here again, we find references where Vayu, Pitta and Kapha are also called Malas. Necessary differentiation should again be made in the use of the term 'Malas'.

As explained above, Vayu, Pitta and Kapha take part in the formation of the body constituents at the time of conception when the spermatozoon and foetus meet and the entry of soul takes place. At this time Vayu, Pitta and Kapha are in the condition known as Dhatus and they naturally arise from the five Mahabhutas. Now, after birth, by dietary or any other error, these three Dhatus get deranged and spoil the seven body constituents and are then known as Doshas. After the nourishment function in the body is over and impure material is excreted, Kapha in the form of nasal discharge, Pitta in the form of vomiting and Vayu in the form of gas, in that condition these same three Vayu, Pitta and Kapha are called Malas, being in a deranged and spoilt condition having putrefied the seven body constituents. So the intelligent reader will be able to understand the difference between the use of the terms Doshas, Dhatus and Malas each pertaining to Vayu, Pitta and Kapha in different conditions:

(1) When Vayu, Pitta and Kapha maintain the body we can call them Dhatus because the literal translation of the word Dhatu is 'Dharanat Dhatava'.

(2) When Vayu, Pitta and Kapha get deranged, spoil the seven body constituents known usually as Dhatus and turn these Dhatus into Dushyas yet known as Doshas, in this condition Vayu, Pitta and Kapha will be called Dushyas (the literal translation of Dushya is Dushanat Dosha).

IMPORTANT. Usually as the physician has to deal more often with this condition, the normal practice of terming Vayu, Pitta and Kapha as Doshas obtains in most parts of the Ayurvedic treatises.

(3) When Vayu, Pitta and Kapha are excreted in the form of body secretions other than faeces, sweat and urine, they are called Malas in the sense of their capacity to putrefy the body materials. The reader should note this difference between Malas.

CAUSES OF DERANGEMENT OF VAYU*

Anything in excess, whether it be activity, diet, exercises or any other practice, will aggravate Vayu. Wrestling with a person

who has more strength, excessive fighting or excessive manual or mental labour, excessive indulgence in sex or waste of Dhātu (body element), excessive study, excessive speaking or speaking very loudly, lot of fear, grief or anxiety, running or walking long distances, great pressure, strain or stress, doing exercises like high jump or falling from a height, excessive swimming or swimming against the flow of the current, keeping awake in late hours of night, carrying heavy loads, excessive riding on horse or elephant or excessive use of carriages, fasting for a long time or otherwise excessive eating or eating irregularly, and most important of all, the suppression of calls of nature, such as passing of wind, urine, faeces etc. — these are the causes generally aggravating Vayu. Taking food which is bitter, pungent or dry or food which is very light or dry meat or excessive use of rice and pulses — all these give rise to Vayu. Then, Vayu is aggravated in the cold and rainy seasons, especially in cloudy and stormy weather. Vayu is usually aggravated in the evening or in the night when the completion of digestion is nearing. Moreover, in old age also Vayu is aggravated. There is a belief that when the body elements or Dhātus are reduced in quantity and quality, which condition is known as Dhātu kshaya, then Vayu is aggravated. There is another condition where there is blockade in the channels of the body. This is known as 'Srotorodha'. This also aggravates Vayu.

By the aggravated Vayu, stiffness, rough skin, eruption, excitement, tympanitis, shivering, pain, hoarseness, deafness, yawning, articulation, dryness, thirst, melancholy and such other abnormal symptoms are brought about. Of these pain is the most important because there can be no pain without aggravated Vayu, which is the general principle of Ayurveda. However, the keen Ayurvedic physician used to differentiate between the aggravation of Vayu caused by the loss of body element and by the blockade in the body channels.

CAUSES OF DERANGEMENT OF PITTA

By anger, grief, physical exertion, fear, improper digestion, acid formation, unnatural sexual intercourse, by taking too much bitter, acid, salty and dry substances, by too much use of mustard, sesamum and linseed oil, fish, mutton and stem of green leafy vegetables, wine, curd and whey etc. and by excessive exposure to the sun and heat, Pitta is naturally aggravated. Further, it is aggravated in summer and in autumn, at noon and at midnight, during the process of digestion and in middle age.

Acidity, swooning, perspiration, restlessness, thirst, desire for cold substances, paleness of the skin, delirium etc. are marked when there is Pitta aggravation.

CAUSES OF DERANGEMENT OF KAPHA

Kapha is aggravated by total or major lack of physical exercises or sedentary habits, sleeping in the day time, taking too much of sweet, acid and salty food, oily substances or excessively heavy food or too much use of milk, curd, sugar, fat, whey, sweet fruits, meat of aquatic animals etc. It is also naturally aggravated in the winter and in the spring, in the forenoon and just after meals and in childhood.

Heaviness, drowsiness, constipation, itching, whiteness of the skin, feeling sleepy etc. are abnormal symptoms of aggravated Kapha.

Here it will be noticed that while giving the causes of derangement of each Dosh, two types of causes have been given (1) practice or diet and (2) natural causes such as season or time or age. The first type of cause can be remedied by correcting the diet or practice, while with the second type of cause we would not be able to correct it by suitable diet or practice.

The Dosh in the deranged condition manifests abnormal symptoms before functioning abnormally in the body. General symptoms of derangement of Vayu have been described, which include thirst, shaking, dryness, roughness of the body, redness of the skin and various kinds of pain. The reader will remember here that we have classified Vayu into five types. The aggravated Prana Vayu produces hiccup, asthma, cough etc. The aggravated Udana Vayu produces diseases of the ear, nose and throat. The aggravated Vyana Vayu produces diseases all over the body and especially the Circulatory System. The aggravated Apana produces diseases of the urinary tract and the colon like constipation, flatulence etc.

Deranged Pitta gives rise to burning sensation, excessive heat in the body, perspiration, acidity, thirst, irritation, pimples, redness of the eye, putrid smell, decomposition, langour, hysteria etc. etc. The five types of Pitta when deranged will give rise to the following symptoms :

Pachaka Pitta produces indigestion, burning sensation, hyperactivity and feeling of heat in chest and stomach, and thirst. Deranged Ranjaka Pitta affects the liver and the spleen and produces Rakta Pitta, where there is expulsion of blood either from nose, ear, throat or from the lower parts like urethra, anus or vagina. Deranged Sadhaka Pitta destroys the imaginative power and produces apoplexy, stupor etc. Deranged Alocaka Pitta destroys or reduces sight and deranged Bhrajaka Pitta produces diseases of the skin and changes in the pigmentation and colour of the skin.

Deranged Kapha produces heaviness in the body, drowsiness, numbness, whiteness of the skin, itching, feeling of old age and

rigidity, sweet taste in the mouth, nausea and aversion to food. Deranged Kledak Kapha produces dyspepsia, white urine and faeces. Deranged Bhodaka Kapha affects the sense of taste. Deranged Tarpaka Kapha produces loss of memory and vitiation of the senses. Deranged Shleshaka Kapha produces heaviness in the joints, as does deranged Avlambaka Kapha.

There are three types of conditions in which the equilibrium of the Doshas may be disturbed. One is reduction or kshaya. We may call it waning of one or two or all the Doshas. The second is aggravation or vriddhi, where one or two or all of the three Doshas may be in excess. This is again in two stages: one is prakopa or acceleration and the second, çhaya or accumulation. The third condition is prasara, where the Dosha may leave its own seat and proceed to the seat of either of the other two Doshas or one of the Doshas may be covered by another. There are typical symptoms manifested when a Dosha is thus disturbed by waning, aggravation or expansion.

The waning of Vayu is followed by symptoms such as uneasiness, loss of consciousness and a state of langour. Excess of Vayu brings roughness of voice, emaciation of the body, darker complexion, desire for heat, throbbing sensation, constipation, insomnia and weakness. The waning of Pitta causes dullness of complexion and diminution of body heat, while excess of Pitta is marked by burning sensation in the body, desire for cold things, yellowish tinge, yellow eyes, yellowness of faeces and urine, insufficient sleep, fainting fits and weakness of the sense organs. The waning Kapha gives rise to dryness, sensation of internal burning, feeling of emptiness in the stomach and other cavities of the body, looseness of the joints, thirst, weakness and insomnia. The aggravated Kapha causes heaviness of the limbs, feeling of cold, drowsiness, excessive sleep, loose feeling in the joints and white complexion.

Thus this is in short, the outlines of Tridosha theory.

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PHYSICAL CONSTITUTION

THE theory of the physical constitutions recognised by Ayurveda represents the oldest and most enduring attempt at a typological approach to personality. In terms of it, every man is a different patient and even though a group of men suffers from the same disease, the Ayurvedic physician will have a different outlook on each of them. This is the distinction that Ayurveda makes. We have attached great importance to the recognition of different physical constitutions and peculiarities of various personalities in our previous chapters and we hope readers have borne in mind the idea of physical constitution. We have already dealt with Deha-prakriti, how it remains unaltered from birth to death and how drugs cannot change it. We have also mentioned the factors, such as race, country, season, etc. which affect the constitution. These factors, however, play only a small part. The main factor affecting the physical constitution, the habits, diet, appetite, clothing, behavior, health, diseases and mental aspects in relation to each physical constitution is a typical one. When we say that a particular person is of a particular type of constitution as for example, Mr. X is of Kapha constitution, we mean that he is of the physical constitution in which the Kapha Dosha is predominant but at the same time the remaining Vata and Pitta Doshas also play a part in the constitution because everything is a compound of all the five chief factors, earth, water, fire, ether and air, even though every material has got a particular basic factor in action. For example, though the human body is made up of the five basic factors, it is chiefly composed of earth and hence where the prithivabhuta is in excess we call the material Parthiva (earthy). However, that material also contains the remaining four basic factors. Even each basic factor mentioned above is composed of five main basic factors. Individually each basic factor exists outwardly but if we go in detail we find that the composition of everything is of five basic factors. Similarly, of the Tridoshas present at the time of conception or meeting of spermatozoon with the ovum, the Dosha in excess takes part in the formation of prakriti but the remaining two Doshas also help in the constitution; so when we call a typical constitution of the predominant Dosha it should be borne in mind that though a person will have a particular Dosha in excess in exhibition of his constitution, the other two Doshas are also present in the constitutional make-up.

' We will make the whole case more clear. When we say that a particular person is of Vata-prakriti it goes without saying that though Vata is in excess, Pitta and Kapha are also present—Pitta in lesser quantity and Kapha in the least quantity or Kapha in lesser quantity and Pitta in the least quantity. Similarly with the Kapha-prakriti, either of the two remaining Doshas may be in lesser or the least quantity.

Sometimes two Doshas are predominant in similar proportion and in this case we have a mixed constitution (Dwandwaja), e.g. supposing Vayu and Kapha are both in predominance, then the person will be of Vata-Kapha prakriti. In this way Vata-Kaphaja, Vata-pittaja and Pitta-Kaphaja prakritis will result. Sometimes when all the Tridoshas are in excess, then Tridosha constitution will prevail.

Finally, we may have a condition where all the Tridoshas are not in excess but in similar and natural proportion. The constitution resulting from this condition is known as Samaprakriti but it is an extremely rare condition. It is perhaps the healthiest of all because the Doshas which take part in the formation of such a constitution are natural and normal. This we can call superhuman personality but usually what we see is a person of either singular Dosha, i.e. Vataja, Pittaja or Kaphaja personality, or a combination of two Doshas resulting in the mixed personality. The classification of personalities into these categories may seem mathematically a bit easy but when we analyse and observe a particular person and his personality, it becomes a matter of keen interest and great dividends as we study human nature. The Ayurvedists have given in detail the symptoms of each constitution as a result of their keen observation. In addition, they have given the physical properties of each Dosha, Vata, Pitta and Kapha respectively, which we have seen in the former chapters. The particular property of each Dosha results in particular symptoms of particular constitution. For example, we have seen "activeness" as one of the physical properties of Vata and due to this property the Vataprakriti person will be much more active in all his actions. We have seen in the physical properties of Kapha that it is very slow in action, so the Kapha-prakriti person will be very slow in all his actions. Taking into consideration the particular property of each Dosha they have given the relative symptoms and their observations have been very minute and surprisingly correct.

We have now given the reader the background of the formation of a particular body-constitution and we will later on give the detailed description from the ancient texts for the benefit of the reader. A detailed study of this by any individual physician is bound

to give a thrilling experience while treating each patient separately. The Ayurvedists have presupposed that each physician may not have developed the faculty of intuition and observation and they have described in great detail their observations to oblige the average physician. For further details of each Prakriti, the reader may refer to the Chapter on the examination of the patient (Chapter 12).

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ON PERSONAL HYGIENE

“He who rightly observes the rules of health laid down here will not be deprived of 100 years of healthy life.”

— *Charaka.*

IN Ayurveda the art of being healthy and long living has been described in an exhaustive manner and if we follow the rules laid down therein, naturally we will be endowed with health and long life. The general rules laid down for dietetic and other measures necessary for life are discussed in detail in the chapter on personal hygiene in all the Ayurvedic texts and much importance is given to this aspect of living. The general principle is that Ayurveda has attached greater importance to the prevention of disease by living a normal and healthy life. They have asked man to do the following things and remain healthy :

“A wise man should eat not only substances of suitable quality but he must observe a measure in diet and this measure is always determined by the strength of one’s own gastric fire or appetite. The measure in diet is defined as ‘the proper measure of food which, when taken, is digested in due time without impairing one’s health’.

“Green gram, common quail, grey partridge, antelope, rabbit, wapiti, Indian sambar, sali rice, sastika rice — they all are light items of diet but they should be taken in measure.

“Sugarcane juice, pastry, milk, til, black gram, the flesh of aquatic and wet-land animals and other similar articles of food which are heavy should also be taken in measure.

“The heavy articles contain the properties of earth and water. Light articles are stimulative of gastric fire owing to their innate quality and are considered to be the least harmful even if they are eaten to a surfeit. The heavy articles are by nature non-stimulative of the gastric fire is increased by heavy and hard exercises.

“Thus the measure in food depends upon the strength of one’s own gastric fire. However, the quantity of each of the kinds of food also counts. It is laid down that the heavy article should be taken in $\frac{1}{3}$ or $\frac{1}{2}$ measure of the full meal, while the light article should not be taken in excess.”

Importance was equally attached to regular meals, and irregular meals have been said to contribute to ill-health. On the contrary, the measured diet not only does not impair one's health but positively promotes one's vitality, complexion, normal health and life.

Dried meat, dried vegetables being heavy are not to be taken habitually, nor should the flesh of an emaciated animal be used. Coagulated milk, cream, cheese, pork, cow's and buffalo's flesh, fish, curds, black gram and wild barley should not be used habitually. Sastika or sali rice, green gram, rock salt, emblic myrobalan, barley, rain water, milk, ghee, flesh of jangala animals and honey — these items can be taken habitually.

The verse goes on to say "That should form the daily diet which does not only help to maintain the present well-being but serves as a prophylactic against future disease."

Diets and practices in relation to seasons have also been prescribed. In India the general division of the year is in three parts known as winter, summer and monsoon. Again, each of these three is divided into sub-seasons — winter in Shishira and Hemanta; summer in Vasantha and Grishma; and monsoon in Varsha and Sharada. Charaka has, in the chapter on Sutra Sthana, dealt with the seasons in clear terms and laid down the rules for diet and practices as follows:

"Seasonal Homologation — The seasonal dietary and regimen practised by a man who knows the seasonal homologation with regard to behaviour and diet, promote his vigour and complexion.

Seasonal Divisions of the Year — Now the year, as we have said, consists of six parts when divided according to the seasons. From among these, the three seasons from the dewy season to the summer represent the sun's northern course and its 'period of absorption'; while the three seasons from the rains to the winter represent the sun's southern course and its 'period of liberation'.

Seasonal Characteristics — During the period of liberation, the prevailing winds are not marked by excessive dryness; it is otherwise with the period of absorption. During the former, the moon with unabated vigour aggrandizes the earth by surcharging it with her cool radiations and nourishes it constantly; therefore the period of liberation is characterised by the predominance of the water element. On the other hand, the period of absorption is characterised by the predominance of the fire element."

In this manner, the sun, the wind, and the moon, governed by time as well as their own special natures and orbits, are spoken of as the causative factors of the manifestation of the periods, seasons, tastes, constitutions and bodily strength.

The Debilitating Effect of the Season of Absorption—During the first period, the sun with his hot rays absorbs the moisture from the earth and piercing dry winds further dehydrate it; thus the sun and the winds, giving rise to progressive dryness and promoting the formation of the three dry tastes, bitter, astringent and pungent respectively, lead to the gradual waning of strength in men.

The Strengthening Effect of the Season of Release—From the season of the rains to the autumn and the winter, however, the sun who has set its face to the south, being shorn of its glory by the cumulative influence of the period, orbit, clouds, winds and rains, the moon remaining undiminished in power, and the summer heat having been quenched with the descent of rain, the tastes sour, salt and sweet, increase in the given order. During this period, the strength of men waxes.

The Developing order of the two Seasons — In the beginning and the end of the sun's period of liberation and absorption respectively, the bodily vigour of men is at its lowest; in the middle of these periods, it is moderate; while, it should be known, that at the end of the former and the beginning of the latter period, the bodily vigour is at its highest."

REGIMEN

WINTER

In the cold season or winter, the gastric fire in strong men, hemmed in by the cold air all round, becomes greatly enhanced and capable of digesting heavy food intake, both as regards measure and quality of the articles.

If such a gastric fire does not get sufficient amount of fuel, then it consumes the body fluids and thus the Vata, possessed of cold quality, is provoked in the cold season.

DEWY SEASON

Hence in the season of the snows, i.e. winter, one should take unctuous, acid and salt juices of the flesh of fatty animals of the aquatic and wet-land groups.

One should take the spit-roasted flesh of the burrowing and the tearer groups of animals, followed by a potion of madira and seedhu wines and honey.

One who uses habitually in winter, milk, preparations of sugarcane juice, animal fat, oil, new rice, and warm water, protects his life-span from diminution.

One should resort to inunction, oil-massage, oil shampoo, hot house sudation, sunbaths, warm cellars and warm inner apartments in winter.

In the cold season, one should have vehicles, beds and seats well covered, and seats with thick quilts and deer skin or tiger skin, silk sheets, gunny cloth sheets or with variegated blankets.

When winter begins, one should always wear warm and thick clothing and should have one's body anointed with thick paste of eagle-wood. Lying in bed with a plump and passionate woman of broad and well-filled breasts, who has anointed herself with the paste of eagle-wood, one should, warmed up by aphrodisiac wines, spend the night in her embraces. In the season of winter, one may indeed indulge in sexual enjoyment to one's heart's content.

On the advent of the cold season, one should give up eatables and drinks that are light and provocative of Vata, and should avoid draughts, restricted diet and diluted demulcent drinks.

Winter and the dewy season are similar in nature; yet there is a slight distinguishing characteristic in the dewy season, namely, the dryness born of the sun's absorbing period and the cold born of clouds, wind and rain.

Therefore, the entire regimen prescribed in winter is to be observed in the dewy season as well. In fact, the rule as to residence in draughtless and warm apartments is to be observed even more stringently in the dewy season. One should avoid eatables and drinks that are pungent, bitter, astringent, provocative of Vata, light and cold.

SPRING

The accumulated Kapha getting liquefied by the hot rays of the sun in the spring, affects the body-heat and thus gives rise to many diseases.

Therefore, in the spring, purificatory procedures such as emesis, etc. should be performed and one should avoid heavy, acid, unctuous and sweet articles, as also day sleep.

On the advent of the spring, one should resort to physical exercises, dry massage, smoking, gargles, collyrium and frequent ablutions with genially warm water.

One should anoint one's body with sandalwood paste, eat a meal prepared of barley or wheat, flesh of wapiti, rabbit, Indian antelope, grey quail and grey partridge.

One should drink wholesome seedhu or honey wine and enjoy the youthful loveliness of women and the woods. •

SUMMER

In summer, the sun drinks up the unctuous element of the earth. During this season, therefore, foods and drinks that are sweet, cool, liquid and unctuous are conducive to health.

By recourse to a diet of cold demulcent drinks mixed with sugar, the flesh of animals and birds of the jangala group, ghee, milk and sali rice, one escapes the enervating effects of the season.

Little or no wine should be drunk or it should be drunk diluted liberally with water. One should, further, give up foods that are salty, sour, pungent and hot, as also exercise.

Smearing oneself with sandal paste, one should court sleep by day in the cool apartment of the house, and, by night, on the terrace cooled by the rays of the moon and open to the breezes.

Adorned with pearls and gems, one should seek the couch, being ministered to by the waving of fans and by the caresses of tender hands which are cool with sandal water.

In the summer season, one should abstain from sexual intercourse, and seek the coolness of the woods, waters and flowers.

RAINS

In the body that has been impoverished by the effects of the sun during his period of absorption, the digestive power too grows weak. On the advent of the rainy season, the digestive power readily succumbs to the morbid effects of Vata and other constitutions.

The constitutions in their turn, finding the strength of the gastric fire weakened, get provoked aided by the effects of moist-hot exhalations from the earth, the precipitation of the rains and the tendency to acidity in water that occurs in the rainy season. Accordingly, the general rule that is laid down for the rainy season is moderation.

One should, in particular, avoid watery demulcent drink, day-sleep, frosts, river-water, exercise, sun and sexual intercourse during this season. One should, as a rule, take foods and drinks that are well seasoned, in combination with honey.

On very cold days marked by stormy winds and rain, one should even in the rainy season, take unctuous articles with pronounced acid and salt tastes, for the sake of alleviating Vata.

Taking care to preserve one's gastric fire, one should take old barley, wheat and sali rice together with the flesh and well-seasoned soups of the jangala group of animals.

One should drink, mixed with honey, a small measure of decocted honey-wine or rain water, well-water or lake-water that has been boiled and cooled.

In the rains, one should have recourse to friction-massage, dry massage, bathing, wearing of perfumes and garlands, light and clean habiliments, residing in the rain-house i.e. house designed for residing in the rains free from damp.

AUTUMN

When the body which has become habituated to the cold of the rains, is suddenly heated by the rays of the sun in the autumn, the accumulated Pitta in the body is generally provoked.

In this season one should partake of eats and drinks that are sweet, light, cooling, slightly bitter, and curative of Pitta, in due dose and when really hungry.

In the beginning of the autumn, one should take the flesh of grey quail, grey partridge, black buck, wild sheep, vapiti and hare, sali rice, barley and wheat.

When the rain clouds have disappeared, one should resort to a potion of ghee medicated with bitter articles, to purgation and to depletion of blood, and one should avoid exposure to the sun.

One should avoid, in this season, animal fats, oils, exposure to frosts, flesh of aquatic and wet-land animals, alkalis, curds, day-sleep and easterly winds.

Thus has been described the seasonal homologation with reference to behaviour and diet. That which becomes homologatory by habitual use is said to be 'acquired homologation'.

The knowers of the principle of homologation consider it desirable to acquire homologation regarding food and behaviour to things which are antagonistic to the characteristics of the country and the causative factors of the diseases prevalent there.

In ancient times teeth were cleaned by a green tooth twig which was crushed at the proximal end and which was of an astringent, pungent or bitter taste, and it has been suggested that the teeth should be cleaned twice a day in such a manner that the gums are not injured. Teeth cleansing dispels oral fetor and dysgeusia, removes the impurities of the tongue, teeth and mouth and promptly induces appetite.

The tongue scraper should be without a sharp edge, curved and made of gold, silver, copper, tin or brass. The coating which accumulates at the root of the tongue and obstructs the respiratory passage is the cause of fetor oris. Therefore the tongue should be properly scraped and cleaned daily. It was said that one who is desirous of obtaining cleanliness, relish and fragrance of breath should keep in mouth nutmeg, musk mallow, betel nut, cloves, cubeb pepper, fresh betel leaves, camphor, small cardamom.

Various oil gargles give strength to the jaws and voice, excellent plumpness to the face, fine sensitiveness to the palate and keen appetite and these were also recommended. It was further said that one using these gargles does not suffer from dryness of the throat nor from the lips getting chaffed. One's teeth become firmly rooted

and do not ache nor are they set on edge by acidity but are enabled to chew even the hardest of eatables.

Hair oils of different types have also been prescribed and the formulæ have been given. These hair oils if used daily give the benefits of person not getting headache, baldness and grey hair nor does his hair fall off. By using these hair oils daily, the strength of a person's cranial bones is greatly increased and his hair becomes firmly rooted, flowing and very black. By an oil shampoo of the head the sense organs are toned up and the skin of the face becomes beautiful and the person gets good sleep and feels happy.

Similarly oil wash, massage over the body and pouring of oil in the ear were recommended. This subsides the Vata Dosha if aggravated and it keeps the Vata Dosha in normal order. Because Vata is the predominant element in the sense of touch and the sense of touch resides in the skin, massage is the greatest dermic tonic and therefore a person ought to practise it daily.

Pedal inunction removes roughness, stiffness, dryness and numbness of feet, and comeliness, strength, firmness of legs and brightness of the eyes are achieved and the Vata disorder is quieted thereby. Massaging of the body removes body feter, heaviness, torpor, itching, dirt, inappetence and offensive sweat.

Again, emphasis was laid on regular bathing and clean clothing, saying that "taking bath is purifying, promotive of vitality and longevity, removing the fatigue, sweat and dirt, conducive to body strength and is vitalising in the highest degree. Wearing of clean clothes is attractive, conducive to reputation, promotive of longevity, avertive of bad luck, exhilarative, decorative, worthy of society and commendable.

The use of fragrant articles and garlands is said to be promotive of virility, disseminative of fragrance, promotive of longevity, conducive to plumpness and strength, promotive of good cheer and avertive of bad luck.

The wearing of jewels and ornaments brings prosperity and is auspicious, promotive of longevity, dispersive of worries, exhilarative, attractive and vitalising. Frequent ablution of the feet and the excretal orifices is promotive of intelligence, purifying, promotive of longevity and a dispeller of misfortune and sin. Trimming and dressing the hair, beard, nails etc. is promotive of plumpness, virility and longevity and is clean and enhances one's good looks.

The virtues of wearing shoes, carrying an umbrella or the staff etc. are laid down in the texts. It is said that one should have recourse to such means of livelihood as are not contrary to the dictates of religion and should be devoted to peace and studies. Living thus one attains happiness.

Thus the question of measure in food, articles of food, the determination of measure with reference to heavy and light articles whose habitual use was recommended, pouring oil into ears, inunction, anointing the feet, body massage, bathing, wearing clean clothes, using perfumes, ornaments etc. — all were appreciated.

It will be noted from the above citations from the texts that the Ayurvedists attached great importance to personal cleanliness and maintenance of normal personal hygiene. As we will see in the chapters on Public Hygiene described in Ayurveda, great care was taken that the public health in general was maintained. The general rules regarding diet, clothing, bathing, massaging, daily normal practices, getting up early in the morning and going to bed at proper time, were also laid down. This whole portion was known as *Dinacharya*, meaning the daily day practices. Again, there is a chapter on *Ratricharya*, in which the benefits of normal sleep are described. The causes leading to sound sleep have been mentioned and the causes of insomnia have also been described and the treatment for the latter is further indicated. The problems of married life are also discussed in this chapter. Normal healthy intercourse and the rules for the same have been laid down. So this portion treats the problems pertaining to sexual hygiene. It is said that sexology has made big advances nowadays but if one carefully goes through the ancient texts written on sexology one would be surprised about the accurate knowledge of the ancestors. However, Ayurveda has only dealt with the general rules but in ancient times separate treatises were written on sexual hygiene. These treatises are *Kama Sutra*, *Ananga Ranga*, *Pancha Sayaka*, *Kelikutuhalam*, *Kama Kalpa* etc.

While on the subject of personal hygiene it seems to us important to bring to the notice of our readers various diseases which are caused by suppression of natural urges. By neglect or by exigencies of certain situations, natural urges are often restrained by many people without, of course, realising the dangers involved.

The diseases brought about by suppressing the urges of urine, faeces, semen, flatus, vomiting, sneezing, eructation, yawning, hunger, thirst, tears, sleep and deep breathing after exertion are given below :

Suppression of URINE causes pain in the region of the bladder and the genitals, dysuria, headache, flexure of the body and distension of the lower abdomen; suppression of FAECES: intestinal colic, headache, retention of flatus and faeces, cramps in calf-muscles and distension of abdomen; suppression of SEMEN: pain in the phallus and testes, body-ache, cardiac pain and retention of urine; suppression of FLATUS: retention of faeces, urine and of flatus,

distension of abdomen, pain, exhaustion and other abdominal disorders caused by Vata ; suppression of vomiting, pruritus, wheals, anorexia, freckles, anaemia, fever, dermatosis, nausea and acute spreading affections ; suppression of sneezing, stiffness of the neck, headache, facial paralysis, hemicranis and asthenia of the sense organs ; suppression of eructation, hiccup, dyspnea, anorexia, tremor and hindrance to the functions of the heart and the lungs ; suppression of yawning, flexures of the body, spasm, contractions, numbness, tremor and shaking ; suppression of hunger, emaciation, weakness, discolouration, body-ache, anorexia and giddiness ; suppression of thirst, parching of the throat and the mouth, deafness, fatigue, depression and cardiac pain ; suppression of tears, coryza, eye-diseases, cardiac disorders, anorexia and giddiness ; suppression of sleep, yawning, body-ache, torpor, disease of the head and heaviness of the eyes ; suppression of deep breathing, gulma, cardiac disorder and stupefaction.

Although remedies for the foregoing ailments have been described, the Ayurvedists have condemned suppression of natural urges. At the same time they have shown where there ought to be restraint.

Overindulgence in physical exercise, laughter, speaking, walking, sex act and waking at night even if one is accustomed to such practices are also injurious to the body.

People are asked to cultivate wholesome habits, by gradually withdrawing from unwholesome ones. In this manner, it is pointed out, addictions do not revert and wholesome habits, gradually acquired, take firm roots.

Man has also been asked to be moral and absolutely honest in his dealings, whether he be a businessman or a servant. Strict advice was given to fulfil the moral duties. The following quotations will make the subject clearer :

Charaka says " That is named as the sacred science of life wherein are laid down the good and the bad of life, the happy and the unhappy life, what is wholesome and what is unwholesome in relation to life as also the measure of life. The life of that man is said to be good who is a well-wisher of all creatures, who does not covet other people's goods, who is a speaker of the truth, who loves peace, who acts with deliberation, who is not negligent, who is devoted to all the three things viz. virtues, wealth and enjoyment, without letting any one of these come into conflict with the other two, who is reverential to those who are worthy of reverence, of a scholarly, scientific and revered disposition ; partial to the company of elders, devoid of grief, passions and desires, anger, envy, pride and conceit ; constantly given to charitable acts, devoted always to austerity,

knowledge and quietude, endowed with spiritual insight, single-mindedness, contemplative of the good in this world and endowed with memory and understanding. That life which is opposite to Nature is said to be not good."

Now, the life of such a man is called happy as he is not afflicted with either physical or mental diseases and he is endowed with youth, strength, vitality, reputation, enterprise, frankness and possessed of multifarious and delightful amenities accruing from the good life and his efforts are fruitful and he can plan as he likes. A life that is contrary to this is called unhappy.

Ayurveda has emphasised the importance of Sadvritta or the observance of good morals as they give man physical, mental, moral, social and spiritual health. As Ayurveda is a branch of the Vedas or sacred knowledge, naturally this connection with the Vedas or the sacred knowledge imparts to Ayurveda the necessary basic knowledge derived from those sacred texts. Some of the principles of such moral hygiene are as follows: "Perpetual compassion, renunciation, control of one's actions, speech and mind, and dedication of one's knowledge and wisdom for the good and beneficence of others. This comprises the whole of Sadvritta" (Ast. Hrd. Sut. Ch. 2).

"The wise man should control the impulses of grief, fear, anger, vanity, impudence, jealousy, excessive attachment and malice. One should control the impulses of all such activities of the body as are injurious to others, as for example, adultery, theft and inflicting pain on others etc." (Char. Sut. 7).

He who sees himself in all the world and all the world in himself, the peace of that man, surveyor of this world and yonder, being rooted in knowledge, does not perish. Ayurveda believes that Sadavritta makes a man sober, noble and upright. These give him relief from the psychic and nervous disorders.

There are many other principles discussed in texts which ultimately mean good behaviour so that a man does not indulge in objectionable practices which result in unhappiness, quarrels, misery etc. Naturally, if the principles of personal hygiene are carried out, it will lead a man to a happier life as he would be free from the diseases resulting from the negligence of such practices and he will be able to live long.

Charaka, in Vimana Sthana, chapter 3, compares our body to the cart and it has been stated that a well-kept cart will last for a long time. Similarly our body should also be well kept. The average human being today is suffering from stress and if we go into the detailed reasons of this strain we will find that man is not keeping his

body and mind properly. Dr. Hans Selye has written a work on stress which shows how this has become a modern malady.

It is said that the "Government can provide a house for you but they can never make a home for you". Similarly medical science can give general rules for the average man but the practical observance is the responsibility of the individual. We are advancing much in the matter of public health but very poor attention is paid to personal hygiene. Nowadays a man takes much care to keep his car in proper order. He gets it serviced regularly, he sees to it that the petrol he puts in the car is free of all dust and dirty material, he would not like to drive the car on rough roads lest it should destroy the shock absorber, he gets the engine checked up regularly and from time to time has it overhauled. Regular cleaning, washing and polishing also go on. But unfortunately the person who takes such keen interest in the upkeep of his car has hardly the time to have a look at his own machine, the body. Our body is a remarkable machine, so delicate, complicated and minute and governed by nature that man should not adopt an unnatural way of living which will put his physique out of gear.

It is true that the experts laid down the rules according to their times but we can practise such rules even today keeping in view the Ayurvedic principles of Tridoshas, seven body constituents and the three body secretions and remain healthy.

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MODE OF NOURISHMENT

THE Tridoshas (three physical principles), Sapta Dhatus (seven body nutrients) and Malas (body secretions) are fundamental factors which go to make up the constitution of the body. These in combination maintain and sustain the body.

The Rasa Dhatu is nourished by the food juice (Ahara Rasa); the Rakta Dhatu (the blood constituent) is nourished by the finest essential part of Rasa; the Mamsa Dhatu (body flesh) is nourished by the finest essential part of the Rakta Dhatu; the Meda (fat constituent) is nourished by the finest essential part of the Mamsa Dhatu; the Asthi (bone constituent) is nourished by the finest essential part of Meda; the Majja Dhatu is nourished by the finest essential part of the Asthi Dhatu; and Shukra Dhatu (semen constituent) is nourished by the finest essential part of the Majja Dhatu; Ojas (the vital essence) is nourished by the finest essential part of Shukra Dhatu.

Several analogical hypotheses have been suggested to explain the general process by which the seven Dhatus are produced or nourished and we will explain three of these:

(1) Milk and Curd Analogy, according to which the whole Rasa Dhatu is turned into blood by the process of digestion. The blood is then turned into flesh as a whole, and so on just as milk as a whole is turned into curd (and not in parts) and curd is turned into butter as a whole and similarly whole butter into ghee.

Commentators on the texts accept the analogy in part, saying that the various steps as given of the process from Rasa to Rakta and Rakta to Mamsa etc. may be accepted but the view that the whole food juice turns into whole blood and whole blood into flesh is not acceptable. (This is known as Kshira-Dadhi-Nyaya).

(2) Pigeons-in-the-Snare Analogy. Those who use this comparison bring out the nature of the process by asserting that the food juice has to go to the different constituents by different channels and nourish them by its own nourishing qualities. Just as pigeons of different places coming by different routes fall into the same snare at different times, so the food juice goes to the different constituents by different channels at different times. The Rasa Dhatu is the nearest. The food juice nourishes it first. The blood, flesh and other constituents are respectively situated deeper and deeper in the body

and hence the food juice has to reach them by longer and longer routes thus taking longer and still longer time, nourishing the Shukra Dhatu last of all. This analogy is given importance by commentators, saying that the food juice or Rasa Dhatu is the Chief ingredient nourishing all the seven body constituents (This is known as Khale-Kapot-Nyaya).

(3) Irrigation Channel System. According to this approach, the Rasa Dhatu first goes to Rakta Dhatu and on being associated with the latter, nourishes it by qualities similar to blood. After supplying the blood with its necessary requirements, the Rasa goes to the Mamsa Dhatu and nourishes it in the same manner. After supplying the Mamsa Dhatu with its necessary requirements, the Rasa goes to the Meda Dhatu similarly nourishing it; and so on. Accordingly just as a stream of water goes to successive fields flooding one field after another through the intervening channel between fields, so also the same Rasa goes to the successive Dhatus and nourishes them one by one. (This is Kedar-Kaulya-Nyaya). This is the most acceptable theory. Chakradatta and Shiva Dasa also preferred it to explain the process of nourishment of the body.

In the body formation at conception, Vayu, Pitta and Kapha (the three somatic principles) take part while the combination of spermatozoon and ovum combines with the soul to make a foetus. Vayu, Pitta and Kapha go on increasing and developing by the food juice received from the food of the mother in the womb and after birth the nourishment of Vayu, Pitta and Kapha goes on from the milk and the mixed food taken throughout life. This food, as we have stated before, also consists of five basic factors, earth, water, fire, ether and air.

We have already referred to the local natural digestion in stomach, duodenum and large intestine known as Madhura, Amla and Katu respectively producing Kapha, Pitta and Vayu. This production of Kapha, Pitta and Vayu also nourishes the original Kapha, Pitta and Vayu constituents of the body, and thus it will be seen that the Tridoshas which are the somatic principles and maintainers of health are also regularly nourished. In addition, the outside air that we breathe is mixed up directly with the Prana and the Udana Vayu within the body and also nourishes all other Vayus.

The fresh and clear Pitta that is secreted in the duodenum during the second stage of digestion directly nourishes the Pachaka Pitta. It is the Pachaka Pitta action which from its own seat at the duodenum nourishes all the other Pittas by its own heat. Pitta is produced during the digestion of the blood as Mala (waste product).

Whenever this Pitta is produced it nourishes the original Pitta of that place.

After the general digestion of food, the food juice is again digested by its own Agni known as Rasa Agni and turned into the final state known as "Rasa Dhatu". It is again divided into three parts. The finest part goes to the nourishment of the next body constituent known as blood or Rakta Dhatu. The usual part of Rasa nourishes its own constituent known as Rasa Dhatu. The third part is the by-product known as Kapha Mala. It will thus be seen that Kapha is produced twice, once when the local sweet digestion in the stomach takes place with the digestion of the food and secondly, when the Rasa Dhatu is digested.

Similarly the Rakta Dhatu or the blood constituent of the body is also divided into three parts. The finest part proceeds to the production of the next body constituent known as Mamsa Dhatu. The usual part of Rakta or blood nourishes its own similar constituent blood in the body and the by-product is Pitta. Thus it will be seen that Pitta is also produced twice in the body, once while the second local digestive action takes place when the food digestion is going on in the duodenum and the other when the blood is digested by its own Agni before the formation of Rakta Dhatu and when Pitta is produced as a by-product.

In this way each of the seven Dhatus of the body has got its own separate Agni or digestive capacity and hence from the food juice the digestion of each of the seven body constituents goes on. The word "Agni" when applied to Dhatu, meaning the Agni of the Dhatu is known as Dhatu Agni. So there are seven Dhatu Agnis. Moreover, the food juice also contains five types of important and necessary materials such as earth, water, fire, ether and air. After getting digested by fire the separate Agni of the digestive capacity is assimilated and proceeds to nourish this fire as residual constituent of the body.

It will be remembered that when the body formation took place in the womb, the Tridoshas with spermatozoon and ovum in the presence of the soul gave rise to the foetus and the five basic factors in the body from birth onwards are nourished till the end by the five basic factors contained in the food and these five basic factors of the food after getting digested from the food juice by their own Agnis proceed to nourish the five basic factors of the body.

But the main Agni of the digestive secretion is Pachaka Pitta which is located in the duodenum and which digests the food and seven Dhatu Agnis as well as the five Bhuta Agnis. Thus thirteen Agnis have been believed to be in the blood to carry out the process of digestion of food, seven Dhatus and five Bhutas.

These Agnis again have got four states according to their capacity. The first state is known as Manda (slow); this is due to Kapha preponderance. The second is known as Tikshana (acute); this is due to Pitta predominance. The third state is Vishama (unsteady); this is due to Vata preponderance. The fourth state is Sama (normal); this is due to the normal proportions of all the Doshas.

Pitta has a physical property known as Tikshana, meaning acute activity, and hence when it is in excess or prominent, then the action of Agni will also be acute. Kapha has got Manda property, meaning slow, and when in excess or normal will give rise to such action, resulting in Manda Agni. Vayu is flexible. Sometimes when coupled with Pitta it gives rise to acute Agni and when with Kapha, to slow Agni or appetite, thus causing variation in the appetite. It will be remembered that in the description of the body constitution of Kapha, Pitta and Vata respectively we have shown that the foods also have similar effects, i.e. make the general activity less, more and varied respectively.

The four states of Agni give rise to four types of the digestive system, viz. harder, milder, medium and Sama, according to the predominance of Vata, Pitta and Kapha, and normality of the Doshas. When the cleansing of a particular type of system by evacuation is needed, in the Vata type a strong purgative will have to be given; in the Pitta type the mildest purgative will have strong action; and in the Kapha type the medium action purgative will have to be given.

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CHAPTER NINE

DIET

“ Not on emerald but on cookery let us build our empire.”

— *Carmichael.*

“ If the diet is pure the mind will be pure and if the mind is pure the intellect also will be pure.”

— *Manu.*

Says Bacon: “ Diet well ordered bears the greatest part in the prolongation of life.”

In the ancient compendia of Charaka, Sushruta, Vagbhata, etc. there are separate chapters devoted to the various articles of food and drinks and their effect on the body. The observations contained therein are based on the Rasas, Veeryas, Vipakas, Prabhavas and Gunas (we have referred to these terms in subsequent chapters) of the items, and not in the light of their protein, fat, carbohydrate or starch content. Another significant factor is that both vegetarian and non-vegetarian foods have been taken into consideration. There is a chapter on the virtues of mutton and meat of various animals — and that also according to Desha such as aquatic animals, jangala (mountainous places) animals, etc. Obviously they had borne in mind that a physician would be called upon to treat persons of every race, community and place without drawing a distinction between vegetarians and non-vegetarians although he may himself be a staunch vegetarian. They must also have had in view conditions like consumption, phthisis and tuberculosis where nourishment of *mamsa dhatu* or flesh is to be made up by the use of various items of food belonging to the vegetable and animal kingdoms. Here we cannot afford to give all the details as described in the texts and we shall satisfy ourselves with a brief account.

To start with, Charaka says: “ Water moistens, salt liquefies, alkali digests and honey synthesizes, ghee causes unctuousness, milk gives life, flesh causes roborance, meat-juice nourishes, wine causes senile degeneration, grape-wine stimulates digestion, treacle causes accumulation of morbid doshas, curds cause edema and green *pin-yaka* causes depression. The soup of black gram increases fecal matter. The alkalis are injurious to vision and semen, all substances of acid taste except pomegranate and the emblic myrobalan are mostly pitta promoters. All substances of sweet taste, except honey, old sali rice, Sastika rice, barley and wheat are generally Kapha

promoters. All substances of bitter taste except the sprout of country willow, guduchi and the wild snake-gourd and all substances of pungent taste, except long pepper and ginger, are Vata stimulants and anaphrodisiac."

According to Charaka, systematic diet supports life. He, however, says that the experts hold that articles of food and drink which are of a pleasing colour, smell, taste and touch taken systematically constitute the life of all the living beings known also as creatures.

We now give the properties of the various important items, according to the Ayurvedic principles.

DHANYA (Cereals and Pulses)

WHEAT — It is sweet, cold, post-digestive action sweet, nutritive, tonic, nourishing and is considered as the "king of cereals" by Ayurvedists. All the texts acknowledge the high nourishment value of wheat to the body. There are many varieties of wheat and all of them are not of equal value but it goes without saying that wheat forms a principal item of diet. Many are the preparations made from the powder of wheat and they have got a specific nourishing value. They increase all the Dhatus. Wheat is termed Balya, Brinhan, roborant, Shukravardhan and Jeevanam by virtue of its dietary values.

In India wheat is used more in the upper and middle parts of the country while in the South and in the East rice is the principal item of diet. Our humble opinion is that both wheat and rice make suitable diet. It is a wrong notion that rice causes gas and increases obesity because people in the South are mainly rice-eaters but we do not find them obese and fat. At the same time, if we take both rice and wheat in excess it will definitely prove a bigger burden on the digestive system.

CHAWAL (Rice) — There are so many varieties described — red rice, big rice, Kalama, Sastika, and so on. The good varieties of rice are cooling, sweet in taste and post-digestion effect slightly Vata-stimulant and form condensed and scanty stools. They are unctuous, roborant, seminiferous and diuretic. The red rice is the best of them. It is adiposous and curative of tridiscordance. The next best is the big rice and next to it is the Kalama, and so on. Sastika rice is cooling, unctuous, not heavy, sweet, curative of tridiscordance and stabilising. The white variety is the best of Sastika rice and the dark-white comes next in order.

UDADA (Black Gram) — is an excellent aphrodisiac, curative of Vata, unctuous, hot, sweet, heavy, strengthening; it increases fecal matter and quickly imparts virility.

MUNGA (Green Gram) — is considered the best of pulses. It is astringent-sweet in taste, dry, cooling, pungent on digestion, light, limpid and curative of Kapha and Pitta.

BAJARI (Millet) — hot, dry, aggravates Pitta but at the same time a very good tonic, gives strength, increases complexion, is one of the good nutrient diets.

CONDIMENTS

JEERAKA (Cumin seeds) — light, dry, Rasa pungent, Veerya hot, Vipaka pungent. It subsides Kapha and Vata and increases Pitta. It reduces swelling and is anodyne. It is an appetizer, digestive, carminative, subsides pain, astringent and kills worms. It is a stimulant and blood purifier; at the same time it is diuretic. It is especially useful to remove swelling of the uterus and it increases the milk in the breast. Being hot it is a rejuvenator and also useful in skin disorders. It is a good diuretic and is especially used in diseases of Kapha and Vata.

BLACK PEPPER — digestive, appetizer, Vayu and Kaphahara, at the same time increases Pitta. Light, Rasa pungent, Veerya hot and Vipaka pungent. Post-digestive action pungent. Black pepper is heavy, not so hot, and sweet in post-digestive action. This is one of the most important ingredients of condiments and has been used in Ayurvedic drugs. Plenty of references are available in the ancient texts about the usage of black pepper. The three most efficacious drugs, Sunthi (ginger), Maricha (black pepper) and Pepper form the trio known as Trikatu. Those suffering from chronic cold and constipation due to very poor gastric fire and improper digestion should use black pepper properly and it will improve their digestion and stop the formation of Kapha. It is a stimulant, expectorant, diuretic and in small doses it is Katu paushatic. Usually, black pepper suits Vata and Kapha prakriti people more.

SUNTHI (Ginger) — dry and fresh ginger, Rasa pungent, Veerya hot, Vipaka pungent, unctuous, light, heavy.

MUSTARD SEED — Rasa bitter, pungent, Veerya hot, Vipaka pungent. It increases Pitta and causes Rakta pitta. An appetizer, it is useful in Vayu, Kapha, worms and diseases of the throat. Its medicinal uses are plenty.

METHI (Fenugreek) — It is Vatahara and a tonic. It is hot.

HING (Asafoetida) — Rasa pungent, Veerya hot, Vipaka pungent. Light, unctuous and sara. It is useful in Kapha and Vata and it increases Pitta. It is a stimulant, anodyne, useful in colic, gastric trouble, worms, distension. It forms one of the most important ingredients of condiments in daily use. It is also one of the most

important ingredients of home remedies in rural India and sometimes very marvellous results are obtained with its timely and proper use. Nowadays there is lot of adulteration going on and only the pure *Asafoetida* should be used to obtain good results.

COTHAMIR (Coriander) — Light, unctuous, Rasas sweet, bitter, pungent and astringent; Veerya hot; Vipaka sweet. Usually it subsides all the Tridoshas; being unctuous and hot it subsides Vata; being astringent, bitter and sweet it subsides Pitta; and being bitter, pungent and hot it subsides Kapha. Green and fresh coriander being *Shita* (cold) specially subsides Pitta. Dry coriander is an important ingredient of condiments. It is, again, one of the important home remedies used by rural population in India. Fresh coriander subsides burning sensation. It is diuretic, Kaphaghna, digestive, astringent, appetizer. Coriander is usually used with cumin seeds.

RED CHILLIES — A powerful local irritant, stomachic and tonic. It has a pungent odour and sharp burning taste. It forms one of the ingredients of various curries, chutneys and pickles. It is hot, pungent in post-digestive action, stimulant, appetizer, increases Pitta and removes dyspepsia. Useful in Kapha Doshā. It is not good for one who is very hot-tempered and one who is suffering from haematemesis and haemoptysis.

TURMERIC — Dry, light, Rasa pungent, Veerya hot, Vipaka pungent. Being hot it subsides Kapha and Vata and being bitter it subsides Pitta. It has many internal and external applications in medicine. It is anodyne, appetizer, carminative, vermicide. It improves complexion and glow. It is Kaphahara. It is very good for troublesome uterus and being bitter it purifies breast-milk.

GARLIC — Unctuous, pungent, pichhila, heavy and sara. It contains all the five Rasas (except Amla or sour), the chief of which are pungent and sweet. Its root is pungent, leaves bitter, stem astringent, seeds sweet; Vipaka pungent, Veerya hot. Being very pungent and bitter it subsides Kapha, being unctuous and pichhila, heavy and hot it subsides Vata, and being hot it increases Rakta and Pitta. It is a stimulant, anodyne, digestive, appetizer, carminative, vermicide. It is diuretic also, it is expectorant, useful for the throat. It is used in many remedies and especially is a rejuvenator. Garlic should not be given to pregnant women and to those suffering from haematemesis, haemoptysis, diarrhoea, urinary troubles and to those who have got swelling and vomiting. After the use of garlic, exercise, sweet food, milk, gur, heat, sunlight, water, etc. should be avoided. Garlic is also used in indigenous medicines with success and is one of the chief remedies.

KOKUM (Mangosteen) — Sour, astringent and dry, hot, pungent, digestive, increases appetite, causes Pitta. Oil prepared from

the seed of mangosteen is effective in eczema and athlete's foot which it cures.

DALCHINI (Cinnamon) — pungent, sweet, light, dry, bitter, hot, causes Pitta, purifies throat, Kaphahara. Useful in hiccup, Vayu, cough, sinusitis, piles and worms. It is anodyne, analgesic. It is used in the manufacture of many tooth powders and it is also one of the important condiments. Taken correctly and regularly it keeps the mouth fresh and destroys foul smell. It is useful for teeth also. Its oil poured into the dental cavity relieves pain.

ALCHI (Lesser Cardamom) — Light, dry, Rasa sweet and pungent, Veerya cold, Vipaka sweet. Subsides all the Tridoshas. Due to the Rasas it subsides Kapha, due to the Vipaka it subsides Vata and due to the Veerya it subsides Pitta. It is good for the heart, expectorant, diuretic and subsides burning sensation. It is a tonic used in so many aphrodisiacs. Useful in vomiting, it removes cough and is an important ingredient in cough remedies.

LAVANGA (Cloves) — bitter, appetizer, pungent, hot, Vipaka sweet, rejuvenator, subsides Vayu, Pitta and Kapha. Useful in consumption, cough, colic, asthma, hiccup, impurities of blood and distension. Oil of clove is also applied to dental cavities to relieve pain. It has many external and internal medicinal uses.

PHUDINA (Mint) — sweet, heavy, appetizer, good for the heart, usually given in cough disorder, cholera, sprue, diarrhoea, chronic fever and worms. It is used in many ayurvedic drugs where a stimulant effect is needed. Especially it is prescribed in abdominal colic. Distilled water of mint is given in gastric trouble and it is one of the most important ingredients of digestive powder.

IMLI (Tamarind) — heavy, Veerya hot, Vipaka sour. Its fruit, seed, leaves, flowers are all used in medicine. Used in the preparation of curry to add sour taste to the dish. When unripe it is excessively sour, it subsides Vata and increases Kapha and Pitta but when ripe due to hot and dry action it subsides Kapha and due to Shita and sour action subsides Vata. Sweet tamarind subsides Pitta also. It is an appetizer, satisfies thirst, digestive, stimulant to the liver, good for the heart. It is diuretic. Powder of the seed given with milk has an aphrodisiac effect. It is good where retention of semen is desired but otherwise excessive use of tamarind leads to dyspepsia.

KESHAR (Saffron) — aromatic, bitter, unctuous, improves complexion. Used in disorders of eyes, Vayu, Kapha, vomiting sensation, worms, hiccup. It is a stimulant and is used in drugs which are aphrodisiac and rejuvenators. Boiled with milk a special preparation *Dudhapaka* is prepared in India which is sweet, nutritious, palatable, delicious and subsides Pitta and Vata, increases Kapha.

It is a rejuvenator. The pure quality is hardly available. After giving artificial colour and soaking it is used in drugs which are efficacious for cold, cough and diarrhoea. Used internally as well as externally.

DRINKS

MILK — in general is nutrient, nourishing, demulcent, tridiscordant, tonic and appetizer. Cow's milk is so good that it is considered to be sacred. It is light, astringent, sweet, cold, forms stools. It is a rejuvenator, nourishing and a general tonic suitable to all. It promotes longevity of life and subsides the elements of Rakta and Pitta. It is very good for heart disease and removes poison. It is useful for patients of consumption and phthisis. It may be given in coughing, fever as well as diarrhoea with discharge of blood. It subsides all the Tridoshas.

Milk of buffalo is unctuous, cold, causes wind, sleep and heaviness. It produces semen, removes fatigue, increases strength, also produces cough, even though it is a life-giver.

Mother's milk for a child is a life-giver, nourishes the seven body constituents and is a tonic. It removes eye disorders, subsides Rasa and Pitta and brings unctuousness in body. It is said that mother's milk is the best for a new-born infant and if it is not available, then Dhatri, (wet nurse's milk) should be provided. In its absence goat's milk will be the best and the next best will be cow's milk. Cow's or goat's milk should be well boiled and purified. Buffalo's milk is usually found to be too heavy for infants, so it must be diluted and made light with an equal quantity of water. It may be used in conjunction with Vayavidanga (*embelia rivus* or *anbrolia*) which is light and appetising. It is carminative, pungent in post-digestive action and subsides Kapha and Vayu and is very useful for children as it prevents the formation of worms. It has thus become a practice in India to put a few *anbrolia* in milk and water, boil it and then feed the child. A mother feeding a child with breast-milk should take care to avoid pungent, sour, salty, acid, and alkali diet so that the breast-milk which is prepared from the Rasa dhatu of her own self does not prove harmful to the child.

Milk excreted by the cow or other animals in the morning is very cold as they have no exercise during the night. Such milk will produce sleep and fatigue. It is thick and produces Kapha, while milk obtained in the evening, when the animals have had enough exercise, subsides Kapha and Vayu. It is also good for Pitta and should be taken after dinner. Goat's milk, however, is very good in the morning as it subsides Vata and Pitta.

Milk is very good for those who are emaciated, weak or have suffered from chronic fever, those whose gastric fire is strong, who

are not feeling fatigue and who are suffering from consumption. Milk should not be taken with salt or sour things as it will then produce skin disorders, even leprosy.

CURD prepared from cow's milk is unctuous, sour, sweet, astringent, heavy, hot, subsides Vata, increases flesh, semen, appetite, strength and Kapha, at the same time aggravating rakta and Pitta and producing edema. Its post-digestive action is sweet.

Curd prepared from goat's milk is hot, very useful in Vayu and consumption, piles, asthma and cough. It increases gastric fire and is sweet. It is a tonic; it subsides rakta and Pitta.

Curd prepared from buffalo's milk is heavy, thick, sweet, produces diseases of blood disorder, increases Kapha and inflammation in the body.

It will be interesting to note that the virtues of curd have been mentioned seasonwise. Curd must be avoided during Sharada, Grishma and Vasantha seasons because then it aggravates Vataja and other Doshas. Moreover, curd should not be taken at dinner or at bed-time and it is advised that curd should be taken along with ghee and sugar. Especially those who are suffering from fever, haemoptysis and leprosy should avoid curd. Patients suffering from hiccup, enlargement of the spleen, diarrhoea, dysentery etc. should take curd with salt.

BUTTER-MILK prepared from cow's milk subsides all the Tridoshas and it is the best stable diet. It increases appetite, gives a tonic effect and is best for the heart. Persons suffering from piles and gastric trouble can take it without hesitation.

Butter-milk prepared from buffalo's milk causes Kapha, is thick and increases swelling. It is good for those suffering from enlargement of the spleen, piles, dysentery, sprue and diarrhoea.

Butter-milk prepared from goat's milk is very light, yet unctuous and it subsides all the Tridoshas. Moreover, it is very beneficial for persons suffering from abdominal tumour, piles, dysentery, abdominal pain and anaemia.

Butter-milk of three types is described (1) where after churning all the butter has been taken out, (2) where only half the butter has been removed, and (3) where no butter has been taken out. Though all these are light and suitable and subside the Tridoshas, the first type is the least nutritious, the third being the best. But it should be remembered that butter-milk from which butter is not removed is heavy, thick and causes Kapha. It is only useful to those who are emaciated in body.

We would like to make it clear to readers that Ayurveda has described the virtues of butter-milk in detail. Proper churning,

after curd is prepared, to produce butter-milk is most essential. After digestion, butter-milk is easily assimilated. There are many varieties of butter-milk advocated in Ayurveda. In the aggravation of Vata, sour butter-milk along with salt; in the aggravation of Pitta, sweet butter-milk with sugar; and in the aggravation of Kapha, better-milk along with ginger, black pepper and black chillies are respectively beneficial.

BUTTER AND GHEE

FRESH BUTTER is astringent, tonic to the body, increases appetite and removes anorexia. Moreover, it is very much used in phthisis, consumption, loss of appetite, facial paralysis, enlargement of the spleen, sprue and piles. It is beneficial for eyes also. It is cold, unctuous, increases semen. It gives life and is a tonic. Butter derived directly from milk is cold, astringent, useful in aggravation of rakta and Pitta, removes disorders of eyes, increases memory, life, gastric fire, semen, Oja, Kapha and flesh. It furthermore removes Vata, Pitta, chronic toxicosis, mental disorders, swelling, lethargy. Ghee prepared from cow's milk is sweet, tonic, aphrodisiac, removes the aggravation of Vayu, Pitta and Kapha, is useful for the eyes, has a tonic effect, increases memory. Of all the ghee, cow's ghee is considered to be the best. Ghee prepared from goat's milk increases appetite and strength, is also useful to the eyes, and can be given to people suffering from cough, consumption, phthisis; even in post-digestive action it removes the Kapha.

GHEE prepared from buffalo's milk subsides Vayu and Pitta, is too cold, sweet, heavy, causes constipation, gives strength and is also considered useful for prolonging life. Old ghee increases gastric appetite and is prescribed in many disorders of the ear and the eye, for piles, disorders of the reproductive system, fistula, etc. Fresh ghee is useful when there is loss of strength, when the dhatus or body nutrients are emaciated as well as with diet for removing fatigue, in the aggravation of rakta and Pitta, in disorders of the eye, anaemia, consumption, phthisis.

Thus it will be seen that for various categories of milk, butter-milk, curds and ghee, indications and contra-indications have been given. Here we have given but a short account. Interested readers may refer to the chapters on diet given in Charaka Samhita and other compendia of Ayurveda. Charaka has affirmed that there is no substance in this world that cannot be used as a medicine. Accordingly the virtue of each substance as well as its usefulness to life have been given by the Ayurvedists and the reader will be surprised to know that the urine of cow, horse, camel, buffalo, men, etc.

have also been included. Nowadays, certain drugs are being extracted from urine, etc.

OILS

TIL (GINGILY OIL) — Also known as Scsamum. It is heavy, unctuous, astringent, sweet. It is Keshya (hair tonic). Being heavy, unctuous, sweet and hot it subsides Vata, Kapha and Pitta and being Yogavahi it accepts the Gunas and qualities of the drugs used along with it, retaining its own values. So many recipes are described in Ayurveda in which til oil is used as a vehicle, and especially for falling hair as well as other hair troubles til oil is considered to be the best. Its use in the winter season is very well known in India. It is used internally and externally added to foods, and for frying.

YELLOW SARSON OIL — appetizer, pungent, bitter, astringent, hot, increases Pitta and rakta. It is useful in asthma, Kapha, Vayu, worms, skin troubles, pain in ear, boils. In northern parts of India Sarson oil is used for cooking purposes just as gingily oil is used in the western parts of India. It is especially used in the formation of treacles which ultimately become tasty, palatable and can be preserved for long.

CASTOR OIL — thick, sweet, *raridu* and laxative. Subsides pain in the chest, thighs, back, etc. It removes constipation. Very useful in disorders of Vayu and especially where the upward direction of Apana Vayu causes many disorders.

HONEY

Eight types of honey are described in Ayurveda. Bees extract honey from various types of plants and trees and at various times. The virtues of the flowers of the tree from which honey is extracted also differ. Accordingly honey will differ in quality but, speaking generally, honey is the best remedy for aggravation of Kapha. It is best utilised as a vehicle for taking various sorts of drugs. Honey is Yogavahi, i.e. it gives its own effect; at the same time it enhances the effect of the drugs with which it is combined. Again, new honey and old honey have different virtues. New honey is sweet, astringent, light and cold. It increases gastric appetite and is best for Lekhana (q.v.) action in the body.

WINE

Wine of good quality and taken moderately has the following virtues. "Fresh wine is generally heavy and provocative of body-channels, digestive, stimulant, light and appetising. Wine is exhilarating, pleasant, strengthening and relieves fear, grief and fatigue. It gives

courage, virility, mental exaltation, satisfaction, plumpness and vitality." If it is taken by virtuous men in proper manner and systematically, it acts like nectar. But when taken in excess a man gets into a very bad habit. Wine of bad quality is said to spoil the liver and all other mechanism of the body and by its intoxicating action man loses his consciousness, speaks irrelevantly, becomes unpopular in society, loses morality, and such a man is to be condemned.

SUGAR-CANE

White sugar-cane is unctuous, nutrient; tonic, gives new life to a person. It is sweet, removes fatigue and cools the Pitta Dosha. Black sugar-cane is sweet, more nutrient, removes burning sensation. Juice taken out by machine is heavy, increases semen and Kapha. It is too cold and after digestion produces burning. It gives a tonic effect. It increases glow of the complexion and if taken regularly and moderately it subsides the Pitta and rakta Dosha. If sugar-cane is crushed by teeth and chewed, it increases appetite, nourishes all the dhatus and the same dhatus increase strength and Kapha, removes fatigue and ailments of rakta and Pitta, and stops vomiting and thirst. Sugar-cane juice kept in a vessel for a long time is not beneficial to drink; it becomes sour and reduces Vata; it is very heavy, causes Kapha and Pitta. It increases thirst and causes diarrhoea and dysuria.

Gur prepared from the juice of sugar-cane is a tonic, increases semen, is heavy, unctuous, destroys Vata, and purifies urine. The older the gur, the more effective it is, and it is good for tumours, boils and anorexia. This gur mixed properly with drugs and given to persons suffering from phthisis, cough, emaciation, anaemia and consumption will prove beneficial.

Gur can be given to patients of piles, jaundice, consumption, urinary disorders, abdominal tumour, anaemia and disorders of Vayu, Pitta and rakta. Gur should not be given where there is too much of coughing. Gur combined with the seeds of Tulsi (Basil) forms a very good vehicle for the administration of drugs.

The sugar prepared from Gur is sweet, white, removes Vata and Pitta, is slightly cold, increases strength as well as semen and produces appetite. Usually, sugar is effective in Doshas of Vayu and Pitta. It is cold, unctuous, strength giving, palatable, beneficial to eyes but at the same time causes Kapha.

Khadi Sakkar is too sweet, a very effective nourishment to the dhatus, increases semen, destroys Pitta, increases strength and gives a feeling of satisfaction.

FRUITS

AMRAPHALA (Mango)—when unripe it is light, dry, cold, astringent and post-digestive action is pungent, but when fruit is ripe it is sweet, cold and post-digestive action is sweet. Sweet fruit is usually used in disorders of Vayu and Pitta. Sweet fruit is tonic, nutrient, Shukravardhaka, Rasa and Rakta vardhaka. Mango is the main and chief of all the fruits. The unripe fruit is used in pickles—Achar—used in excess unripe fruit causes dyspepsia, blood impurities, constipation and all other disorders that are caused by excessive use of Amla-sour taste (q.v.). There are many varieties of Mango. The sweet fruit of ripe mango is the best tonic and taken in proper quantity restores health. If it causes gas, then taken with powder of Ginger and ghee, it will not give untoward effect.

NARANGI (Orange)—sweet, appetizer, cold, tonic, rejuvenator, increases gastric fire. Good for the hair, useful in colic, worms, dyspepsia, cough, Vayu, Pitta, consumption, anorexia, vomiting, nausea, giddiness. The orange is of two types, sweet and sour. The sweet variety is best and sour should be avoided. Syrup prepared from orange satisfies thirst and subsides burning sensation.

MUSAMBI (Citric)—sweet, cold, post-digestive action is sweet. It is the best nourishing drink during convalescence. It subsides Pitta. It is very useful in anaemia, constipation, indigestion, chronic diarrhoea, stomatitis, loss of appetite, anorexia, chronic fever, consumption, vomiting, abdominal colic and blood impurities. It is not suitable for those who get frequent attacks of cold and chill.

APPLE—sweet, mild, palatable, tonic, containing iron. It forms the stool, gives reddishness to complexion. It is a digestive and appetizer. 'An apple a day keeps the doctor away' is a well-known proverb. It subsides Pitta and Vayu. It is useful in chronic dysentery and diarrhoea. Confection of apple is given in anaemic and other allied conditions. It is very good for digestive trouble.

JAMBU (Rose-apple)—They are of two kinds, small and big, improve digestion, remove anaemia, increase blood. They are best suited to diabetic patients. Their fresh juice can be taken. A vinegar is prepared from Jambu. Powder of the seeds of Jambu is efficacious in chronic dysentery and diarrhoea, especially diarrhoea with discharge of blood. The powder given to those suffering from diabetes decreases the sugar in blood and urine.

ANANAS (Pine-apple)—when ripe is sweet, satisfies thirst and improves the body nutrient fluid, but when unripe it is heavy, causes Pitta and Kapha. It is appetising and Shramahara.

PHANAS (Jack-fruit)—cold, unctuous, gives satisfaction, increases dhatus, creates Kapha. It is a tonic, rejuvenator and heavy

in digestion. It is useful in enmaptisis. For indigestion caused by Phanas, coconut may be taken.

BANANA (Plantain) — tonic, sweet, cold, astringent, heavy, rejuvenator, aphrodisiac, shukravardha and roborant. Increases flesh, complexion and appetite. In excessive quantity, very heavy to be digested and causes Kapha. Satisfies thirst, removes moodiness, subsides Pitta, useful in blood impurities. Those who are suffering from dyspepsia, obesity as well as diabetes should not eat plantains.

CARICA PAPAYA — sweet, heavy, appetising, subsides Pitta, removes constipation and especially beneficial for liver and spleen, but taken in excess quantity causes Vayu. Papaya is a good Pachan as well as laxative. Pepsin derived from papaya is well-known for gastric disorder and trouble.

AMRUT (Guava) — sweet, digestive, cold, taken in excessive quantity it causes diarrhoea and dysentery. Seeds are harmful.

FALSA (Asiatica Grewia) — sweet, palatable, cold, astringent, subsides Vayu and Pittas, useful in impurities of blood, burning sensation, swelling, especially useful in nausea, vomiting and sunstroke and is usually taken in the summer season to subside Pitta.

RAYAN (Mimusops Hexandra) — Unctuous, sweet, delicious, nutritious, febrifuge, diuretic, Vata-samaka and when taken in excess aggravates Pitta and Kapha.

ANJIR (Fig) — palatable, sweet, cold, digestive, appetizer, useful in impurities of blood, subsides Vayu and Pitta. Useful in cough, consumption and chest troubles. Syrup prepared from Anjir is very good tonic for small children ; it increases appetite.

CHICKKU (Sapodiella plum or Sapota) — sweet, tonic, palatable, cold, sweet in post-digestive action, nutritious; being very heavy and containing excessive sweetness it does not suit those whose digestive power is weak. Diuretic.

ALMOND — It is a very good tonic, sweet, aphrodisiac, unctuous, hot, causes Kapha, subsides Vayu and Pitta, especially useful for the brain. An oil is extracted from almond by means of a machine.

PISTACHIOS — heavy, hot, unctuous, aphrodisiac, sweet, increases dhatus, purifies blood, laxative, subsides Kapha, Vayu. Used in many sweetmeats, it is also one of the most important tonics. Its oil is extracted and finds a variety of uses in the Unani system.

TOOTA (White Mulberry) — Ripe mulberry is sweet, increases and purifies blood, useful in the summer season, subsides rakta and Pitta, nutrient, satisfies thirst, efficacious for subsiding Vata and Pitta.

NASPATI (Pears) — heavy, unctuous, Rasa sweet, astringent, Vipaka sweet, Veerya cold. It subsides all the Tridoshas, good for the

heart, subsides Rasa and Pitta, good for burning sensation, tonic, roborant, diuretic; taken in excess causes distension.

SITAPHAL (Custard Apple) — light, unctuous, sweet, cold, vipaka sweet, subsides Vata and Pitta. Good for the heart, aphrodisiac, diuretic, subsides fever and burning sensation, tonic. In excessive use it causes fever.

COCONUT — sweet, heavy, unctuous, cool, beneficial to the heart, tonic, purifies the bladder, subsides aggravation of rakta and Pitta and when it is ripe it causes distension but when unripe it aggravates Kapha and Vayu. The milk of coconut increases semen, is cooling and nutrient. It satisfies thirst.

DATES — unripe ones are sweet, cooling, astringent, heavy, purify blood. They subside aggravated Tridoshas. The ripe dates are unctuous, palatable, increase semen, sweet, subside the aggravation of rakta and Pitta.

DADIMA (Pomegranate) — The fruit is sweet, sweet and sour or sour. Sweet fruit is light, astringent, subsides Tridosha, thirst, unctuous, increases semen, destroys burning, useful for mouth, throat, heart. Sour-sweet variety increases appetite. The fruit is useful in sprue and is vermifuge.

LIME — is pungent and subsides Pitta. Betel leaf when taken with lime and supari, is sweet, containing beneficial rasas and removes loss of taste from the mouth. It makes the teeth firm and steady, satisfies thirst and is useful in aggravation of Kapha. Camphor etc. added in Thambool gives a colour to the mouth. It purifies the throat, improves the voice, increases appetite and is beneficial to the heart.

Betel leaves are useful to the heart; they are aromatic and subside Kapha and Vayu.

Katha or the castor of Khadira tree is good for Kapha and Pitta. It clears the throat and is useful for blood disorder.

Supari is astringent, sweet, produces clear motion, reduces fat and is good for Pitta and Kapha. It kills worms.

VEGETABLES

Vegetables are divided into four parts, leaves, flowers, fruits and roots — patra, pushpa, phaia and kanda respectively, and each of these have their own particular qualities. They are either light or heavy. The leafy ones are the lightest of all, then come the flowery vegetables, thereafter the fruit-like vegetables and the heaviest of all is kanda-moola. Usually vegetables cause constipation. They are heavy, dry, increase the quantity of fecal matter and Vayu Dosha.

The Ayurvedists have given the virtues of a very large number of vegetables, many of which are now not in use in India. A few, however, are given below:

PARAWALA — light, dry, Rasa bitter, Veerya hot, Vipaka pungent. It subsides the Tridoshas. It is one of the best vegetables. It is anodyne, useful for the hair, cleanses ulcers. It is an appetizer, digestive, satisfies thirst, carminative, useful in worms, purifies blood. It is Kaphahara. It is a tonic. Its fruits, being sweet, are also used.

BITTER GOURD (Karela) — light, dry, bitter, hot and Vipaka pungent. It subsides all the Tridoshas, is an appetizer, digestive, purifies blood. Useful in obesity, diabetes, impurities of blood, dysmenorrhoea, painful and scanty menses, in low fever. It is a tonic.

KARKOTAKI OF KANTOLA — light, unctuous, Rasa bitter, pungent, Veerya hot, Vipaka pungent. It subsides Kapha and Vata. One of the most important vegetables; it is an appetizer, digestive, and due to unctuousness it is carminative and mildly laxative. It purifies blood, removes swelling. It has got Shodhana effect on uterus and is a tonic.

PANDOLA (Snake Gourd) — light, unctuous, Rasas sweet and bitter, Veerya cold, Vipaka sweet. It subsides Vata and Pitta, Deepan Pachan, carminative, induces taste, purifies blood, useful in fever and has got a tonic effect.

RIBBED LUFFA — KOSHATAKI — light, dry, pungent, Rasas bitter and pungent, Veerya hot, Vipaka pungent. Subsides Pitta and Kapha, purifies blood, useful in swelling, expectorant, it is bitter, tonic and especially useful to patients of cough, asthma, blood impurities, swelling, enlargement of the spleen, abdominal tumour, anaemia and such disorders. The sweet variety is cold, subsides Pitta and is a tonic for the hair. Bitter variety is given for the purpose of emetic action i.e. to induce vomiting.

MOOLAKA (Radish) — there are two varieties, light and heavy. Rasa pungent, Veerya hot, Vipaka pungent. Light variety is Tridosahara while the heavy variety causes Tridosha. The heavy variety is thick and long as the tusks of an elephant. Usually the light variety is available and used. Deepan, Pachan, carminative, stimulant to the liver, useful in swelling, spleen, due to pungentness it is expectorant, good for the throat and useful in cough and asthma. It has specific diuretic action and is very good for patients with stone complaint. Seeds of radish promote menstrual periods.

KAKADI (Cucumber) — sweet, cold, diuretic, digestive and appetizer. Useful in urinary disorders, burning sensation, vomiting, stones and calculi. Being cold it relieves the retention of urine and

burning sensation and subsides heat in the body. The seeds of cucumber, sugar and jeeraka — all three rubbed together in water and given along with equal quantity of milk establishes clear flow of urine.

GALKA — this resembles thuriya. It is cold, sweet, appetizer, palatable. It should be used only when ripe. In excessive use it causes Pitta and Vayu.

BRINJAL — solanum melongana — It is also called egg-plant, jew's apple or mad apple. Palatable, pungent, hot, Vipaka pungent. Useful in Vayu and Kapha, appetizer, increases semen, light and soft; fruits of this plant subside Kapha and Pitta, while the ripe plants of this variety cause Pitta. This is the opinion of Bhava Misra. So many varieties of dishes are prepared out of this. Raja Nijhantakar has considered it as one of the best available vegetables. Prepared in gingili oil along with asafoetida, it is a popular dish. It is an appetizer, useful for spleen, Vayu and Kapha, also in case of stones. It should be used with the skin on.

ONION — heavy, pungent, unctuous, Rasa sweet and pungent, Vipaka sweet, Veerya hot. Due to heavy unctuous and hot gunas it subsides Vata and due to heaviness, unctuousness and sweetness it increases Kapha and being hot, pungent and bitter it increases Pitta. It is a rejuvenator, aphrodisiac, stimulant, tonic, carminative, expectorant, diuretic, increases semen and promotes the flow of menses. It is roborant and is used in many medicines. Being cheap and a great stimulant it is called the 'Musk of the poor people'. It is not good for those who are of Pitta prakriti and especially it is harmful for the brain and hairs.

TOMATO — There are two varieties, ripe and unripe. It is a blood purifier, cures anaemia, useful in dyspepsia, piles, blood impurities, scurvy, liver troubles and chronic fever. It improves the digestive system and cures chronic diseases of the stomach. Soup prepared of tomato is very nourishing during the period of convalescence. It is tasty, palatable and useful for all but those to whom sour taste does not suit, should not take it in excess. Tomato fried in til oil along with jeerak, black pepper, salt and coriander etc. is nourishing, easily digestible, blood purifier and forms a suitable food.

LADY-FINGER — It is sweet, unctuous, heavy, rejuvenator, aphrodisiac, increases semen. It is considered one of the best vegetables and is a very good tonic. Unripe lady-fingers taken early in the morning on an empty stomach are nourishing to the body. It increases the body constituents. Smooth and tender ones are more useful.

CABBAGE or Brussels sprouts — usually known as Kobi and Cauliflower are two of the varieties produced from wild cabbage called Coulewort. There are many varieties. Cabbage is useful to patients of chronic cough, bronchitis, asthma and raw cabbage after being thoroughly cleansed is recommended to be eaten with advantage for worm troubles. The juice of white cabbage is said to cure warts. In some countries the leaves are used for sore throat, the leaves being tied round the throat. Cauliflower is sweet, heavy, cold, palatable, subsides Vayu, Pitta and Kapha; particularly for Pitta prakriti people it is very useful.

DUDHI-GOURD — It is known as sweet dudhi also. It is sweet, cold, unctuous, nutrient, causing Vayu, tonic, palatable, forming stool, subsiding Pitta, heavy and causing Kapha. Seeds of dudhi are also used. They are tasty, sweet and bring sleep.

GREEN PEAS — very good tonic, palatable and tasty but in excess quantity causes Vayu. It should be used with garlic, lemon, condiments and fried in til oil to remove the Dosha causing Vayu. Fresh green peas are the best. It is not suitable to Vata prakriti constitution.

VALAPAPADI (Beans) — It is very palatable, appetizer and tasty. It causes Vayu and constipation and if not properly digested it increases gastric distension.

GOWAR (Cluster bean or field vetch) — sweet, dry, heavy, laxative, causing Kapha, subsiding Pitta, not suitable to pregnant women as well as Vata prakriti people.

CHOLAPHALI (Amaranth Beans) — When fried along with condiments it becomes very tasty but it causes too much of Vayu as it is dry, astringent, heavy, causing Kapha, distension and Pitta. If it is not properly digested it causes distension. Used regularly and in winter it gives a tonic effect but usually it is taken as a tasty snack. It does not at all suit Vata prakriti people.

GAJARA (Carrot) — Bitter, pungent, aggravates rakta and Pitta, appetizer, harmful to the eyes, dry and causing Pitta. Seeds of this carrot are hot and cause abortion. This is used more in the rural areas and it is a nutrient and digestive food for the rural population. Wherever there is salty water in the land, the carrot grown there is sweet and tasty. It is diuretic and useful in urinary troubles.

RATALU (Yam) — sweet, heavy, tonic but not good for those who have got excessive formation of Vayu. It resembles potatoes but it does not suit those who have weak digestive power, gastric or spleen trouble.

SURANA (*Amorphophallus*) — Pungent, hot, appetizer, light, digestive, aggravates rakta or blood. Not good for those who have haematemesis and haemoptysis, heart diseases or blood impurities but it is very efficacious for worms, abdominal tumour, asthma, cough and vomiting. Fried in ghee and along with Sunthi (ginger) and black pepper it becomes tasty and constitutes a suitable diet for patients suffering from piles.

CHICK-PEA (*Lentil*) — Vetchling and common pea are light, cooling, sweet, astringent in taste and strongly dehydrating. Especially **Lentil** and **Chikling Vetch** are recommended in **Pitta** and **Kapha** conditions and are esteemed as soups. Amongst them the **lentil** is astringent in action and **chickling vetch** is a great stimulant of **Vata**.

LEGUMES — All varieties of legumes are sweet, cooling, heavy, destructive of strength and dehydrating. They should be taken only by strong persons and in conjunction with unctuous articles. The **Simbi** variety of legumes is dry, astringent in taste and provokes **Vata** in the abdomen and is non-aphrodisiac. It causes slow and irregular digestion and is not good for the eyes.

LEAFY VEGETABLES

CHAWLI (*Amarantas Gangeticus*) — sweet, cold, post-digestive action sweet. Light and dry. It is palatable, subsiding **Kapha**, **Vata** and **Pitta**, is digestive, appetizing, purishajanana and carminative. Good for the heart, it subsides rakta and **Pitta** and is diuretic.

SUA — Dill. Light, dry, pungent, bitter, hot. Subsides **Vata** and **Kapha**. It is diuretic, promotes the flow of menses, as well as breast-milk, useful in fever; but excessive use leads to loss of semen. It is carminative, **Deepan Pachan** and useful in worms. Especially given in post-delivery period. It is anodyne, useful in swelling. The distilled water known as **Dill water** is given to children in abdominal colic. It is especially useful in **Kapha** and **Vata**.

NON-VEGETARIAN ARTICLES

The flesh of the tearer group of carnivorous animals is recommended to persons suffering from chronic piles, assimilation disorders and consumption.

The flesh of goat is not very cooling, not heavy, nor unctuous. It does not disturb the **Doshas** and being homologous to the human body elements, acts as a roborant.

The flesh of sheep is heavy due to its cooling and sweet properties and is roborant.

The flesh of chicken is unctuous, hot, aphrodisiac, roborant, strengthens voice. It is a tonic, highly curative of Vata and sudorific.

The flesh of grey partridge is cooling, sweet, and light and is recommended in disorders of Pitta, Kapha, blood and mild Vata.

The flesh of the domestic pigeon is astringent in taste, tender, cooling and curative of hemothermia.

The flesh of sparrow is sweet, unctuous, highly promotive of strength and semen and alleviative of tridiscordance and Vata.

The flesh of hare is astringent in taste, limpid, dry, cooling, pungent on digestion, light and sweet. It is recommended in tridiscordance where Vata is relatively mild.

The flesh of buffalo is unctuous, hot, sweet, aphrodisiac, heavy and nourishing. It also promotes firmness and corpulence and supplies energy and sleep.

The flesh of fish in general is heavy, hot, sweet, strengthening, roborant, curative of Vata, unctuous, aphrodisiac and is said to be highly conducive to health. The flesh of the Rohita fish is light, digestive and promotes strength.

The eggs of the swan, chakor, cock, peacock and sparrow are beneficial in oligospermia, cough, cardiac disorder and pulmonary lesions. They are sweet, non-irritant and immediately strengthening.

Charaka advocates the use of all the Rasas in diet and condemns the single and excessive use of any one Rasa. Similarly if one item of diet is taken in excess and continuously to the exclusion of others, it will prove harmful to the body. One should therefore take in more or less proportion all the diet items, avoiding only those which are not suitable to one's constitution.

“Eat in proper measure” is a maxim worth following. By proper measure is meant intake of heavy articles in small measure and of light ones in large measure. Hence heavy articles should be taken in small quantity and light ones to full satisfaction. In deciding the proper measure, the strength of gastric fire should be considered. Strength, health, longevity and the vital breath are dependent on the state of gastric fire, which burns, fed by the fuel of food and drink, or dwindles when deprived of them.

The above consideration of heavy and light articles applies to those who are generally weak, indolent, unhealthy, delicate of health and given to luxury. For those whose digestive fire is strong, who are accustomed to hard articles of diet and constant labour and who have huge capacity for the consumption of food, the

consideration of heavy and light is not so vital. The self-controlled man should always feed his gastric fire with the fuel of wholesome food and drink, mindful of the consideration of measure and time.

It is said: "The man whose gastric fire is well tended, who feeds it duly with wholesome diet, who is given to daily meditation, charity and the pursuit of spiritual salvation and who takes food and drinks that are homologatory to him, will not fall a victim to approaching diseases except for special reasons. The disciplined man who takes wholesome diet lives for a period of 36,000 nights, i.e. 100 years, blessed by good men and devoid of disease."

We have placed before our readers the dietary values of important cereals, pulses, condiments, fruits, vegetables etc. which make up the Indian diet. These values apply equally to other parts of the world. Modern preparations like bread are not described in Ayurveda. We have already described how Rasa or taste is decided by the tongue and it should not be difficult to ascertain the dietary values of those items which are not described in this book.

Before concluding this chapter, we would like to say a word or two on tea and coffee, which have formed part and parcel of our lives. Both tea and coffee are stimulants. They are Kashaya (astringent), Ushna, post-digestive action being Katu. Their dietary values will differ according to the methods of preparation which vary with each part of the world. The quantity of milk added to tea or coffee will, again, increase their tonic value. Tea and coffee should not also be taken in excess. In our humble observation, the dietary practices as they prevail in India today need improvement. We regret to say very little attention is paid to diet. In fact, diet is one thing that will help a lot in prolongation of life, as we are told by Bacon. Therefore proper attention should be paid to one's diet. One should have a thorough knowledge of various items of diet and select what is suitable or agreeable to oneself. Unfortunately, people are more in the habit of consuming what appeals to their palate rather than what is good for the nourishment of the body. Accordingly spicy, pungent, sour, acid, alkali and such other articles are taken, while sweet, bitter or astringent are usually avoided and they suffer. As we have already pointed out, one should take all the Rasas in normal proportion and thus establish a balanced diet, so that one may live a healthy, long life.

The principles of dietetics and the descriptions of the various items of food, drinks, wine, etc. and their nutritive properties have been dealt with as given in the ancient texts. To formulate specific diets and to soothe the requirements of the individual, the country and other distinctions one would have to modify these principles.

in the light of these varying factors. The author has not expressed any individual preferences in giving these descriptions.

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CHAPTER TEN

MATERIA MEDICA .

THE Ayurvedic system of medicine could flourish because it had its concomitant Materia Medica which had been developed to a very advanced level. But its basic concepts which reflect the same general approach need to be understood properly. These are: Dravyas, Gunas, Rasas, Veeryas, Vipakas and Prabhava. We shall deal with them one by one.

DRAVYAS

“ Dravya ” has been defined as “ that which contains in it the action (karma) and quality (guna) and is a co-existent cause ” (Ch. Sut. Ch. 1). Dravya is substance. Substances have their qualities.

Dravyas are of two types — Karana and Karya. According to Vaishesika opinion, Prithvi (earth), Jala (water), Tejas (fire), Akasa (ether), Vayu (air), Atma (soul), Mana (mind), Kala (time) and Dik (space) are the nine karana dravyas or moola dravyas. The whole world is formed from a mixture of these nine dravyas. Except Atma and Mana, the remaining seven dravyas form the Achetana world, while all the nine when combined form the Chetana. Chetana dravya is again divided into two Bahir Chetana and Antaschetana i.e. animate and inanimate respectively. “ Those that are bestowed with the senses are known as animate, those devoid of senses are known as inanimate ” (Char. Ch. 1. 8. 47).

Dr. Ray observes “ We have two kinds of qualities, those which reside in a plurality of objects, and those which are confined to individuals. The former are the general qualities (Samanya) while the latter are distinguished as permanent (Guna) and transitory (Karma). ‘ Inherence ’ is a special kind of relation. Relations are of two kinds, external like conjunction (Samyoga) or internal like inherence (i.e. Samavaya). The first is regarded as a quality and the second is a separate category.

“ Qualities and action exist by combination with substances. Without substance there were no qualities or action. Similarly genus and species are correlative and are not absolute except in the case of the highest genus which is Existence (Bhava) and the lowest species which is Vishesa or individual characteristic appertaining to

and inherent in the external substance. Genus and species therefore exist by combination with substances. Without substances there were no genuses and species. Similarly, Samanya or combination is the intimate connection in the inseparably connected things e.g. parts and wholes of the substances and their qualities of action and the seat of action of genus and species and substances in which they reside and of external circumstances and their ultimate differences. Without substance there were no combination; dravya therefore is a fundamental reality”.

Karma is defined as “ That which resides only in one substance, is devoid of qualities and is the direct and independent cause of conjunction or disjunction. Karma has signification of movement. It is not voluntary action. Qualities which continue to exist are called Gunas while those that seem to exist are called Karma. Guna is permanent. It is the distinction between the continuing and the occurrent qualities.” (pp. 17 & 18. Principles of Tridosha).

GUNAS

Usually the word ‘ Guna ’ means ‘ active quality ’ but here we give the physical properties, which could be classified as physiological, pathological and pharmacological. It is by these properties that a particular substance is known to have its own specific action. Gunas are twenty in number :

- | | |
|----------------------------------|-----------------------------------|
| 1. Guru (heavy) | 11. Mridu (soft) |
| 2. Laghu (light) | 12. Kathina (hard) |
| 3. Shita (cold) | 13. Visada (clear) |
| 4. Ushna (hot) | 14. Picchila (slimy, turbid) |
| 5. Snigdha (viscous or unctuous) | 15. Slaksna (smooth) |
| 6. Ruksha (dry) | 16. Khara (rough) |
| 7. Manda (slow, dull) | 17. Sthula (coarse, rough) |
| 8. Thikana (energetic) | 18. Sukshma (penetrative, subtle) |
| 9. Sthira (motionless) | 19. Sandra (dense or solid) |
| 10. Sara (fluid, moving, chala) | 20. Drava (aqueous) |

It will be observed that in the above twenty Gunas, Laghu is opposite to Guru, Shita to Ushna, Ruksha to Snigdha, and so on.

We will give a few examples to show that though the chemical analyses of different drugs may be the same according to their physical properties, Ayurvedists have found different actions in them. For example, Moti (pearl) and Shankha (conch) are both chemically compounds of calcium carbonate when analysed in the laboratory, but their specific actions in the body are different. The

former is Shita and Snigdha in Guna while the latter is Ushna and Ruksha; and though chemically the same, Moti is used in heart disorders and for a cooling and soothing effect and Shanka is used in digestive disorders but not vice versa. Amla, a most well-known drug in Ayurveda, is in extensive use, considering its physical property Shita, Snigdha etc., and not because it contains an excess of Vitamin C.

In diet also different items are judged useful or otherwise for the constitution bearing these qualities in mind. For example, in the case of cereals, one particular cereal may be hot and the other cold; some may be heavy, others light. Keeping these qualities in mind different items were analysed in the light of the Gunas.

RASAS

Rasas (Tastes) are six in number: Madhura (sweet), Amla (sour), Lavana (salty), Katu (pungent), Tikta (bitter) and Kasaya (astringent). The Ayurvedists used to determine the predominant taste in a given substance. This was known as Rasa Sidhanta. Diet dravyas come under the Rasa theory.

Earth, water, fire, ether and air these five mahabhutas or basic factors give rise to three doshas, seven body constituents, and three malas (or body secretions). These Doshas, Dhatus and Malas are produced from the digestion, assimilation and excretion of diet we take. This diet also consisting of five bhutas. Usually we say that diet is recognised by six Rasas (tastes) contained in it. The five basic factors give rise to six Rasas and formation of each rasa is containing the following mahabhutas in predominance.

(1) Madhura or sweet	Water + Earth
(2) Amla or sour	Water + Fire
(3) Katu or pungent	Air + Fire
(4) Tikta or bitter	Air + Ether
(5) Lavana or salt	Earth + Fire
(6) Kashaya or astringent	Air + Earth

It will also be interesting to note that relation of every rasa or taste with the dosha is as follows:

VAYU is aggravated by Rasas

- (1) Astringent
- (2) Bitter and
- (3) Pungent

VAYU is subsided by Rasas

- (1) Sweet
- (2) Sour and
- (3) Salt

PITTA is aggravated by Rasas

- (1) Bitter
- (2) Sour and
- (3) Salt

PITTA is subsided by Rasas

- (1) Astringent
- (2) Sweet and
- (3) Bitter

KAPHA is aggravated by Rasas

- (1) Sweet
- (2) Sour and
- (3) Salt

KAPHA is subsided by Rasas

- (1) Bitter
- (2) Pungent and
- (3) Astringent

The relation between the dosha and rasa principles is the most important of all as far as Ayurvedic treatment is concerned.

THE ACTIONS OF THE RASAS

The six Rasas or tastes have got their own typical actions in the body. A combination of Rasas in proper dose would give good effect but the use of one single Rasa in excessive quantity would cause so many disorders, as will be seen from the following :

MADHURA RASA OR THE SWEET TASTE — It is a tonic. It is most agreeable to the body and hence it increases the body constituents. It maintains and improves health. It pleases the mind and the five sense organs. It increases the glow of complexion. It destroys Pitta and Vayu. It satisfies thirst, removes burning sensation. It is useful for the skin, hair and throat. It gives strength to the body, it is a nutrient, it builds the body. It is unctuous, cold and heavy. It increases breast-milk. It is good for the eyes and the blood. It is very good for emaciated children and aged people. It is mild and it gives strength to the seven Dhatus.

But used singly and in excess it will give rise to Kapha Dosha, obesity, lassitude, excessive sleep, heaviness, anorexia, increase of flesh, dyspnoea, cough, cold, worms, indigestion, constipation, sweetness in the mouth, vomiting, laryngitis, glands slipada (elephantiasis), eye diseases, tumours, urine diseases, headache, diseases of the abdomen etc.

AMLA RASA (SOUR TASTE) — It is an appetizer. It increases appetite, secretion and health. It excites the mind and strengthens the organs. It is carminative, it nourishes and satisfies the heart. It increases the saliva and causes the downward motion of food, it helps digestion, softens and moistens the food. It is hot, light and unctuous.

Used singly and excessively, however, Amla Rasa causes thirst, increase of Pitta, in the bladder, inflammation, looseness in the body, swelling in emaciated people, burning sensation in throat, thorax and chest, anaemia, weak eye-sight, haemophilia, giddiness, fever, darkness before eyes. In short, it increases the impurities of blood, looseness in the body, pus formation and diseases due to Kapha and Pitta.

LAVANA RASA (SALT) — It increases appetite and digestion. It helps the movement of Dhatus from their own place to other seats. It helps the fluid activity in the body. It is heavy, unctuous and hot and a bit pungent. It is carminative. It makes space in the channels, it removes blockade in the channels and makes them smooth. It increases saliva. It dilutes Kapha. It purifies the body channels.

But single and excessive use of Lavana Rasa causes debility, impotency, weakness of teeth, baldness, impurities in blood, wrinkles, haemophilia, hyperacidity, gout, burning and itching sensation, inflammation, change in complexion etc.

KATU RASA (Pungent) — It purifies the mouth, increases appetite, helps the assimilation and absorption of food. It increases the secretion from the nose and eyes. It excites the organs. It dries up, by destroying, perspiration and fluidity in the body. It destroys itching. It helps the healing of ulcers, it kills the worms, it assists in the coagulation of blood. It removes blockade in the channels and opens them up. It removes obesity, lassitude, cough, and is specially useful in disorders like leprosy. It also destroys breast-milk, semen and fat. It is useful in the diseases of the mouth. It emaciates the body.

Used alone and excessively it will give rise to impotency, giddiness, fatigue, emaciation, fainting, darkness before eyes, burning in throat and body, lack of strength, thirst, trembling, pain in body, diseases due to Vata, vomiting, decrease of Shukra Dhatu and pain in the back.

TIKTA RASA (Bitter) — It is an appetizer. It destroys anorexia, worms, toxins. It is useful against burning sensation, itching, leprosy and thirst. It strengthens the skin and flesh. It is useful in fever. It clarifies breast-milk and the throat and makes the body emaciated. It dries up marrow, pus, perspiration, urine, faeces, Pitta and Kapha. It is rough, cold and light. It sharpens the intellect.

Used singly and excessively it causes loss of strength, emaciation, fainting, giddiness, diseases due to Vata, dryness in the mouth, headache, change in the taste and slow and sudden decrease in the remaining six Dhatus.

KASHAYA (Astringent) — It subsides Kapha, Pitta and blood. It dries up the fluids in the body. It is heavy, cold and rough. It has also got the effect of emaciation. It brings the skin into normal order. It is a blood purifier. It helps absorption of flesh and fat. It is very useful in diarrhoea. It is soothing and cooling.

Used singly and excessively it will cause pain in the heart and chest, feeling of dryness in the mouth, flatulence, blockade in the channels, constipation, change in the complexion of the skin,

impotency, blockade in the motion of fluid, urine and faeces, emaciation, drowsiness, thirst, diseases due to increase of Vata like paralysis, haemorrhage, trembling in the organs etc.

VEERYA

Medicinal drugs come under the theory of Veerya (power). There are two types of Veeryas, Ushna and Shita. They have the following actions :

Ushna (hot) Veerya has the function of combustion, digestion, vomiting, purging, destroying Vata and Kapha, increasing Pitta, causing lightness in the body, destroying semen.

Shita (cold) Veerya creates steadiness, nourishment, increase of Vayu and Kapha, heaviness, increase in strength, increase in fluid and a sense of satisfaction.

(The reader should bear in mind that Shita and Ushna Gunas and Shita and Ushna Veeryas are two different aspects altogether, Guna being the quality and Veerya the active power.)

VIPAKA

Vipaka is the consequence of the change or action which a dravya undergoes in the human organism. According to one classification there are two types of Vipakas, viz. Laghu (light) and Guru (heavy) and the Rasas turn into Vipakas as follows :

Madhura	}	into Guru
Lavana		
Kashaya		
Amla	}	,, Laghu
Katu		
Tikta		

Another classification is as follows:

Madhura Rasa	results in	Madhuravipaka
Amla Rasa	„	Amlavipaka
Lavana Rasa	„	Madhuravipaka
Katu, Tikta and Kashaya	„	Katuvipaka

Charaka has given the action of all Vipakas as under :

Madhuravipaka is heavy, increases semen, causes cough, clears the urine and motion.

Amlavipaka destroys the semen, clears the urine and stool, causes Pitta and is light.

Katuvipaka causes constipation, increases Vayu, destroys semen and is light.

Guru Vipaka destroys Vata and Pitta, causes cough, and clears the faeces and urine.

Laghu Vipaka causes constipation and Vayu and destroys Kapha.

The Ayurvedists used to decide the action of each substance i.e. whether it was hot or cold, and they found out the digestive action or Vipaka of each dravya. (We have previously referred to local digestive action in the stomach, duodenum and large intestine by which we meant the action brought about by local secretions. The Vipaka to which we refer now is, however, related to particular items of diet or drug.)

Thus a particular substance will have a typical taste or rasa, action or veerya, vipaka or specific Rasa action at the end of digestion. All these will have to be borne in mind in terms of the Tridosha theory, that the typical Rasas, the typical actions and the typical Vipakas subside or aggravate a particular Doshā or body secretions or body constituents and in order to balance these the line of treatment would be thought out. The intelligent reader will at once make out that the Ayurvedists had the above theory in mind when describing diet and practices. Thus Hinga (asafoetida), jeerak (cummin seeds), salt, pepper or maricha (black pepper), Rajika (mustard) are being used in cooking, keeping in mind their medicinal properties. Similarly, milk, ghee, butter, butter-milk, wheat, rice, vegetables, cereals have all been classified according to their Rasa, Veerya and Vipaka.

PRABHAVA

The Ayurvedists have lastly spoken of Prabhava. They say that irrespective of Rasa, Veerya and Vipaka, a particular substance may have a different action and that unknown, ununderstandable or unthinkable typical action is the Prabhava. Thus two substances which have similar Rasa, Veerya and Vipaka may have altogether different actions, one causing constipation and the other purgation. Example has been given of two drugs, Chitraka (Ceylon leadwort) and Danti (Satropha Montana), both of which have Katu Rasa (pungent taste), Ushna Veerya (hot action) and Katuvipaka (specific drug-digestive reaction at the end of digestion which is pungent) but Danti is Virechana (causing purgation), while Chitraka is not.

The protective action of Danti is a Prabhava and hence Prabhava is Achintya Shakti or invisible power.

The Rasa-Veerya-Vipaka theory of Ayurveda has its own foundation and once by experiment the Rasas, Veeryas and Vipakas have been ascertained and determined, it goes without saying that they remain unaltered. Lassun (garlic) was hot even 3,000 years ago; it is hot today and will be hot 2,000 years hence. The Ushna Veerya cannot be altered. Similarly Palandu (onion) is Tikshna and pungent and this has been the experience for many centuries. Wheat (godhum) has Madhura Rasa, Shita Veerya and Madhuravipaka. These will remain so for ever.

CLASSIFICATION

Now we turn to classification of drugs. Charaka has divided drugs into five types: Vamana (emetic), Virechana (purgative), Asthapana (enema), Anuvasana (oily enemas) and Shirovirechana (errhines). There are indeed many other classifications but we give below a short list of drugs described by Charaka showing the typical pharmacological action of each together with examples:—

JEEVANEYYA — Drugs like Salama and Vidarikanda which are beneficial for and maintain life in a sound condition. They have Prithvi and Jala Mahabhutas in excess. Milk is described as the best of the lot. (Restoratives)

BRINHANA — the drug that nourishes the body. This is heavy, cold, fine, unctuous, viscid etc. It has also Prithvi and Jala Mahabhutas in excess e.g. Ashwagandha. (Roborants).

LEKHANA — drugs which dry up the body constituents and body secretions and, especially, remove Kapha and fat and emaciate the whole body. They have Vayu and Agni Mahabhutas in excess, e.g. honey, hot water, Quaker Oats, turmeric etc. (It may be noted that the same word 'Lekhanam' has a different meaning in surgery, viz. the removal of the scab formed over an ulcer by some instrument).

BHEDANA — the substance which causes excretion of accumulated faeces and Doshas, e.g. Kutaki, castor seeds or Nasottara.

SANDHANA — This action is needed for the healing of fractures.

DEEPANA — that which increases the appetite is known as 'Deepana' e.g. pepper. It has got Agni Mahabhuta in excess. Substances which do not digest Ama (undigested food juice or food) but increase the appetite are known as Deepana.

PACHANA — that which digests Ama but which does not increase or excite appetite is known as Pachana. The drug which

excites the appetite and at the same time improves the digestion is known as Deepana-Pachana.

BALYA — that which increases the strength of the body e.g. Shatavari or Ashwagandha (tonics).

VARNYA — the substance which increases the glow of complexion or establishes normal glow after an illness, e.g. Chandan, Manjastha.

HRIDYA -- the substance that is beneficial for heart and mind is known as Hridya. Mangoes and other sweet and sour things which appeal to the taste and are liked by any person would be known as Hridya as well as drugs like Arjuna bark or Amber.

KANTHYA OR SWARYA — which is beneficial for the voice, which improves the voice and is usually useful in the inflammation of the larynx and pharynx, e.g. Yashtimadhu.

TRIPTIGHNA — which nullifies the feeling of satiety and lack of desire to eat anything e.g. Ginger, Guduchi etc.

SHUKRAJANANA — These are divided into four categories:

(1) Shukravardhana — that which promotes the formation and increases the quantity of semen e.g. Kaunchabbija, Vidarikanda, Shatavari, Salama, ghee prepared from cow's milk. These may or may not be aphrodisiacs.

(2) Shukra-pravartaka or Kamotteajaka — the dravya which actually does not increase the quantity of semen but enhances the appetite and sex libido e.g. Akarkarabha, Makaradhvaj, musk etc. (This treatment is prescribed in the case of frigidity either in males or females).

(3) There are some dravyas which have both the qualities of (1) and (2). They are aphrodisiacs e.g. Milk, Masha (Udida).

(4) Shukra Stambhana — the dravya which supplies retentive power to man and increases the time of coitus.

ARSHOGHANA — cures piles, e.g. Kutaja

KUSHTHAGHNA — removes blood impurities e.g. Khadira

KANDUGHNA — cures itching e.g. Karanja, Neema.

KRIMIGHNA — cures all the signs, symptoms and complications created by external and internal worms e.g. Vidanga (anthelmintics, vermicides or vermifuge).

VISHAGHNA — cures various types of symptoms caused by poison and complications arising therefrom e.g. turmeric, chandan.

STANYAJANANA — increases breast-milk e.g. Shatavari.

STANYASHODHANA — purifies breast-milk e.g. Surfthi, Guduchi.

SNEHOPAGA — which when used with sneha (ghee, oil etc.) increases the strength of the sneha dravya e.g. glyceriza, vidarikada.

- SWEDOPAGA** — which is helpful to the action of swedana e.g. castor, arka.
- VAMANOPAGA** — increases the strength of the emetic action when used with emetic dravyas e.g. honey, salt.
- VIRECHANOPAGA** — that which when used with Virechana dravya increases its action e.g. Draksha (grapes)
- ASTHAPANOPAGA** — which when used with the Asthapana dravya increases the strength e.g. Bilwa.
- ANUVASANOPAGA** — which when used with Anuvasana Basti increases the strength of Anuvasana e.g. Rasna, Devadar.
- SHIROVIRECHANOPAGA** — brings about an action of shirovirechana e.g. Black Pepper (Charaka has given Snehopaga etc. dravyas separate from Snehana etc., while in the case of Shirovirechana (errhines) the shirovirechana and shirovirechnopaga dravyas are not separately mentioned).
- VAMIHARA** — subsides vomiting and the aggravated Dosha e.g. Khasa or Kapura Kachli (Anti-emetics).
- PIPASAHARA** — subsides thirst and the aggravated Dosha (also known as Trishnanigrahana) e.g. Nagarmotha.
- HIKKANIGRAHANA** — cures hiccup and the aggravated Dosha for the same e.g. Pushkaramoola of Karkata Shringi.
- GRAHI** — stops watery and intermittent loose motions (Even the dravya which is Deepana, which is able to digest the undigested juice and with it Ushna Veerya again absorbs the Malas is known as Grahi) e.g. Ginger, Jeerak, Lodhra, Mocharasa, Dhataki Pushpa (astringents).
- PURISHA VIRAJANIYA** — removes the Dosha affected purisha and produces its natural colour e.g. Jambu, Kamala, Yashtimadhu.
- MUTRAVIRAJANIYA** — removes the aggravated Dosha from the urine and brings its colour to normal e.g. Kamala Pushpa, Yashtimadhu.
- MUTRASANGRAHANIYA** — decreases the frequency of excessive urine e.g. Jambu, mango tree etc.
- MUTRAVIRECHANIYA** — brings about the virechana of urine e.g. Goksharu, Vatshanabha Punarnava.
- KASAHARA** — removes cough e.g. Vasaka.
- SHVASAHARA** — cures asthma e.g. Soma, Pushkaramula.
- SHOTHAHARA** — removes inflammation e.g. Dashamula or Punarnava.
- JWARAHARA** — decreases vega of jwara and reduces the burning sensation e.g. Parpataka (These are anti-pyretic or anti-febrile or febrifuge).

- SHRAMAHARA** — removes fatigue e.g. dates.
- DAHAPRASHAMANA** — removes and subsides internal or external heat and burning e.g. Kamala, Chandana and Khasa (Refrigerants).
- DAHANA** — the dravya which like fire burns skin, flesh etc. e.g. Kshara.
- SHITAPRASHAMANA** — removes the feeling of shivering e.g. Vacha, Kushta, Agara.
- UDARDAPRASHAMANA** — removes urticaria e.g. Arjuna, Saptaparna.
- ANGAMARDDAPRASHAMANA** — removes the feeling of pain in body e.g. castor etc.
- SHOOLAPRASHAMANA** — decreases colic e.g. Ajamoda, Jeeraka.
- SHONITASTHAPANA** — stops bleeding. The dravya which removes rakta dushti or blood impurity and brings it in its normal state is also known as Shonitasthapana e.g. Yashtimadhu, Lodhra and Geru. (In short the blood purifiers, the blood tonics as well as styptics which stop the blood — all these are included in Shonitasthapana).
- VEDANASTHAPANA** — subsides pain, anodynes and analgesics.
- SANGNASTHAPANA** — brings back consciousness e.g. Brahmi, Jata-mansi etc.
- PRAJASTHAPANA** — removes obstacles in the way of conception as also aggravated Doshas e.g. Brahmi, Durva.
- VAYASTHAPANA** — maintains youth e.g. Guduchi, Harde, Amalki. (The dravya which stops old age and protects young age is also known as Vayasya. We can call it youth preserver or youth restorer).
- LANGHANA** — brings lightness to the body. This dravya usually contains the nine Gunas, Laghu, Ushna, Tikshna, dryness etc.
- RUKSHANA** — brings dryness, Kharatwa and Vishadatwa e.g. Barley.
- SNEHANA** — brings unctuousness, wetness, softness and Kaleda. (These dravyas are usually sukshma, sara, snigdha, picchila, guru, manda and mridu) e.g. oil, fat, bone marrow. These are demulcents.
- SWEDANA** — removes blockade and heaviness and coldness and causes perspiration. (These dravyas are usually Ūshna, Tikshna, Snigdha or Ruksha, Shlakshana, Drava, Sara or Sthira and Guru).
- STHAMBANA** — stops the watery flow from the body in the form of vomiting, diarrhoea e.g. Kutaja. (These dravyas are usually

Shita, Manda, Mridu, Ruksha, Shlakshana, Drava, Sthira and Laghu.

SAMSHAMANA — the dravya which neither eradicates the balanced Doshas by emetic or purgative action nor increases them but cools and calms them down is known as Samshamana. In short, it subsides the aggravated Dosha and does not give rise to a new disease, e.g. Guduchi. (The Samshamana dravya usually possesses the ether or Akasa element in excess. Some Acharyas mention that the Samshamana dravyas contain Vayu, Jala and Prithvi. We can divide them further into Vata Samshamana, Pitta Samshamana and Kapha Samshamana. Generally all medicinal substances can be divided into Shodhana and Shamana).

VAMANA (emetic) — removes the aggravated Doshas from the upper canal; also known as Urdhavabhagahara or Chhar-dhaniya. These dravyas are hot, pungent, minute, vyavayi and vikashi. That dravya which aggravates undigested Pitta, Kapha or both or food via mouth is known as Vamana e.g. Madanaphala. (It should be remembered that Vamana is especially meant for eradication of Kapha. However, undigested Pitta is also removed by Vamana action and that is why in the treatment of hyper acidity (Amla Pitta) the suggestion of producing emetic action is prescribed by the Acharyas).

VIRECHANA — that dravya which removes from the anal canal the aggravated Doshas is known as Virechana or Anulomaniya or Adhobhagahara. These dravyas are Ushna, Tikshna, Sukshma, Vyavayi, Vikasi and Sara. Sarangadhara has defined the dravyas which remove the pakva or apakva fluid as Virechana i.e. Nasottara—Purgatives.

ANULOMANIYA OR SARA—that dravya which after digesting the malas and Doshas remove them by the anal canal is known as Anulomaniya or Sara. It is also known as Saraka, the dravya which removes the obstructions of faeces, urine and wind, e.g. Harde (Carminative—laxative etc.).

SRANSANA — removes the malas which adhere to the large intestines without getting them digested e.g. Amalatas.

SHODHANA — removes from the upper and the lower canal both the aggravated Doshas. These dravyas contain Tikshna etc. Gunas.

CHEDANA — removes the accumulated and adhered Kapha etc. Doshas from its own active principle (prabhava) i.e. Shilajita.

RASAYANA — gives long life, heightened memory and intelligence, freedom from disease, youth, excellence of lustre, complexion

and of voice, optimum strength of body and senses, utterances that always get fulfilled, the reverence of people, body glow. Charaka has divided this Rasayana into two categories, one is jeevaniya and the other Vayasthapana.

SUKSHAMA — that dravya which minutely enters the channels or srotas of the body is known as Sukshama.

VYAVAYI — that which before being digested by Jathara Agni by its own wonderful action spreads in the body and shows its own quality and action is known as Vyavayi e.g. bhanga (cannibis indica), opium, aconite etc.

VIKASHI — that which before getting digested by Jathara Agni or external fire removes the dhatus from Oja (the essence of semen) and makes the tendons of the joints, the dhatus or body constituents loose is known as Vikashi e.g. undried betel nut.

MADHYA OR MADAKA — that which having tamo dosha in excess (as well as rajo dosha) destroys the intelligence and brings about intoxication is known as Madhya, Madakari or Madaka e.g. various types of wine and liquors. (These Madaka dravyas are Laghu, Ushna, Tikshna, Sukshma, Amla, Vyavayi and Ashookari, Ruksha, Vikashi and Vishada. It should be remembered here that Oja is exactly opposite to Madaka or intoxicating dravyas. Oja is Guru, Shita, Mridu, Madhura, Sthira, Snigdha).

VISHA OR PRANAHARA OR POISON—Visha dravyas are Laghu, Ruksha, Ashu, Vishada, Vyavayi, Tikshna, Vikashi, Sukshma, Ushna and with Aavyakta Rasa. Due to Ruksha Guna, Vata is aggravated; due to Ushna, Pitta; due to Sukshma, rakta or blood; and due to aavyakta Rasa, Kapha is aggravated. Being Ashookari it follows the food juice immediately; due to Vyavayi it spreads in the body rapidly; due to pungentness it kills the marma (vital seat); due to Vikashi guna it is pranahara or life-taking. Being laghu it is very difficult to treat and being Vishada its progress is unstoppable in the Dosha. Due to all these gunas the visha dravya or the poison spoils the Doshas, their places and kills the person. It contains all the Rasas and it is Agneya.

PRAMATHI — that which due to its own capacity removes from the srotas or the channels the accumulation of Doshas is known as Pramathi e.g. black pepper and vacha. It also removes the accumulation of Doshas from the mouth, the nose and such other chhidras.

ABHISHYANDI — that which due to its own picchila guna as well as heaviness blocks the rasavaha srotas and aggravates the

Kapha Dosha and produces heaviness in the body is known as Abhishyandi e.g. Dahi or curd.

VIDAHI — that which due to its own nature or otherwise due to its own heaviness takes longer time for digestion and while getting digested aggravates Pitta creating a burning sensation in the oesophagus or Annanali is known as Vidahi.

YOGAVAHI — that which retains its own virtue and at the same time increases the virtues of the dravyas with which it comes in contact is known as Yogavahi e.g. honey.

PUNSATVA UPAGHATI — that which brings about the loss of semen and impotency and destroys manly power e.g. Kshara or alkalies.

SWAPNAJANAKA — that which brings about sleep. It is also known as Nidrakaraka e.g. Khorasani Ajavayan, Pippali-mula.

SAUMANASYAJANANA — that dravya which pleases the mind and brings mental happiness is Saumanasya or Manaprasadakara e.g. wine taken in small quantities according to methods prescribed.

CHAKSHUSYA — that dravya which is beneficial to the eye is known as Chakshusya e.g. Triphala or cow's ghee.

KESHYA — that dravya which makes the hair stable and increases hair e.g. Bringraja or Yashtimadhu.

MEDHYA — that dravya which increases medha (intelligence or memory) is known as Medhya e.g. Brahmi or Shankhapushpi.

PURISHAJANANA — that dravya which increases the quantity of faeces is known as Purishajanana e.g. Udida, Java (Barley), Patrashaka (leafy vegetable).

It will be seen from the above descriptions from Charaka that more than 50 groups of dravyas are given. There is a big list for each of the groups which it is not possible for us to give here in a book of this nature. Those who wish to read the same may kindly refer to Charaka Samhita.

The pharmacological actions mentioned above cover the modern field of anti-pyretics, diaphoretics, narcotics, appetizers, digestives, etc. But it will be seen that the physiological and pathological action of a substance as understood by Ayurveda is entirely different from the modern approach. The Ayurvedist does not think in terms of fat, protein, carbohydrates or starch; he does not think in terms of calcium, magnesium, potassium or sodium compounds or salts; he does not think in terms of acid or alkaline reaction. But he does think whether the substance is light or heavy, hot or cold,

agreeable or disagreeable, dry or unctuous, and apply other similar Ayurvedic theories.

The main point which the Ayurvedist considers in deciding the pharmacological action of a dravya is the presence of important Rasas in it. The second consideration is Veerya or the cold or hot action in the body. Vipaka or the effect of the dravya at the time of digestion comes next. Then he studies the prabhava of a drug and along with this action the gunas or the activities in a dravya are also studied.

Our ancient sages have described the virtues of different parts of a tree — the root, stem, leaf, fruit and flower. So remarkable was their minute observation that it enabled them to know the varying potencies and actions of the different parts.

In the Vedic period, a single drug was used many times. The physician used to grow these medicines and very simple formulæ were prepared. There is a reference in Atharva Veda (8th Kanda, 7th Sutra) that they learnt the knowledge about drugs from snakes, birds, cow, goat, sheep, etc. This is corroborated by the modern physician Osler who says that in the beginning man learnt the use of drugs from animals and birds. The Ayurvedists also had knowledge regarding the season of various herbs. They have mentioned the season in which each dravya should be used. There were specific rules and regulations for bringing the drugs, herbs, etc. We also find references to solutions, infusions, decoctions, tinctures, fluid preparations, distillation, sublimation, evaporation, clarification, decolouration, filtration, emulsions, colloidal solutions, flavouring, impregnation, preservation, maturation, containers, etc.

The drug whose name, form and properties are not known and the drug that is not properly administered will cause disaster and the art of prescribing drugs can never be attained without a knowledge of their specific measurements. In ancient times there were two systems of weights known as Magadha and Kalinga just as we today have the Imperial and Metric measurements.

The Ayurvedists gave due importance to posology, because after the examination of a particular drug and herb a recipe is prepared and thereafter the question which confronts one is in what dose, at what time and in what weight it should be administered so that it is most beneficial to patients? Ayurvedic posology also considered that no part of disease should remain in the body after a drug is used and at the same time patients should not be harmed in the least.

Modern medical science insists on the following points to be borne in mind: age, weight, toleration, intolerance, idiosyncracies, mode of administration, mental emotion, temperature, proportion of drug, rate of exhilaration, cumulative action, disease species and

therapeutic ratio with minimal dose, maximal dose and therapeutic dose. This is termed Posology. In Ayurveda a physician has to keep in mind Doshas and Dushyas, Desha (country), Kala (time), Sharira make-up (constitution), diet, gastric fire, age, type of digestive system, stage of disease, strength of the patient, etc. There is thus much resemblance in thinking of both the Ayurvedic and Allopathic systems on posology. In ancient times also very minute measurements were given for determining the exact dose of a drug and sometimes very general illustrations were given to describe the quantity of a particular drug.

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THE ART & SCIENCE OF PHARMACY

We have today chemists and druggists who supply us medicines and drugs in ultra-modern packings and who also carry out dispensing. In this context it would be interesting to know what the procedure was of obtaining drugs in ancient times.

In the past usually every Ayurvedic physician used to prepare the drugs and remedies at his own dispensary. We mention below the various preparations and the methods employed.

POWDER OR CHOORNA — The raw materials known as vana-spati are cleaned and converted into fine powder by manual labour, there being no machines for pulverising at that time. This powder is then filtered through a cloth and kept in a clean vessel.

The raw materials used are the dry herbs. From the five parts of a tree, the root, stem, flower, leaves and bark, either one or all of the parts are also used. It will be further interesting to note here that in many cases the distinctive virtues of the flowers, of the leaves, of the bark and of the stem were wonderfully discovered and special mention of the use of a particular part of the tree was also made.

Thus the powder or choorna is one usual form of preparation. Two to three herbs go into the making of one choorna, while as many as forty to fifty drugs are used in the preparation of some choornas. They have named these choornas in two ways — either the whole remedy is known by the name of the chief ingredient (e.g. Ashwagandhadi Choorna, which was made out of Ashwagandha, the chief ingredient, plus other drugs) or the drug was named after its particular action (e.g. Malasudhi Choorna, the powder which removes and clears the faeces from the rectum).

In this way names are available of many hundreds of Choornas. In addition, there are many formulae given describing mainly the ingredients, where no names based either on the chief ingredient or action are given.

References are available prescribing that drugs prepared from such raw materials should not be kept more than six months as there is an expiry period and the properties of the drug are expected to last only six months.

PILLS — Another preparation takes the form of pills. Dry herbs are brought and powdered together, the powder is then mixed in

juices of various fresh plants and a paste is formed, out of which pills are prepared with the help of the thumb and the first two fingers. These pills are then kept in sunlight or shadow and dried. Pills of various sizes ranging from the very small to maximum swallowable sizes are described in the texts.

The mixing of the powder in juices of various medicinal plants was naturally done not merely to convert the powder into paste but these various juices known as Swarasa (own juice) contained properties of benzene which, in turn, increased the properties of the drugs.

This form of medicine is known as vati or guti, meaning the pill.

DECOCTIONS — Decoction is another method of preparing the medicine. These decoctions are really very effective. The simple procedure is to take the prescribed dose of a particular powder, add about 8 to 16 times water, boil it till the mixture is reduced to $\frac{1}{4}$ th or $\frac{1}{8}$ th of its original volume and then filter it. One dose of medicine is thus obtained. The residue is used by adding further 8 to 16 times water, allowing it to remain for 8 hours and then reboiling and refiltering it. That would be the second dose. Every time fresh decoction has to be prepared. Sometimes the decoction is prepared and kept in a bottle and divided into 3 or 4 doses.

Sometimes, prior to preparing these decoctions the drugs are kept immersed in water for 24 hours so that the properties would be more fully assimilated in water.

The powder to be prepared for the decoction is not so fine as in choorna. Here the raw material is powdered in a coarse form because the whole powder as such is not to be taken in but only the decoction.

ASAVAS — As this art developed they got the idea that instead of preparing fresh decoction every time a formula could be devised whereby the decoction could be preserved. So they invented the formula of preparing from the decoction of the plant juices the drugs known as Asavas and Arishtas. These drugs are known as tinctures and contain self-generated alcohol in a very mild proportion, the actual alcohol percentage varying from 6 or 7 to 10 or 12, according to the ingredients used. It will be interesting to note that the Ayurvedists have described the medicinal properties of various wines and tinctures but they have considered these tinctures purely as medicines to be taken only when a cure is required. The tinctures never took the place of drinks or wine.

Today the same Asavas and Arishtas are prepared by the pharmaceutical concerns of Ayurvedic drugs. Even some individual

Ayurvedic physicians prepare them at their homes. Each Asava or Arishta is known by the typical major ingredient it contains e.g. the Asava which has draksha (grapes) as the main ingredient is known as 'Drakshasava'. Similarly from Angur, which is a bigger type of grapes, Angurasava is prepared.

LEHYAMS — Another form of medicine is known as 'Lehyam' or jelly. In a syrup base all the ingredients are added and a jelly is prepared. This is also known as Awalehya and is one of the very popular ways of giving the drug. The jellies are prepared in a semi-liquid form or a little harder, so that they could be preserved; in fact, they are prepared in such a scientific manner that they remain unspoil for months. They resemble jam, tomato sauce or ketchup.

Thailam or Ghee (Ghritam) — Special oils, i.e. Thailam or ghee are also prepared. A decoction of the drug is made and then it is reboiled with oil or ghee as a base. Reboiling takes place to a point where the water part is evaporated and only the essence remains. This oil and ghee are also known by the name of the chief ingredient or by their action. They are consumed internally or used for external massage. Hair oils and such other Ayurvedic medicinal oils have been described in plenty in the ancient texts.

Metallic preparations — Metals such as gold, silver, copper, iron, tin, etc. are also used. Each metal is purified. The whole process is known as Shodana. The metal is turned into thin leaves and very fine wires are produced. After making the wire very hot it is immersed in various plant juices. After such purification it is made into fine powder and mixed in juices of effective herbs and further heated and the ultimate product thus prepared would be the oxide of the metal concerned.

These oxides of the metals are so harmless and innocent and yet extremely effective. We will give here only one example. Loha Bhasma or iron oxide is so minute and in such fine form of iron that given internally it does not cause any gastric upset or disorder, is assimilated in blood very soon and increases the haemoglobin percentage very fast, whereas the iron prepared according to modern pharmaceutical method and manner given internally causes gastric upset and disturbance in digestion; also there is colouration of the stool and even by intravenous injection of the preparation of iron the patient suffers gastric upset and other side reactions.

This use of metals finds a reference in ancient texts even a thousand years before Christ but the actual art and science of the use of various metals in medicines was developed somewhere about 1300-1400 A.D., when Nagarjuna, the master brain of Rasa Vaidyas, the father of Rasa Vaidyas, first started making the various metallic preparations. They are known as a part of Rasa Vaidya

because the Rasa is nothing else but mercury. These mercurial preparations are plenty in number. They are usually in the form of oxides. Combining such oxides with the various herbs and drugs and making them in the form of pills or powders, some Rasa preparations known as Rasayana were also made.

These Rasas are given only in very minute doses. Sometimes the most effective Rasas are given in doses of half a grain only, and for children the dose is one-sixteenth to one-eighth of a grain. (The powders which are prepared from the herbs and other raw materials are given in doses of three to six grams at a time or forty-eight to ninety-six grains). The specific oxide of diamond known as Vajra or Hirakā Bhasma or diamond oxide is given in doses of 1/32 to 1/16 grain once a day. Metallic oxides of gold, iron, mica, tin, etc. are given in doses of one to two grains in the proper vehicle or whey either with honey or some powders.

There are strict dietic restrictions with these metallic preparations and especially pungent, sour, spicy, hot dishes are to be avoided and sweets, milk, ghee, butter, butter milk, etc. are given in plenty.

While preparing these oxides, it must be borne in mind, care is taken to prepare them in the finest form (they cannot be re-formed back into the respective metal), so that they easily become assimilated in blood and do not give rise to any side reaction.

The mercurial preparations have been much in use for the last three to four hundred years in India and it is noteworthy that in cases of emergency quick and successful results have been obtained as compared to the drugs prepared from herbs and plants.

Some other preparations known as Manjan are made and they are for application to the teeth (tooth powders). There are also preparations known as Anjan meant for application to the eyes; they are in powder as well as honey-like forms. Then there are Vartis or suppositories. Again, there are many Arkas or distilled water* of various medicines and drugs. They are taken internally or used externally. Salts of various drugs are also prepared known as Ksharas. In this way there were many drugs and medicines prepared by the ancient Vaidyas. However, the skill and art varied with the efficiency achieved by each physician but they used to prepare the medicines under hygienic atmosphere and conditions because rules had been laid down regarding the preparation of these drugs in the ancient texts. Separate treatises have also been written regarding these pharmaceutical industries such as Vaidyaka Paribhasha, meaning the terminology in art of preparation of medicines.

There was a special preparation known as Makaradhwaj, in which first mercury and sulphur are separately purified, then both are mixed together giving rise to a product known as Kajjali (black

sulphide of mercury). This black powder along with gold was retained for about 72 hours; sulphur was burnt away and red mercuric oxide collected at the neck of the bottle in the form of kupi. In this way they used to prepare the chemical compound.

Various types of such mercurial preparations are available, some containing arsenic; others, various forms of other chemicals.

Some references are available to show that pharmacies existed in ancient times and a description of manufacture of so many formulae and so many varieties of drugs such as powders, decoctions, tinctures, distilled waters, pastes, suppositories, etc. suggests that these Vaidyas were conversant with the art of pharmacy. There were various types of bhatthis (ovens) in which the fire to prepare the drugs was built up using cow-dung or wood.

It will be evident from the above-mentioned facts that there was an art and science of pharmacy employed by the ancient physicians and which has come down to us. We do agree that all these medicines were prepared by manual labour and we do agree that there is no direct reference available to machinery; even then each particular kalpa for the preparation was available in ancient times also. Today we are living in an industrial era when all sorts of machinery, equipment and chemical and analytical tests are available. We can develop the occidental art of pharmacy and apply it to our preparations. The effects of the ingredients will naturally remain the same but there will be some standardization. The great skill with which our Ayurvedists prepared the tinctures known as Asavas and Arishtas even today attract the pharmaceutical laboratories of the west and they are thinking of taking this art into modern pharmacy.

The various State Governments and the Central Government are making efforts to bring out an Ayurvedic Pharmacopoeia where all the standard Ayurvedic pharmaceutical preparations will be enlisted, with the formulae, the methods, doses and descriptions. There is a great need for such a pharmacopoeia. Unless and until it is made available, the physician will have to refer to the various compendia of Ayurveda and no standardization of drugs can be achieved.

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EXAMINATION OF A PATIENT

“ There are the petals, the pollen, the corolla, and the stalk, but there is no lotus flower. There is this or that passing idea, this or that transitory emotion, this or that image but no organised whole behind them which can be called the ego or the self. ” — *Lord Buddha*.

AYURVEDA has described in great detail how the examination of a patient should be conducted. The Ayurvedists clearly understood the truth that “ knowledge of a part cannot yield the knowledge of the whole ”. They have made the following statements :

“ The intelligent physician should endeavour to investigate correctly each disease by the use of three means namely authoritative instruction, direct observation and inference.

“ Having considered the disease conditions in all its correlations and from as many points of view as possible, the physician skilful at interpretation should thereafter determine the nature of the disease (diagnosis) and then the line of treatment. The physician who is well versed in differential diagnosis and treatment does not err in the proper discharge of his duties. Such a discerning physician achieves success which results from right understanding. The physician learned though he be who is unable to enter into the innermost soul of the patient by means of the light of knowledge and understanding, is not entitled to undertake treatment of diseases.

“ The physician should first diagnose the disease and then decide the line of treatment and proceed with the treatment in the light of his observations.

“ If the physician begins the treatment without diagnosing the disease properly, even though he may be the best therapist, his success depends purely on chance.

“ But he who knows the differential diagnosis of disease, who is skilled in all kinds of therapeutics and who is well versed in the knowledge of climate, season and dosage achieves success with certainty.

“ The physician who without understanding such modifying factors as climate etc. carries out treatment only by conventional

recipes, will err in treatment, for there are many variable factors to be taken into account, such as age, vitality, physical constitution etc.

“ Therefore the intelligent physician having investigated correctly the ten factors viz. physical constitution etc. should carry out treatment in accordance with these factors and never by mere conventional prescriptions. ”

It will be evident from the above injunctions from Charaka Samhita that the Ayurvedic physician has to be very keen on diagnosis before proceeding with the treatment.

Investigation is carried out in three stages (a) Interrogation of the patient (prasma), (b) objective examination by practical methods (pratyaksha) and (c) objective examination by inference or indirect method (anuman).

Firstly, the evaluation of the vitality of the patient as a whole man in terms of constitution, essential make-up, compactness, bodily proportions, homologation, psychic make-up, gastric capacity, capacity for exercise and age is made.

Secondly, evaluation of the disease condition of the patient in terms of disease process in general, specific etiological factors, particular constitutional factors, particular body constituents and curability or incurability is made.

Thirdly, evaluation of the patient's expectation of life in terms of astrological data, physiognomical data, physical condition (somatological data) and evil prognostic data is also carried out.

A. CONSTITUTION — We have seen in the previous chapters in a nutshell the typical physical characteristics of the Vata, Pitta and Kaphaja physical constitutions but here we will go in detail with each typical symptom of physical constitution of every temperament we come across. There are many factors to be considered such as genetic traits — spermogermic, gestatory period and uterine condition, the diet and regimen of the expectant mother while the foetus was in the womb, and proto-elemental traits. All these genotypical factors have to be considered when deciding the physical constitution of a patient.

Paratypical or environmental factors such as social, familial, climatic (nature of the land of birth, land of nurture and land where disease was contracted), seasonal factors and age come next.

Phenotypical characteristics or individual constitution with reference to diet, behaviour, sleep, homologation, acquired homologation (habituation) with regard to drug, food, drink and activities, proclivity, cleanliness, character, conduct, memory, intelligence,

initiative, gastric fire (regular, irregular, acute or dull), bowel conditions (hard, soft, ordinary), flow of flatus, urine, faeces, menstrual blood, breast milk, sweat, nasal secretion, sebum cutaneous etc., decrease or increase of cerumen, flow of saliva, blood, phlegm and bile, increased or decreased hair growth, increased or decreased nail growth, sense functions, mental condition, strength, previous illness, married or unmarried condition — all these constitutional conditions have also to be considered.

VATA PRAKRITI

Now, in a Vata type constitution, body-nutrient fluid (rasa), seminal secretion, vitality (Ojas), sex libido and progeny are meagre; gastric fire is irregular; body heat is low; hunger is irregular; thirst is little; movements are light and vivacious as is also gait; speech is much, sleep is less; initiative, excitability, perturbability, fear, attachment, detachment, receptive power are all quick; memory is short. There is intolerance to cold. Tastes liked are sweet, acid and salt; there is a craving for unctuous and warm food and drink; liking for music, laughter, chase, quarrel, sudation, hot things, massage and heat. They dream of trees, skies and mountains. Their character resembles that of the goat, the jackal, the hare, the rat, the camel, the dog, the vulture, the crow and the ass.

In natural tendencies and traits they are ungentlemanly, blameworthy, atheistic, unfortunate, ill-favoured, ungrateful, envious, thievish, unable to control passions, given to exertion, hostile, inconstant in friendship, having few friends, fond of company of males, not liked by females, unstable of mind, intellect, self, movement, gait and sight, wakeful, given to chattering of teeth, poor in vitality, wealth, children, length of life and means; face ugly, body lean, spare, long, emaciated, dry, rough, weak and stump-like; teeth very small and rough, abdomen thin, feet rough and cracked, tendons many, veins prominent and much reticulated, eyes protuberant and rough, the appearance of the eyes being uncomely and corpse-like, colour dusky, size small, eye-lashes thin and scanty, pupils dilated, palpebration excessive and rapid, sight unsteady, colour black and swarthy, the special ophthalmic characteristic being that the eyes are open during sleep. The skin is dry, rough, tough, anhydrous and cold. Hair are scanty, rough, dry, dusky and split. Nails are short, rough, dry, tough, dusky and of meagre growth. Sinews, tendons and joints are loose, unsteady, tremulous, rigid and creaking. Movement of eyebrows is quick, jaws light and lips fickle. Footprint is ill-defined, body-weight light, hands, feet and other limbs rough, respiration shallow, body heat low, speech diffuse, dry, feeble, broken, sticky, infirm, depressed and unsteady.

PITTA PRAKRITI

In a Pitta type constitution, seminal secretion, sex libido and progeny are meagre; gastric fire is acute; body-heat, hunger, thirst, eating, drinking, faeces, urine, perspiration and enterprises are abundant; strength is moderate; body odour abundant and stinking; there is intolerance to heat; tastes liked are sweet, astringent and bitter; there is a craving for cold things, liking for garlands, unguents and adorning. They dream of gold, Palasa trees, the sun, Oleander plant, the blazing fire, lightning, fiery glow in the skies, falling meteors. Their character resembles that of the serpent, the tiger, the cat, the monkey, the owl, the bear, the Gandharvas, the Yakshas and the mongoose.

In natural tendencies and traits they are disinclined to strain, unattractive to women, clean, intolerant, ostentatious, radiant, valorous, proud, irritable, irascible, venturesome, fond of disputation in assemblies, difficult to subjugate, hard towards the unbending, affectionate towards dependents, moderate in wealth, means, length of life, knowledge and understanding.

Their face is delicate and white; body soft, loosely knit and disproportionate; teeth clear; feet copper-coloured; eyes small, tawny in colour, with a special ophthalmic characteristic tendency to go red quickly from anger, intoxication and exposure to sun; colour of nails, palate, tongue, lips and hands is of copper. The skin is marked with an abundance of freckles, moles, black-heads and is hot and hyperhydrous. Hair are scanty, soft, yellowish, tawny, inclined to fall off, go grey prematurely, or bald, sparse and curly. Sinews, tendons are joints are flabby. Respiration is warm and heightened.

KAPHA PRAKRITI

In a Kapha type constitution, body-nutrient fluid, seminal secretion, vitality, sex libido and progeny are abundant; gastric fire dull; body-heat, hunger and thirst meagre; strength abundant; sleep abundant; initiative, excitability, perturbability, fear, attachment, detachment, receptive power, all these are slow; memory long. Tastes liked are pungent, bitter and astringent; there is a craving for dry things, liking for sciences, scriptures, heat, sleep, music and indolence. They dream of birds, garlands, lotuses, Cakravaka, reservoirs and clouds. In childhood they are not marked by excessive crying or waywardness. There is an abundant growth

The references to similarities with animals (or demons or gods) are on the basis of certain qualities which are associated with them in other Indian literature etc.

of nails and hair. In character they resemble the lion, the bull, the elephant, the horse, the swan, the Garuda, Brahma, Rudra, Varuna and Indra.

In natural tendencies and traits they are gentlemanly, righteous, god-fearing, prosperous, well-favoured, grateful, self-controlled, lustrous, merciful, steadfast in friendship having many friends, endearing to women, stable of mind, given to exercise, clean, straightforward, modest, fair-spoken, given to measured and deliberate speech, forbearing, dignified, generous, endowed with keen mental acumen, intelligent, possessed of great enthusiasm, endowed with understanding, implacable in enmity, slow of grasp, farsighted, procrastinating, wealthy, learned, awe-inspiring, tranquil and long-lived. They have a delicate, good-looking, white, glossy, clear face; their body is plump, glossy, soft and fleshy, fully developed, well-proportioned, solid, compact and firm with large and fleshy forehead, wide and plump chest, thick abdomen, long arms, well-knit and strong joints, well padded bones, well knit flesh, glossy, comely red-cornered eyes, white in colour and large in size, long and thick eye-lashes, dark and blue pupils, copious secretion, scanty and slow palpebration, steady sight, the special ophthalmic characteristic being that the eyes are highly glossy, well displaying the whites and blacks and furnished richly with eye-lashes. The skin is unctuous, soft, smooth and cold; hair plentiful, soft, glossy, smooth, dark blue, firm, well-rooted, wavy, close and long. The nails are long, soft, glossy, smooth, white, well-rooted and thick. Sinews, tendons and joints are firm, well-knit and compact. Movements of the eye-brows are slow, jaws heavy and lips steady. Their gait is proud, resembling that of a stately elephant; footprints well defined; hands, feet and other limbs smooth and glossy. Speech is clear, deep, resembling the sound of the clouds, the drum and the lion.

B. ESSENTIAL MAKE-UP: The essential make-up of a person is divided into eight types with a view to find out the individual difference relating to strength and vitality. These eight types refer to skin, blood, flesh, fat, bone, marrow, semen and the mind. Those in whom all the elements are in perfect tone are very strong, endowed with very happy circumstances, able to bear strain, self-confident in all enterprises, given to good pursuits, of firm and well-knit bodies, firm in tread, of resonant, mellow, deep and big voice and are possessed of happiness, power, wealth, pleasure and honour. They are slow in ageing and comparatively resistant to disease and also have offspring of similar qualities in great number, and are long-lived. The contrary qualities indicate imperfect tone of these elements (Car. Vim. 8. III).

We narrate here the symptoms of each type of person :

(1) With Rasa (Twaka Sara) or skin constituent at its best: This person is characterised by the skin which is shining, glossy, smooth, soft, clear, fine and covered with meagre, deep-rooted and delicate hair. (He is happy, prosperous, authoritative, with ample means, intelligent, learned, healthy, enthusiastic and long-lived).

(2) With blood constituent at its best: This person is characterised by the fact that his eyes, ears, mouth, tongue, nose, lips, palms, soles, nails, forehead and the phallus are ruddy in colour as also lustrous. (He is happy, highly intelligent, magnanimous, delicate, moderate in strength, incapable of bearing hardship and intolerant to heat).

(3) With flesh (Mamsa Dhatu Sara) constituent at its best: This person is characterised by the fact that the temples, forehead, the nape of the neck, eyes, cheeks, jaws, neck, shoulders, abdomen, arm-pits, chest, hands, feet and joints are firm, heavy, well formed and well-padded with flesh. (He is wealthy, learned, happy and bestowed with the qualities of endurance, resolution, steadfastness, rectitude etc.).

(4) With fat (Meda Dhatu Sara) constituent at its best: This person is characterised by unctuousness of complexion, voice, eyes, hair, nails, teeth, lips, urine and faeces. (He is wealthy, authoritative, happy, having ample means, generous and requires treatment of mild medication. He is also characterised by unctuous sweat, enormous body and tolerance to strain).

(5) With Bone (Asthi Dhatu Sara) constituent at its best: This person is characterised by the thickness of heels, ankles, knees, elbows, collar, bone, chin, head and body joints as also by the thickness of bones in general, nails and teeth. (He is very enthusiastic, industrious, endowed with the power of endurance, compact and firm body and long life).

(6) With Bone-marrow (Majja Dhatu Sara) constituent at its best: He is characterised by softness of limbs, strength and unctuous character of complexion and voice and by thick, long and rounded joints, deep voice and large eyes. (He is long-lived, possessed of learning, wealth, knowledge, progeny and honour).

(7) With Semen (Shukra Dhatu Sara) at its best: He is gentle-eyed, with eyes appearing as if filled with milk and highly sexed. He is possessed of glossy, rounded, sound, symmetrical and compact and beautiful teeth. His complexion and voice are clear and unctuous. He is full of lustre and has broad hips. (He is a favourite with the opposite sex. He is strong and endowed with happiness, health, wealth, honour and progeny).

(8) With mind (Sattwa Sara) at its best: Such a person is possessed of remarkable memory, devotion, gratitude, intelligence,

purity, enthusiasm, efficiency and bravery. He is a valorous fighter in the battle-field and free from dejection. He has a steady gait and his judgment and actions are deliberate. He is also devoted to good pursuits.

Emphasis has been laid on examination of the patient with reference to all the above essential bodily systems as :

“ otherwise the physician may be deceived by the appearance of the body merely and conclude a man to be strong because of his robustness, a man to be weak because he is emaciated, a man to be exceedingly strong because he has a big body, or a man to be possessed of very little strength because he is small in body. There are persons who appear small in body and emaciated but are strong. For they are like the ant which carries relatively great loads ”.

C. COMPACTNESS — Compactness, union and assemblage are synonymous. A compact body contains bones which are symmetrical and well-knit, joints that are again well-knit and well placed flesh and blood. Those with a well compacted body are strong; those with an ill-compacted body are weak; and those with moderately compacted body are moderately strong.

D. BODILY PROPORTIONS — Length of life, strength, vitality, happiness, authority, wealth and other desirable qualities are dependent on the proper proportions of the body. The contrary conditions are found in the case of the body that falls short of or exceeds the right proportions.

The body and its members are to be judged separately with reference to their size, height, breadth and length. The following parts of the body should be measured : the feet, calves, knees, thighs, scrotum, phallus, vagina, waist, top of the pelvis, abdomen, the sides, chest, cardiac region, shoulders, shoulder girdle, arms, forearms, hands, axilla, sacrum, back, neck, face, mouth, chin, lips, ears, inter-ocular distance, nose, forehead, inter-mammary distance etc. These measurements were taken with the patient's own fingers. The ancient texts have mentioned the ideal measurements.

E. HOMOLOGATION — Those to whom ghee, milk, oil, meat-juice and all the six tastes are homologous are strong, tolerant of hardships and long-lived. Those to whom dry things and only one of the tastes are homologous are of low vitality, unable to endure hardships, short-lived and admit of mild medication. Those of mixed homologation are of moderate strength.

F. PSYCHIC MAKE-UP — The mind is termed the psychic element. It is of three kinds. Therefore human beings fall into three

psychic groups, viz. the highly endowed, the moderately endowed and the poorly endowed in mental powers.

The highly endowed are found to be unperturbed even under severe affliction by reason of the preponderance of the Sattvic element in their psychic make-up. The moderately endowed are those, who keeping the example of others before their eyes, exercise self-control by emulation or are made to exercise self-control by emulation or are made to exercise self-control by the influence of others.

The poorly endowed are those in whom self-control is absent since they are unable to control themselves either of their own accord or with the help of others. These people are found to be unable to bear even slight pain.

The ancient texts have mentioned these three kinds of patients, Prawara, Madhya and Alpa Sattva.

G. GASTRIC CAPACITY — The digestive capacity was to be judged in terms of the capacity of ingestion and digestion — whether high, moderate or low.

H. CAPACITY FOR EXERCISES — Capacity for exercises or effort syndrome was to be judged in terms of capacity for putting forth effort. From the capacity for effort, the measure of stamina was inferred as high, moderate or low.

I. AGE — Age denotes the state of the body as a result of the passage of time. It is divided into three main parts, viz. early, middle and old age. Early age covers the juvenile period (immature body elements; up to 16 years, Kapha dosha preponderating) and the prime period (body elements maturing; the psychic element still unestablished; up to 30 years). Middle age extended up to 60 years (fully developed in body and the psychic element stabilised, Pitta dosha preponderating). Finally old age lasting up to 100 years (body elements beginning to disintegrate, Vata dosha preponderating). In relation to age, subsistence up to 1 year is on milk, up to 2 years on milk and cooked food, after that on cooked food, there is growth up to 20 years, youth up to 30 years, maturity up to 60 years and waning up to 100 years. It was necessary to take age into consideration as medicines vary according to age.

Examination of the patient is then conducted with reference to the disease condition in general. The etiological factors (general and special), the premonitory symptoms, and signs and symptoms (general, special and pathognomonic), homologatory and non-homologatory signs and symptoms relating to drugs, diet and practice, the disease course (origin, progress and full development) are considered by interrogation. The following advice has been given:

“ A wise physician should first examine the signs and symptoms of the disease before commencing treatment of curable diseases.

“ The five-fold knowledge of etiological factors, premonitory symptoms, signs and symptoms, homologatory signs and disease course constitutes complete knowledge of disease.

“ Homologation is the alleviation of disease through drugs, diet and practice which are directly contrary or contrary in effect to the etiological factors or to the pathological condition.

“ Latent or ambiguous condition of disease should be diagnosed by homologatory or non-homologatory tests. The premonitory symptoms are those which give rise to and indicate the approaching disease.

“ Counter measures can be taken against the approaching disease by recognising the manifestation of the distinctive premonitory sign which indicates exclusively the nature of the morbidity generating the coming disease.

“ The ignorant physician who only observes the external aspect of the disease and does not correctly evaluate the contribution of factors like psychic make-up etc. is mistaken with regard to the intensity of the disease.

“ The wise physician on the other hand studies the case in all its aspects using all methods of approach and seldom makes a mistake in administering proper treatment. ”

Physical examination of the patient is made with the eye, thumb and palm, the nose, the ear and the tongue.

Examination with the eye is made particularly of nails, eyes, eye-lashes, eye-brows, nose-teeth, lips, hands, feet, hair of the hand, body-hair, sides of the neck, respiration, pupils, urine, faeces, shadow, reflection, and lustre. It is considered whether there is a decrease or increase, depression or exhilaration, dryness or unctuousness. Colour, location or shape, size and shadow are also taken into account. (Special examination is conducted where necessary with the help of suitable scientific instruments).

Examination with the thumb and palm — The entire body of the patient is to be palpated to find out the normal and abnormal condition. If the physician's hand is not normal or healthy the palpation is to be done by someone else.

Examination with the palm is done in five ways, palpation, pression, extension, percussion and traction and the following points are considered: whether the particular organ or system is cold or hot, moist or dry, heavy or light, insensitive or sensitive, present or absent, rough or smooth, rigid or loose, depressed or elevated,

painful or painless, immovable or movable, soft or hard, pulsating or non-pulsating, diffused or limited, solid or fluid. Particularly eye, eye-brows, temples, throat, palate, lips, forehead, jaws, nose, ears, hands, feet, knees, thighs, ankles, wrists, hips, abdomen, sides, spinal column, groins, rectum, testes, phallus, umbilicus, breasts, ribs, etc. are examined. (Here also, scientific instruments are made use of where necessary).

Examination with the nose — Normal and abnormal characteristics of body odours, pleasant or unpleasant, inexplicable and persisting are noted.

Examination with the ears — Gurgling of the intestines, cracking of the joints and knuckles, sound produced by knuckles, sounds emanating from the heart, the lungs and other parts, characteristics of the voice, sounds produced by percussion with the fingers, other sounds observable in the body, wheezing, sounds in the cardiac and other regions, abnormal speech such as inarticulate, impeded, indistinct, broken, feeble or loware observed.

Examination with the tongue — The special characteristics to be known with the organ of taste in such disease conditions as diabetes, etc. are ascertained by inference in the following manner : change of taste in the patient's mouth — by interrogation ; vitiation of the body-fluid — by observing the exodus of lice, etc. from the patient's body ; sweetening of the body-fluid — by observing the swarming of flies ; vital blood — by its being accepted by dogs, crows, etc. ; bilious blood — by its being rejected by dogs, crows, etc.

Examination by the method of inference is then carried out, where the gastric fire is decided by the power of digestion ; strength by capacity for exercise ; sense faculties such as hearing, etc. by their power of perception ; mind by the power of concentration ; understanding by the purposeful nature of the action ; passion by strength of attachment ; ignorance by lack of understanding ; anger by violent action, grief by dejection ; joy by exhilaration ; pleasure by the sense of satisfaction ; fear by despair ; fortitude by cheerfulness ; vitality by enthusiasm for enterprise ; resolution by absence of vascillation ; inclination by likes ; intelligence by power of comprehension ; wits by correct recognition ; memory by power of recollection ; modesty by bashfulness ; character by conduct ; aversion by avoidance ; motive by subsequent performance ; steadiness by the absence of fickleness ; docility by compliance ; age, predilection, homologation and etiological factors by the stage of life, residence, homologatory signs and the type of pain respectively ; disease with latent symptoms — by homologatory and non-homologatory tests ; degree of morbidity by intensity of provocative factors ; imminence

of death by evil prognostic signs ; expectation of recovery by auspicious inclination, clarity of mind by absence of disorder.

“ Inference is that which having its basis in observation enables one to conclude in three different ways and with reference to all the three divisions of time. Thus we infer the unseen fire from the observed smoke as also (the past act of) mating from the (present) signs of pregnancy. In this manner the wise infer the past from the present and similarly the future from the present as the unborn fruit from the seed having observed in life the formation of the fruit from the seed.” (Car. Sut. Ch. II).

Now we may pass on to deal with the symptoms of imbalanced Dosha i.e. when the Dosha is either increased or decreased. A good description of the process of vitiation is also given, for this would explain how a disease originates.

The increased or decreased condition of Dosha may be the hyper or hypo state of the particular Dosha resulting in the uneasiness of body and mind. The vitiation process is divided into the stage of provocation, the stage of diffusion, the stage of location giving rise to premonitory symptoms and finally resulting in the disease. The exposition of this whole process may be termed as Ayurvedic pathology. The next stage is known as the stage of manifestation and the last is the stage of termination.

Let us first examine the symptoms of increased and decreased Doshas.

The increase of Vayu gives rise to harshness of speech, emaciation, swarthisness, throbbing of limbs, desire for hot things, insomnia, lack of vitality, constipated stools, tremors, constipation, impairment in the functions of sense organs, giddiness, depression, roughness of the skin and hardness of the skin, sometimes loss of consciousness, ostealgia, atrophy of bone marrow, fear, anxiety, grief, etc.

When Vayu is decreased, movements are diminished, there is depression, stupefaction, limbs become weaker, patient is predisposed to disease due to increase of Kapha, Anorexia, nausea, great variability of gastric appetite, etc. are also marked.

When Pitta is increased it gives rise to pyrexia, desire for cold things, decreased sleep, loss of strength, weakness in the senses, fainting, yellow colouration of faeces, urine, eyes and skin, excessive hunger, thirst, burning sensation, hyper acidity, impairment of vital essence (Oja), bitter taste in the mouth, depression of the oliguria, yellowness of body and limbs.

When there is decrease in Pitta, dyspepsia, anorexia, indigestion, roughness of the body, tremors, heaviness, pallor of nails and eyes, increase of mucus, hypothermia, lack of lustre, algidity, stiffness, irregular pain and burning are caused.

Increased Kapha gives rise to coldness, heaviness, depression, torpor, overadhesion of joints, ptyalism, lethargy, dullness of appetite, dyspnoea, cough, pallor of stools, etc., corpulence, blocking of channels, nausea, fainting, atony of limbs, whiteness of skin, somnolence, etc.

Decreased Kapha results in dryness, absence of Kapha in usual seats except stomach, thirst, giddiness, debility, looseness of the joints, wakefulness, cramps, tachycardia, dehydration, aching, burning, heat, trembling, loss of consciousness, fuming.

Thus the physician decides by the symptoms mentioned above whether any large variation in Doshas has occurred which would be either dosha-*vridhhi* or dosha-*kshaya*, i.e. increase or decrease in dosha respectively.

Here also it should be borne in mind that there are always three aspects to be kept in view of doshas, viz. normality, decrease or increase. We have also seen the physical properties of each dosha. Now, when a particular dosha is decreased in the body, the physical properties resulting from that dosha's presence in the body will naturally be decreased; and when there is excess of a dosha, the physical properties resulting from the presence of that dosha in the body will naturally be increased. Hence increase and decrease of a particular dosha in the body is the most important factor to be diagnosed, because the main principle of Ayurvedic treatment lies in correcting the imbalance by increasing the decreased dosha and decreasing the increased dosha and thus bringing all the doshas in equilibrium.

Now we will see the stage of accumulation of doshas. Due to accumulation of Vata there is fullness of abdomen. Due to Pitta accumulation there is Icteric pingle as well as hypothermia, i.e. low temperature. Due to accumulation of Kapha there is heaviness of the limbs and lassitude and the general symptom of accumulation of each dosha is the repugnance to the causative factors, i.e. dislike of the causative factors.

The accumulation of Vayu takes place in summer, the aggravation in monsoon and mitigation in autumn.

The accumulation of Pitta occurs in monsoon, aggravation in autumn and mitigation in early winter.

The accumulation of Kapha starts early in winter, aggravation in spring and mitigation in summer. It will be remembered here

that there are three main types of yearly divisions known as winter, summer and monsoon, each again divided into two sub-seasons making 12 months or a year. Naturally as Ayurveda was written in India and practised in India, the seasonal approach is also purely Indian. Application of Ayurvedic principles to the western countries will have to be modified according to the seasons there.

We will now see the stages of provocation, diffusion and location.

Stage of Provocation — Symptoms are pain in the abdomen, excessive movement of the abdomen by Vata, acid eructation and all-round burning sensation due to Pitta and aversion to food, nausea, with a general feeling of being sick.

Stage of diffusion — In this case the doshas leave their seats and diffuse all over the body. The commentator Dalhan describes the difference between provocation and diffusion giving the example of ghee. When we heat a ball of ghee, the movement of ghee is 'provocation.' After boiling, bubbling starts which is the stage known as 'diffusion', when the ghee does not remain level but rises high. Painful feelings, gurgling in the abdomen and misperistalsis are due to Vata diffusion. Extremely uncomfortable hot sensation as well as scorching sensation, all-round burning sensation and fuming sensation are caused by Pitta diffusion. Anorexia, indigestion, excessive fatigue and vomiting are observed in case of Kapha diffusion.

Stage of location — The diffused or wandering doshas find suitable accommodation elsewhere in the body, settle there and build up disease. The texts give the premonitory symptoms for each disease which are observed at the stage of location.

Thus it will be seen that the pathologists after recognising the Tridoshas or the three active principles in their normal physiological states have also explained the abnormal condition stage by stage, increased or decreased, which usually occurs in our body in daily or normal routine and which can be adjusted very easily, and thereafter the pathological condition in which the actual form of disease occurs. Separate treatment for the different stages of accumulation, provocation, diffusion, etc. has also been given. A patient usually comes to the physician in the stage of manifestation of the disease but sometimes he may recognise the disease condition in any early stage of accumulation, provocation or diffusion and may approach the physician at that stage. A clever physician must not make a mistake in recognising the correct stage. In this connection we will reproduce a passage from the texts giving a clearer idea :

“ The Tridoshas when increased manifest their characteristic symptoms in proportion to the intensity of their morbidity.

When decreased they cease manifesting their characteristic qualities and when normal they perform the normal functions of the body." (Car. Sut. Ch. 17. St. 62.)

"A person who has suffered diminution of a particular dosha, body constituent or body secretion or loss of strength will naturally crave for the food and drink which is supposed to replenish the particular deficiency." (Sus. Sut. Ch. 15. St. 29.)

"Increase in the natural actions in the position indicated in the increase of doshas, the normal, the decrease and the increase of doshas are thus diagnosed. In view of the diversity of individual constitutions and the unstable nature of things, there is no prescribed measure with respect to the quantity of doshas, body constituents and body secretions. Hence any disturbance in the equilibrium of the doshas, etc. is to be determined by the skilful physician's observations in the proper functioning of the senses. The doshas, the body constituents and the body secretion are the fundamental basis of the body". (Ast. Hrd. Sut. Ch. No. 2. St. 1.)

It will be observed here that after determining the nature of the three active principles, Vata, Pitta and Kapha as the maintaining factors of normal health and after finding out the effects of the imbalance in the equilibrium of the Tridoshas, the Ayurvedists went deeper still to find out the type of imbalance that took place and they described the three phases of the doshas, waning, aggravation and expansion. This is known as Amsaamsha Kalpana where judging which dosha, in what quantity, is decreased; which dosha, in what quantity, is increased; and after deciding the type of imbalance, measures were suggested in diet and practice and in drugs by which the decreased doshas are brought to the normal level, the increased doshas are reduced to normal level, and the Tridoshas are brought in equilibrium whereby the patient gains normal health. While doing so, the particular season, the country, and other outside factors were also considered; but at the same time great importance was attached to the particular person who was the field of the treatment and that was the approach followed in treating the patient as a whole.

The Ayurvedists were keen and great observers. We read in the Arabic tales the story of a traveller who met some persons who had lost their camel. He enquired from them whether the camel was blind in one eye, whether it was limping and whether it carried any sugar on its back. The owners of the camel were surprised and suspected that the man must have found the camel and was not going to give the camel back to them. But the traveller told them that he had come to the conclusion that one camel, and only one camel,

had passed that way because he saw footprints of only one camel; that there was apparently something wrong with one of its legs because three footprints were clearly visible while the fourth was not so clear; that the camel could see with one eye only because he found that leaves of trees on one side of the road alone were eaten away; and that as he found black ants on particular portions of the road, something sweet must have fallen from the back of the camel. At this explanation the owners were very much pleased and they made a further search and found out the camel.

The traveller was indeed a keen observer. This power of observation was developed by the Ayurvedists to such an extent that they used to mark the typical aspects of a particular personality and the deranged condition. They found out by these particular symptoms the waning or aggravation or expansion of the doshas and by probing, by queries, they found out also the diet, practice and the seasons affecting the normal equilibrium of the Tridoshas.

Next the examination of the patient is made in reference to the increase or decrease of the body constituents known as body nutrient fluid, blood, flesh, fat, bone, marrow, semen and vital essence. The signs of increase and decrease of the seven body constituents have been described as follows:

Rasa (body nutrient fluid) — Signs of increase are nausea and pyalism. Signs of decrease: cardiac pain, palpitation, sense of voidness in the cardiac region, thirst, intolerance to sound, heart-beat on slight exertion, tachycardia, dryness, fatigue, dehydration and depression.

Blood — Signs of increase are ruddiness of limbs, redness of eyes, fullness of blood vessels, enlargement of spleen and tendency to spread. Signs of decrease: roughness of the skin, craving for acid and cold things, cracked, withered and dry condition of the skin and flabbiness of blood vessels.

Flesh — Signs of increase are increase of flesh and heaviness of body. Signs of decrease: shrivelled condition of fleshy parts, dryness, pricking pain, weakness of limbs and flabbiness of the arteries.

Fat — Signs of increase are unctuousness of limbs, increased fat on the abdomen and on the sides of the body, fetor, cough, dyspnoea even on slight exertion. Signs of decrease: dryness, voidness in the joints, cracking sounds in the joints, sunken eyes, enlargement of the spleen, attenuation of the abdomen, desire for fatty and flesh food and exhaustion.

Bone — By increase in the bone constituent of the body, hyper-osteosis and supernumerary teeth result. Signs of decrease are

ostealgia, dryness, odontoclasia, onych clasia, falling off of the hair of the head, body hair, beard, nails and teeth and osteodynia.

Bone-marrow when increased give rise to heaviness in the entire body and eyes. When decreased, giddiness, continued Vata lesions of the bones, arthralgia, osteopore, osteoporosis, porosis, anostosis and oligospermia are observed.

Semen — Increase in semen gives rise to hypersecretion of semen, excessive sexual desire and seminal calculi and decrease gives rise to impotency, Bradyspermatism, hematospermia, phallalgia, debility, pallor, depression and fatigue.

Oja or the Vital Essence, which is the cream of the body constituent, semen, when increased gives rise to satisfaction, plumpness and accession of strength and when decreased it causes fear, fits of absent-mindedness, debility, affliction of sense-organs, dryness, emaciation, fainting, loss of flesh, loss of cognition, delirium and even death.

Examination with reference to body secretions such as urine, faeces and sweat is also made. The increase in the faeces gives rise to symptoms of meteorism, intestinal colic, distension of the abdomen and heaviness. The signs of decrease of the faeces are pain in the sides and the cardiac region, noisy, upward course of the flatus and movement in the stomach.

Signs of increase in the urine are polyuria, frequent micturition, Cystalgia and distension of the bladder. Signs of decrease are Cystalgia, Oliguria, Dysuria, chromaturia, xerostomia and thirst.

Signs of increase in the sweat are fetid skin, itching and hyperhidrosis. Signs of decrease are falling off of the hair, cracking of the skin, rigidity of hair-follicles, dermatrophia, paresthesia and anhydrosis.

It should be well remembered that as the Tridoshas and the seven body constituents are believed to maintain the normal health similarly these three body secretions, faeces, urine and sweat, when they are in normal proportion, are supposed to maintain the health of the human being. They have also their normal actions in the body. Faeces (purisha) is believed to be supporting the body and sustaining the Vayu and the fire, while urine has the action of filling up of the bladder and elimination of the aqueous element, and sweat has the natural function of moistening the body and rendering the skin delicate.

Examination of the patient is also made with a view to determine the curability or incurability of the disease. When the psychic, premonitory symptoms, signs and symptoms are mild, the disease is supposed to be curable with ease. When they are moderate it is

curable with effort. When the deranged dosha and the deranged body constituent are dissimilar to each other, then the disease is easily curable but when they are partly similar it is curable with difficulty.

Disease caused by the morbidity of a single dosha is considered to be milder while disease caused by the morbidity of two doshas is curable with difficulty and sometimes incurable but palliable, while disease caused by the morbidity of all the Tridoshas is considered incurable and immitigable. The shorter the duration of the disease, the more the curability; the longer the duration of the disease, the more the incurability of the disease.

There are many other points given regarding the curability or otherwise of a disease but here suffice it to say that great importance is attached to the duration of the disease, predominance of one or more doshas etc., while considering the possibilities.

The following are the suggestions given: "The physician who knows the differential diagnosis between the curable and the incurable disease conditions and begins treatment with full knowledge of the case and in time, obtains success for his effort without fail. But the physician who undertakes to treat incurable diseases will invariably suffer loss of income, tarnish his learning and fame and earn for himself disrepute and unpopularity to boot." (Char. Sut. Ch. 10. St. 7.) "One who knows the differential diagnosis between curable and incurable disease conditions, as also the right application will not fall into such erroneous mode of thinking as Maitreya and others like them did." (Char. Sut. Ch. 10. St. 21.)

The following further general suggestions are also given: "The person who has got normal equilibrium of Tridoshas, the seven body constituents and the three body secretions as well as normal appetite and one who is more joyous in body, mind and spirit is really healthy and the person otherwise is called unhealthy. Hence the physician who is desirous of action must commence his work after thoroughly investigating all those factors that deserve to be investigated." "Even in matters where the pronouncements of the texts appear to be positive and final, the intelligent physician should avoid being dogmatic. He should exercise his independent reason even in such cases." (Car. Sid. Ch. 2. St. 25.) "Therefore even in the face of a definite direction the physician should use his reason. Success in the treatment of a case where the physician has failed to use his judgment is nothing but a chance cure. The wise physician should carefully investigate even the minutest changes in the hypertrophy, normality and the atrophy of morbid element as well as the strength of the body, gastric fire, vitality and mind." (Car. Sid. Ch. 8. St. 36.)

In addition to the methods described above, an eight-fold examination is conducted of the pulse of the patient, his stool and urine, sputum, skin, voice, tongue and this kind of examination has been in extensive practice for the last three to four hundred years and especially the art of pulse examination has been developed to such an extent over the last three centuries that some Ayurvedic physicians can merely by pulse examination, come to a correct diagnosis. The rapidity of the pulse beat, the volume of the pulse and many other points give a clue as to whether the pulse is of the Vata, Pitta or Kapha type. Usually the Vata type pulse is described as having a snake-like motion; the Pitta type pulse has a jumping action similar to that of a frog; the Kapha type pulse moves slowly and steadily like an elephant or swan.

There is another method of examining the pulse. Three fingers are used. Pressure is applied to the radial artery below the thumb by each finger separately and jointly to decide where the pulsation is more prominent — whether under the first finger, second finger or third finger — and each finger is supposed to be that of Vata, Pitta and Kapha. There is no direct reference in texts like Charaka and Sushruta to pulse examination but it is believed by some that this was included in the Touch Method. However, Bhawa Prakash and Sarangadhara Samhita contain details of pulse examination and although they have been written within the last three centuries, they are also included in the standard texts and hence there is no reason why we should exclude pulse examination just because it is not separately and specifically mentioned in Charaka and Sushruta, the original texts of Ayurveda.

Of the two modes of pulse examination mentioned above, the first is considered more appropriate and scientific by the Ayurvedists. However, the second method of testing by the use of three fingers on the radial artery and determining the state of the doshas is also followed and by a combination of the two methods the final judgment is arrived at.

It is also seen whether the pulse is hot or cold, thick or thin, deep or superficial, regular or irregular. The predominance of a particular dosha is judged from these factors, such as, in Pitta the pulse will be hot, in Kapha and Vata it will be cold. When the doshas are in normal equilibrium, the pulse will also be normal and regular, suggesting a healthy condition, while in abnormal imbalance, the pulse will be either irregular, quick or slow, and on that basis the imbalance condition is judged. Here again, every individual would have his own typical type of pulse, and the clever physician who remains in contact with the patient becomes conversant with his pulse. In new cases more extensive examination is conducted and the Interrogation Method is also made use of.

Again, various descriptions are available of the type of pulse to be met with in different disease conditions. The pulse, for example, would be hot in fever, tuberculosis, dysentery, diarrhoea and so on. A talented physician can also upon an examination of the pulse describe accurately the nature of pain, hunger, thirst, stools, motion, urine and such other details regarding the patient. Of course, in all these examinations, the theory of Tridoshas is not overlooked.

Examination of stool and urine also supplies useful hints to the physician. Whether the stool is solid, semi-solid or liquid, frequency of the stools, whether the stool is sticky or non-sticky, mucus-laden or not, colour and smell of the stool — all these are indicators. The presence or absence of worms is also noted.

The method of examination of urine is also described in detail. Of course, the methods mentioned in Ayurveda are not much in practice but the colour of the urine, smell, quantity, absence or presence of any burning sensation while passing urine, whether urine contains blood, pus or such other abnormalities, are all considered.

Examination of the skin, eyes and urine gives clear indications in diseases like jaundice, where the eyes would be yellow-coloured and the skin and urine would also be yellowish. In the case of some nerve disorders, vision would be defective. References are thus available of the condition of the skin, vision etc. in various diseases.

The examination of the tongue is also given importance. It is seen whether the tongue is spotted or clean, dry, wet or moist or swollen. Tongue gives the real picture of the digestive system.

Here it is interesting to note the original conception of Ayurveda as regards digestion. They arrived at the conclusion that much depends on the digested food juice and the first constituent known as Rasa Dhatu because this Dhatu goes to every part of the body and nourishes all the organs. Hence, the type of Rasa Dhatu that is prepared assumes importance. However, all depends on the strength of appetite and the gastric fire. In the case where gastric fire is moderate or has lost its strength, the ultimate food juice or Rasa Dhatu would not be perfectly fine and this condition is known as Ama Avastha and such juice is considered Sama juice. The condition contrary to this is known as Nirama Avastha, meaning that fine food juice without any undigested portion is prepared and the state of doshas resulting from this condition is known as Nirama.

This idea of Sama and Nirama applies to all the doshas, body constituents and body secretions and it is the duty of the clever physician while examining the tongue to determine whether the Sama or Nirama condition exists. The digestion of Ama is necessary according to the line of treatment prescribed and we will see in the chapter on treatment that separate methods are adopted to secure

digestion of the Ama dosha. In diseases like fever, diarrhoea, etc., treatment is prescribed according to the Sama or Nirama stage of the doshas. The stool which would be Sama would have an offensive smell. It would be sticky and not watery. It would not float on water. Whenever such a condition is present the patient would be having fever and lassitude, with heaviness of the body.

It will be observed that the physician not merely depends on the external appearance of the stool and urine but that, at the same time, he probes into the physical symptoms brought about by the presence of Ama or Nirama condition.

AMA AVASTHA

It should be borne in mind that from the time of Charaka onwards great importance is attached to the Sama or Nirama condition of Doshas, Dhatus and Malas. While defining the word 'Ama', Vagbhata has stated: "the juice present in the stomach and intestines which is not fully and properly digested due to lack of fire, the body constituent thus derived from it known as Rasa Dhatu thus undigested is known as Ama". Great importance is attached to the digestive process going on in the body everywhere because the idea of undigested food juice and digested food juice respectively known as Ama Rasa or Nirama Rasa applies to all the Doshas, body constituents and body secretions separately.

SROTA-DUSHTI

The Ayurvedists believed that there are various channels in the body and these channels carry the food juice, the blood, the chyle, Vayu, Pitta and Kapha from one end to the other or throughout the body. These channels are generally known by the single term Srota. There are so many Srotas in the body and according to the nature of their work different names have been given to them, such as Annavaha (carrying food), Jalavaha (carrying water) etc. These Srotas according to the Ayurvedic line of thinking should be normal and healthy because they also maintain the health if they are in a fine condition. Now, when due to excess of Ama, these channels are blocked, there is hindrance in the path of Vayu, Pitta and Kapha and this blockade of the channels otherwise known as Srotarodha gives rise to many diseases. Separate treatment has been prescribed to remove this blockade from the channels and hence Srota-Dushti, the defect in channel is also to be borne in mind while examining the patient. Ayurvedists have described various systems of Srotas and also described the symptoms of blockade of different channels in the body. They have also mentioned the causes

for these defects. For the general information of the reader, the following are the channels described by Ayurvedists: Pranavaha, Udakavaha, Annavaha, Rasavaha, Raktavaha, Mamsavaha, Medavaha, Asthivaha, Majjavaha, Shukravaha, Mutravaha, Purishavaha and Swedavaha.

In fact, a separate treatise can be written on the causes giving rise to derangement of the various channels of the body and the symptoms of derangement of the various channels. In modern, terminology these channels are referred to as the arteries, veins thorax, lungs, nerves, etc. Though Dhamani (arteries) and Sira (vein) srotas have been described separately and their functions have also been mentioned separately, these are included in Srotas. Ayurvedists have also shown that blockade in a particular channel and particular system will give rise to a particular disease. Thus a defect in Pranavaha will give rise to cough, hiccup, dyspnoea, etc.

Information on examination of various body secretions has also been given. These have been divided into pure and impure, fine or coarse, and the symptoms in each case have also been mentioned. Even the description of the breast-milk which is pure and good for the child and of the impure milk which is unhealthy for the child has been given. The Ayurvedists naturally saw that the correct and pure breast-milk can give increased vigour to the infant and that impure breast-milk can harm its life and cause disease. The description of pure and impure menstrual blood too has been mentioned.

We would therefore emphasise again that the Ayurvedists did not simply believe in giving effective drugs to bring to normality the aggravated condition of Sharira dosha but they used to go in detail and find out all facts relating to the body and then come to a conclusion regarding diagnosis.

Here we have only attempted to give a clear picture of the various methods of examination of the patient. For further details the reader is advised to refer to Charaka Samhita, Sushruta Samhita and Ashtang Hridaya.

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CHAPTER THIRTEEN

TREATMENT

“ The discordance of body elements is called disease and their concordance is said to be normal health. Being characterised by a sense of ‘ ease ’ is the state of freedom from disease, while disease is always of the nature of pain ”
(Charaka Samhita, Sutra Sthana, Ch. IX. St. 4).

THE abovementioned principles are laid down in the texts as a kind of general guide. There is a separate portion in Ayurvedic compilations devoted to treatment known as “ Chikitsa Sthana,” in which the general line of treatment, drugs, dietetic and various practices are given.

Treatment is described according to the stages and types of disease. The general principle is that when any Dosha or Dhatu is aggravated or increased, some substance which has the opposite Gunas or properties should be used so that that Dosha or Dhatu will be reduced and brought to its normal state. When a Dosha or Dhatu becomes deficient in the body it should be augmented by some substance having properties similar to the particular Dosha or Dhatu concerned. Sushruta lays down that a waning Dosha is to be nourished and increased and an aggravated one is to be calmed down; a highly increased Dosha is to be relieved of its excess and when the Doshas are in equilibrium that condition is to be maintained.

The general principle underlying this kind of treatment will be: the cause of the increase of the substances, qualities and action at all times is similarity; the cause of disease is dissimilarity. So it follows that Tridoshas will be aggravated by substances having qualities similar to their own and they will be mitigated by substances having opposite qualities. The same principle applies in the case of Dhatus or body constituents also. Similarly it applies to body secretions as well.

There are four important pillars of treatment. They are the physician, the drugs, the attendant and the patient. They constitute the four basic factors of treatment. Fulfilment of these requirements would lead to an early cure of disease.

The qualifications of a physician are described: “ Clear grasp of theoretical knowledge, wide practical experience, skill and purity

of body and mind : these are to be known as the tetrad of desiderata in a physician."

As regards drugs, "abundance, applicability, usability in multifarious modes and richness of quality — these four are said to be the tetrad of desiderata."

The qualifications of a nurse or attendant are: "Knowledge of nursing, skill, affection for the patient and cleanliness."

Finally describing the qualifications necessary in a patient Charaka says: "Recollection, obedience to instructions, courage and ability to describe his ailments are considered necessary in a patient."

Further, emphasising the foremost place of the physician, Charaka says: "The four basic factors, endowed with the above-mentioned sixteen qualities are responsible for success in treatment. Of these four, however, the physician occupies the chief place, being at once the knower of disease and drugs, the instructor of the attendant and patient and prescriber of medicine and regimen."

Charaka has laid stress on physician's cleverness stating that there are risks attendant upon treatment by a quack. He says: "It is better for the quack to offer himself up in the fire than enforce his treatment on the patient. Like a blind man groping about with his hands in fearful uncertainty, or like a rudderless canoe left to the mercy of the winds, the ignorant physician proceeds in his work full of uncertainty and fear."

Diseases have been divided into different categories and Charaka says: "The physician who knows the differential diagnosis between the curable and the incurable among diseases and begins treatment with full knowledge of the case and in time, obtains success in his effort with certainty. But the physician who undertakes to treat incurable diseases will invariably suffer loss of income, tarnish his learning and fame and earn for himself disrepute and taboo in society."

"The curable diseases are of two kinds: those that are easily cured and those that are cured with difficulty. The incurable diseases also fall into two categories: those that are palliable and those that are absolutely irremediable."

The curables are, again, classified into three fresh categories by reason of their requiring mild, moderate or strong treatment. The incurable ones, being inexorable, admit of no such classification.

The characteristics of an easily curable disease are: "the causes, premonitory symptoms and symptoms are mild; the morbid factor is homologatory neither to the affected body element nor to the constitution of the patient, nor to the traits of the prevailing season; the place of disease is not inaccessible to treatment; the course of

disease is localised in one system, is recent, has no complication and is born of the predominant morbidity of only a single Doshā; the body is in a condition to withstand all treatment and the fourfold requisites of treatment are at hand."

"The formidable diseases are those wherein the causes, premonitory symptoms and symptoms are of moderate strength; when any one of the triad, viz., season, constitution and susceptibility of body elements is homologatory to the morbid factor; the ailments of a gravid and of the aged and of children; those that are not much aggravated by complication; those requiring operative, caustic and cauterizing procedures; those that have gone beyond the incipient stage; those that are located in a part difficult of access; those whose course is localized in one system; those in which the full complement of the fourfold medical equipment is not available; those which have spread through two body systems but have not become very chronic; and those due to the predominant morbidity of only two Doshas."

Diseases of the following description are to be regarded as incurable but palliable: "Those in which the patient, being still possessed of a part of life-span, needs to be kept going by means of strict regimen; those which admit of slight relief but which get readily aggravated from slight causes; those which are deep-seated; those which affect many body elements; those which have lodged themselves in vital parts and joints; those which are constantly relapsing; those which are long standing and those which are born of the discordance of only two Doshas."

The following conditions are both incurable and immitigable: "Those which are similar to the above with the exception of those wherein the expectation of life is still left and the possibility of some relief; which are born of the discordance of all the Tridoshas, which have gone beyond the stage of treatment, which have spread to all the systems of the body, which give rise to sudden and extreme excitement, restlessness and stupefaction, which destroy the sense faculties, which, afflicting weakened constitutions, get greatly aggravated, and which are accompanied with the fatal prognostic signs."

After so much clarification regarding the four basic factors of treatment and giving a clear picture of curability and incurability, Charaka again lays stress on differential diagnosis. He says: "A wise physician should first examine the signs and symptoms of the disease and only then commence treatment of curable ones. One who knows the differential diagnosis between curable and incurable diseases, as also the right mode of application, will not fall into error."

PANCHAKARMAS

The word “ Kriyakrama ” was used as a synonym for “ Chikitsa ” or treatment, “ kriya ” meaning action and “ krama,” the line of action. “ Chikitsa Sthana ” in every treatise or compendium covers the portion of medicine in the texts. Here treatment is described in detail and different chapters have been devoted to different diseases. At the beginning of each chapter the general line of treatment for that particular disease is given and specific mention of the particular line of treatment for the disease is made in a concise form. This portion is known as Chikitsa Sutra. For example, नित्यमेनं विरेचयेत् meaning “ he should be daily given purgatives ”. This is Chikitsa Sutra given in the beginning for Ascites or Jalodara and this becomes the specific line of treatment. Similarly in the case of all diseases where treatment is described by the Ayurvedists, they have started the chapter with the Chikitsa Sutras. Great importance is attached to the Chikitsa Sutras because, according to these fundamental Sutras, a physician may modify the use of various herbs, drugs, remedies, recipes, etc. Importance is attached not so much to a particular effective herb or drug as to the application of the Chikitsa Sutra or specific line of treatment for that particular disease bearing in mind the aggravation of the particular Dosha or the decrease in the remaining Dosha and the need to maintain the equilibrium of Doshas which was the main consideration while giving the particular Chikitsa Sutra for a particular disease. Charaka has further clarified that every disease cannot be named and the physician who cannot fix a name for a particular condition should never be afraid but he should go on examining the aggravation or the decrease of the various Doshas and treat the condition according to the Doshas.

In the various Chikitsa Sutras particular types of actions are suggested known as Vamana, Virechana, Basti, Nasya, etc. These are known as Panchakarmas, meaning five types of therapeutic action or performance. The main idea behind these actions is the purification of the body which is known as Shuddhi or Shodana. Before using any drug, they used to purify the various systems of the body. In the Rasayana treatment, for example, Charaka has attached great importance to purification of the body before proceeding with the treatment, pointing out that a fast colour cannot be applied to a dirty cloth but if the cloth is washed and all dirt removed and it is made fine, neat and clean and then dyed, the cloth will catch the colour very fast. In like manner, a body full of Doshas and Dushyas cannot respond well to effective herbs, drugs and remedies taken straightaway but by various actions of Panchakarmas the body has to be cleansed and if effective drugs are then administered, they will have a spontaneous and everlasting effect. It is emphasised that

while measures known as Shamana, if applied, can subside the aggravated condition, the causative factors and the responsible flora for such diseases remain in the body and the disease is again aggravated when the person comes into contact with predisposing factors but-if once the Shodhana treatment with this typical type of Panchakarmas and other measures is carried out, then the Doshas which become normal are not aggravated soon nor is there any relapse of the disease.

It should be noted that the general health of the patient at that time was comparatively much better than that of the average man today and hence he could stand the various measures of Shodhana treatment. Even at that time, however, the Ayurvedists exempted from the Shodhana treatment children, women, old persons, too much debilitated people and such others. They have further stated that the purpose of Kriyakrama or the line of treatment is to bestow health upon the patient and weak persons become weaker if the Shodhana treatment is performed on them and the main purpose of this line of treatment is to give health and strength to a patient and if by the Shodhana treatment the person becomes weaker, then where is the purpose of the line of treatment? So this Shodhana treatment was restricted to typical conditions; in other cases Shamana treatment or subsiding measures were advocated for the weak and old, women and children, etc.

Again, each of these five types of actions of the Panchakarmas have also their detailed descriptions and Charaka has devoted a separate portion known as Kalpa Sthana, where the rules are laid down how each krama is performed.

The Vamana or the emetic action causing vomiting is considered a specific measure for the treatment of aggravation of Kapha; the Virechana or the purgative action bringing about purgation is considered as the specific treatment for the aggravation of Pitta; and the Basti or the various types of enemas bringing about the removal of Doshas from the Pakvasaya or the large intestines is considered as a specific treatment for the aggravation of Vayu.

For each of these actions there is a list of conditions where each is indicated and a list of conditions where each is contra-indicated. Again, for each of these measures a list of symptoms is given by which the physician is able to know which of these kramas is being properly performed (Samyaka), excessively performed (Atiyoga), insufficiently performed (Heenayoga) or improperly performed (Mithayayoga). The treatment for Ati, Heena, Mithaya or various improperly performed kramas is also suggested. In South India even today these kramas are performed strictly according to the Ayurvedic instructions

laid down in the texts and experts on these kramas are practising and following the routine laid down in the texts.

About six centuries ago, the Rasa Shastra entered the field of Ayurveda and made rapid advance. Mercurial or metallic preparations were given in very small and minute doses and the actions of these drugs can just be compared with those of broad-spectrum antibiotics of today. With this advance, the performances of various Kriyakramas (therapeutic actions) slowly disappeared though the real Ayurvedic physician used to perform the necessary actions of the five types of Panchakarma, and then give even the Rasa Aushadhi or the mercurial preparations.

We will give here, in a nutshell, a general picture of these five types of actions known as Panchakarmas. There are two specific performances, Snehana and Swedana, respectively known as lubrication and fomentation. These two are the Purva kramas or the earlier actions to be performed before the five types of actions. In lubrication ghee, oil, fats and marrow were used for internal and external application and then hot fomentations by various types of heating measures were given. According to the Ayurvedic line of thinking, by these two types of Snehana and Swedana kramas, the aggravated Doshas are brought in the digestive system in either Amasaya or Pakvasaya. By Vamana or emetics they are removed from the upper channel i.e. via mouth and by Virechana and Basti — Anuvasana (oily enemata) and Niruhana (dry enemata) — they are removed from the lower part via the anal canal. It is not possible for us to give here a detailed description because such an account will itself take the shape of a very big book and hence we refer the reader who is interested to the English translations of Charaka Samhita and Sushruta Samhita which are available.

Here we are interested only to show that Ayurveda does not merely give the effective remedies and herbs but there is a specific line of treatment suggested for each of the various diseases and the attack was varied. Emetics for Kapha, Purgatives for Pitta and Enemas for Vayu were suggested and the three important vehicles for each of them were oil for Vayu, ghee for Pitta and honey for Kapha. These various oils and ghees were again prepared in combination with effective drugs which subside Vayu and Pitta and these extremely effective Vata Nasaka and Pitta Nasaka Ghrita or Thail were prepared. Of all the oils, Til oil was considered to be the best. This oil when applied externally by way of massage has the power of strengthening the body and if taken internally through food cooked in it, etc., it reduces the body.

After clarification and purification of the body, treatment to nourish, strengthen and soothe the aggravated Doshas was carried

out. The patient was slowly and slowly brought on the usual diet. It is but natural that with this sort of treatment the patient had to take partial rest and restricted diet.

As we have mentioned in the chapter on 'Materia Medica,' drugs have specific pharmacological actions, such as carminatives, purgatives, appetizers, digestives, etc. Such drugs were used with skill in the disease condition after the purification of the body took place. Usually by the above mentioned five specific methods of treatment, the Doshas were controlled. However, sometimes some further specific treatment was also undertaken. It should be borne in mind that for Kapha, Pitta or Vata, specific measures were taken in each condition.

The line of treatment known as Langhan meaning fasting, or extremely light diet, was also considered in cases like fever, etc. where the Doshas were in heavy proportions and had to be reduced to normality. This treatment was found extremely beneficial, and is being advocated by modern Naturopaths. Bernard Macfadden, the most well known physical culturist in America, made much use of this practice to cure some serious and advanced diseases.

In Ayurveda, treatment for diseases of women and children is described, with all the causes, signs, symptoms and therapeutic measures in detail and it is also being practised today with great success.

The word 'Yoni' is used for uterus and the internal as well as external anatomy is also given. Twenty types of Yoni Rogas are described, of which five are due to Vata, five due to Pitta, five due to Kapha and five due to all the Tridoshas. In these descriptions are included menorrhagia, haemorrhage, dysmenorrhoea, amenorrhoea and such other common ailments of women. The description of leucorrhoea with varied signs and symptoms is also available. Vandhyatwa or sterility, along with infertility, its causes with regard to man and woman, are described together with methods of successful treatment. (The recognition of the Ayurvedists that faults in regard to infertility can lie with man as much as with woman might surprise the modern reader.)

Again, a child was considered as falling into one of the following categories: (1) Child taking milk only; (2) Child taking milk and food; (3) Child taking food only. The dietetic regimen for a new-born infant is exhaustively described. Children's teething troubles with their signs and symptoms are discussed and remedies given. Diseases such as poliomyelitis are also discussed.

The main ideal which the Ayurvedic physician always bore in his mind was to keep the strength and health of the patient. He would avoid any drug which would cure the disease but at the same time

reduce the health and strength of the patient. Instead he would see that though the process of cure be slow, the strength and health of the patient were maintained.

We will now cite a few case histories to bring out the merits of Ayurvedic treatment :

An eight-year old girl, suffering from severe and occasional attacks of dyspnoea and breathlessness was a problem for the practitioners of modern medicine. All the pathological investigations, radiograms and bronchoscopy test were carried out. She was treated with multi-therapy like anti-allergics, anti-asthmatics, antibiotics, anodynes, analgesis, hypnotics and such other remedies. Except for spontaneous relief of a short duration she never got a cure. Her parents, both being modern qualified physicians were all the more unhappy. The little momentary relief which the drugs gave in the beginning did not also continue and the interval between attacks shortened.

Ultimately Ayurvedic line of treatment was undergone. Anti-cough treatment with Abharaka Bhasma (mica oxide), Makaradhwaja along with Chyawanaprash, a nutrient and nervine tonic was given. Dietetic restrictions were also imposed. Slowly and gradually the health and strength of the patient increased and the gap between attacks widened more and more. Ultimately, for a few months there was no attack. Once only the child broke the dietary discipline and suffered again. Thereafter the restriction was continued. The eosinophil count, according to modern terminology, which was always remaining high, returned to normal. Now, there is no description available in Ayurveda of the term 'eosinophil' even though the treatment with anti-cough drugs brought the patient's eosinophil count to normal, her chest became clear, so-called allergy disappeared and the infection which they were suspecting due to high total white blood cell count also vanished. Multi-therapy with anti-infective, anti-allergic, etc. remedies could not cure the complaint, while the Ayurvedic drugs which are never accepted as anti-infective, anti-allergic actions, etc., did the wonder.

We have on occasions criticised a group of eminent modern medical practitioners of India for their stepmotherly attitude towards Ayurveda but there are some exceptions. A general medical practitioner Dr. K. C. Mehta, practising in Bombay, has quoted one case in *Medical Digest* a monthly periodical, brought out by eminent Allopaths. He has described the treatment of typhoid with Suvarna Vasanta Malti, which is usually given in the treatment of phthisis or consumption. Its important function is to improve the digestion and increase the flesh, thus restoring the health and strength of a patient. The same drug has been used with success in the above

case of typhoid. The period of recovery, of course, is not as quick as with Chloramphenicol, but whereas the latter causes many side reactions and severe debility in the patient, the former has no side reactions but gives a lot of stamina, strength, health and new life with vigour. In the case of one of the patients of Dr. Mehta who was being treated with Suvarna Vasanta Malti, the patient had so much courage and stamina that when he found a thief climbing up the adjoining building he got up from his bed and shouted vigorously. Such courage and stamina can hardly be found in a typhoid victim undergoing modern treatment.

(3) Miss P. and Master C., daughter and son of a physician practising the modern system of medicine and who has earned a name for himself, referred to an Ayurvedic physician the case of his children who were suffering from frequent attacks of cold and cough. The Ayurvedic line of treatment which consisted of Chyawanprash, and which increases health and strength, cured the complaints and both the children have been free from further attacks.

(4) Mrs. S., aged 52, wife of a top-ranking industrialist, who had pain in the joints for many years and was treated by physicians of repute, was not relieved of the ailment and ultimately the label of incurability with the astounding name of "Rheumatoid Arthritis" was tacked on to her. The line of Ayurvedic treatment comprised massage, fomentation, simple decoctions and appetizers so that while the digestion of food took place, the mucus formation which was in excess was bit by bit reduced and ultimately the blockage of the channel was removed. There was free movement of the Sharira Rasa or the body nutrient fluid. Drugs known as Swedan, which cause perspiration, also helped. Besides, simple diuretics such as Punarnava and drugs to relieve inflammation, such as, Dashamula, Rasna Saptaka were given. Within a period of a month all the symptoms subsided and after ninety days treatment, the patient had no pain, her weight was reduced by about 16 lbs., pain in the back had disappeared, and the joints were very free. This case which was treated two years ago has had no relapse whatsoever thereafter. In citing this case we have used the words "the wife of a top-ranking industrialist" to bring out the fact that she could afford the best available treatment but that the 'magic' drugs failed.

A millionaire from Ceylon who had visited Russia and America visited Bombay on his way back to Colombo and came in contact with an Ayurvedic physician. He was suffering from diabetes and had consulted all the leading physicians in the world and was told that his condition could only be treated by insulin or the oral blood-sugar reducing agent and even then the disease could never be totally cured. He had been undergoing this treatment for many

years and at times his condition deteriorated. He was put on the simple Ayurvedic line of treatment consisting of drugs like Shilajit, the bitter drugs such as Neema, Karela, Giloya, etc. with Brihat Vasanta Kusumakara. The patient reports from Colombo that his urine and blood have been tested and the urine shows no sugar while the blood sugar curve is normal. He is happy with the treatment because it has increased his strength and given him normal health of which he had lost all hopes and which he had considered a dream of the next birth.

An industrialist owning many mills and factories was operated for cataract in the eye. After the operation he lost normal sleep. At first this was attributed to the drugs used before or after the operation but even after two or three months he could not get proper sleep. Treatment was started with modern tranquillizers. Barbiturates were also tried. The case became more and more complicated. He could not sleep at all and was so much upset by these various drugs causing constipation, gas in the stomach and digestive disturbance and yet not giving him the sleep required. With the soothing and calming drugs of Ayurveda like Moti (pearl), Brahmi, Jatamansi, Shankha Pushpi, etc., the patient started getting normal sleep within a period of two to three months and he now sleeps well, without any interruption and enjoys the sweet fruits of normal health.

In mentioning these cases we must make it perfectly clear that we are not at all against any science or the usage of any patent or proprietary medicine. We are merely putting before the reader the scientific Ayurvedic mode of treatment. It is always for a particular physician to choose at his own discretion a particular system of medicine, and it is for the patient usually to decide what particular line of treatment he should undergo. Our aim in stating the above cases of asthma, rheumatism and chronic cough and cold, and diabetes, is that the common reader, who might have been struck by the sudden and wonderful relief brought about by broad-spectrum antibiotics, might learn about the success which Ayurveda has achieved in cases where modern medicines have failed.

It must be remembered that though the remedies referred to above are effective, harmless and without any side reactions, their application without proper diagnosis is not advocated. The original idea of Ayurveda that drugs should be innocent, having no harmful effects and giving rise to no side reactions and that they should increase the health and strength of the patient has conferred on these simple remedies a reputation of their own. They have also been popular with the masses from the time they have been used in India for nearly 3000 years. Sometimes in the villages of India,

where no medical aid is available, people themselves make use of such remedies with little knowledge about their ailment. Even then no complications arise because the remedies are absolutely harmless and the main purpose of increasing the health and strength of the sufferer is fulfilled. However, we do not encourage this sort of practice and our intention is only to make the reader conversant with the actual position regarding Ayurvedic drugs.

As we have mentioned above, for the last two to three thousand years these drugs have been in use and it is a fact that once an effective drug suiting the Tridosha Siddhant or adaptable to the Tridosha Siddhant has been found and its use established, the drug enjoys a permanent status among Ayurvedic medicines. Unlike modern medicines, germs or organism causing infection never become resistant to such drugs as they treat only Vata, Pitta or Kapha imbalance. Hence the most effective and well-known remedies from the time of Atreya are still used by the Ayurvedic physician with due respect and regard, while in modern medical science newer and newer drugs are invented at such a rapid rate that the inventions of the last decade are a matter of the forgotten past and drugs of the last century are now rarely in use.

There is yet another vital aspect of Ayurvedic treatment and that is of Sama and Nirama concept.

We have given previously in the chapter on Examination of the Patient a description of the Sama or Nirama condition of the Doshas, body constituents and body secretions. The clever physician used to decide by an examination of the patient and the condition of the various organs, etc. whether he suffered from Sama dosha or not and accordingly he used to prescribe the drugs, diet and practices which would result in Nirama condition of the Doshas, etc. For this purpose, fasting was considered to be the best remedy. Fasting usually meant the avoidance of food *in toto* but "fasting" also meant "very light diet". Thus liquid diet like hot water or some juices were allowed. Fasting was, again, prescribed according to the condition and health of the patient because the main principle of the treatment was always to maintain the health and strength of the patient.

Fasting removes the Sama doshas and the body becomes free from undigested portion of various doshas, undigested body constituents and undigested body secretions. According to the health and strength of the patient and the strength of the Sama doshas, measures to eradicate them from the body were adopted, because the Ayurvedists thought that if measures were carried out merely to subside or suppress the Sama doshas by means of drugs, such doshas would remain in the body giving rise to other disorders;

once they are eradicated from the body, the body becomes clean. Hence the clever physician would not attempt merely to palliate or alleviate the Sama condition. Of course, in very rare exceptions, where the patient was too much emaciated or in the case of a child or debilitated man or woman and where measures to eradicate the Sama doshas would be beyond the capacity of the patient, there palliative or suppressive measures were taken. Otherwise, milder or stronger measures were applied with great skill, so that the undigested or Sama doshas, body constituents and body secretions were eradicated from the body altogether and thus the body became clean.

It will be interesting to note here that in surgery also in the case of a swelling, the condition was diagnosed as Sama or Nirama, meaning the first stage or the second stage or the final stage of the swelling and a surgeon was not advised to incise or treat the Sama swelling because by cutting such a swelling it would be difficult to heal it; but surgical methods were advocated when the swelling reached the Nirama stage.

The main treatment for Sama condition is known as Pachana. Sometimes fomentation was carried out and sweat was induced as in diseases like fever; sometimes the time was the measure and the physician used to wait for the Sama condition to turn into Nirama in due prescribed time. It was generally believed that sweet taste or Madhura Rasa, etc. which are increased in Kapha also increased the Sama doshas.

The following three stages were thus noted as taking place gradually: (1) Sama Awastha (undigested — unripe), (2) Pachyama Awastha and (3) Nirama Awastha.

Sushruta says: "Removal of the cause is essence of the whole of the treatment." Find out the cause of the disease and get the patient rid of it.

Sushruta in Sutrasthana gives a classification of diseases as follows:

Diseases are Sharirika (physical or somatic) and Mansika or mental-psychic.

Another classification is (1) Nija due to internal factors and (2) Agantuka or extraneous factors.

Diseases are again divided into the categories such as curable and incurable, acute or chronic or according to the degree of aggravation of the doshas viz. Vatika, Pittika, Kaphaja and so on.

Sushruta has also offered another classification of diseases which has been accepted as a standard one by later physicians.

According to this, pain or Dukha is of three types. The first type may be classified as Adhyatmika or physical disease. The second is Adhibhautika : this is due to disturbances in the environments. The third type is known as Adhidaivika : this is due to nature or any act of supreme God.

The physical unhappiness or Adhyatmika dukha is again divided into three sub-divisions (a) adibala pravritta (b) janmabala pravritta and (c) doshabala pravritta.

Adhyatmika or physical disorders are:

(a) Adibala pravritta. It is due to primary inherent factor. When any defect in spermatozoon or ovum is there, due to this defect, disorders like leprosy, piles, asthma etc. take place. This variety also can be divided under two heads (1) paternal — due to defect in sperm or (2) maternal due to defect in ovum. We can call Adibala pravritta as hereditary.

(b) Janmabala pravritta. This congenital type of disorder occurs when the conceiving lady, during the period of gestation, makes errors in daily routine of diet or practices. Deformity, dumbness, deafness take place. This kind of unhappiness or dukha also is divided under two heads:

(1) Dietetic : where errors are made in taking unwholesome diet and rasa or food juice is spoiled.

(2) Improper hygienic attitude in practices.

The difference between Adibala pravritta (hereditary) and Janmabala pravritta is that in the former there is defect either with the sperm or with the ovum while in latter there is no such defect but the latter is solely due to error of the mother during pregnancy.

(c) Doshabala pravritta. Vayu, pitta and kapha are three doshas which when normal maintain the health. This is called Arogya (health) and this is the sukha (or happiness). When any of this dosha is deranged or vitiated, due to such an imbalance the disorders take place and such disease is known as doshabala pravritta. This also is again due to faulty diet or irregular habits or practices. Sometimes one disease may give rise to other such as pratishyaya (or chronic cold) may give rise to swas (or asthma).

These doshabala pravritta diseases are again classified into two groups, i.e.,

(1) Amashaya samuttha or resulting from stomach. The origin of this derangement is in the stomach.

Or (2) Pakvashaya Samuttha. They have their origin in large intestines.

These Doshabala pravritta diseases are also of two types (1) Shari-rika (somatic) and (2) Mansika (psychic or mental). The former

are due to derangement in vayu, pitta and kapha while latter are due to derangement of Rajas and Tamas — two mano doshas.

Then adhibhautika diseases are as follows:

(d) Samghatabala pravritta or due to external factor. This type is also sub-divided into two groups: (1) caused by an implement or (2) by a ferocious or poisonous animal.

The Adhidaivika diseases are classified as follows:

(e) Kalabala pravritta or seasonal diseases. Due to changes in atmosphere or humidity. This type also occurs when one season is ending and other is starting. This group is also divided into two heads (1) those caused by predominance of characteristics of a season and (2) when during the season these are absent.

(f) Daivabala pravritta. This is due to any curse or divine wrath or some hidden mystic charm. Sometimes by some infection. They may be due to lightning (blitz) or due to malignant cause. These are also produced by (1) association or (2) accident.

(g) Swabhavabala pravritta. These are natural disorders like thirst, hunger, sleep, old age and death. These are divided into two groups again. One is timely, the other untimely. Even though one may observe the rules laid down in swasthavritta or personal hygiene one is bound to suffer old age and death in due course.

The Ayurvedists are very clear on the commencement of treatment.

There should be no delay in the treatment once it is ascertained as curable or sadhya. As the time passes the disease penetrates deeper and deeper. We have described six stages of disease such as (1) Sanchaya (2) Prakopa (3) Prasara (4) Sthanasamshraya (5) Vyakti and (6) Bheda in the chapter on the examination of the patient. Treatment should commence even in the first stage viz. Sanchaya or accumulation of Doshas.

The seats of diseases are also classified. They are (1) SHAKHA : external path or Bahyamarga including skin and dhatus except Rasa. (2) MADHYA, Roga Marga or middle meaning vital parts — marmas (v). (3) KOSHTHA. Internal organs. The physician should decide whether the location of the disease is in the Shakha, Madhya or Koshtha, roga marga.

The general measures to combat each aggravated or vitiated or deranged dosha are also given. Such as:

For aggravated Vayu, a physician should suggest, recommend or carry out (1) Lubrication use of demulcents — Snehana (2) Swedana or fomentation bringing perspiration (3) Mild clarification Mridu samshodhana. (4) Sweet, sour and salt tastes in diet and drugs (5) Enematas especially hot and unctuous (6) Sweet and tonic wines.

(7) Mutton soup, juices, oily enematas, til oil (gingelly) are specific measures. (8) Deepan and Pachan Drugs such as digestives and appetizers (9) Comfort—happiness or sukha to the patients (10) where there is severe vitiation of vayu is found such as in vayujanya unmada (insanity due to vitiated vayu) measures like tying up the patient, torturing the patient etc. have been suggested. (11) Vata samshamana varga or vayu subsiding group a list of vata shamaka drugs is given.

The measures for Pitta suggested are (1) Ghee: this is the best pittahara (2) Sweet and cold purgations (3) Sweet, astringent and bitter tastes in diet and drugs (4) Aromatics (5) Wearing of flowers, pearls and red corals (6) Application in form of powder or paste of drugs like chandana and kapur (camphor) (7) Moonlight (8) cool breeze (9) cold bath (10) milk is the best pitta subsiding drink (11) Soothing conversation with friends and wife (12) company of wife, her embraces and talk with one's own children. In short, ghee, milk and purgation are the best cures to subside the Pitta. A list of Pittashamaka drugs is also given.

The treatment of Kapha contains (1) vamanam or use of emetics (2) honey is the best antidote for kapha (3) use of dry, sour, pungent, hot substances and bitter astringent and pungent tastes in diet and drugs (5) Old wines (6) Sexual intercourse (7) Keeping awake (8) dieting and fasting (9) various worries and treatment suggested in obesity is the best anti-kapha treatment.

Suggested above are measures indicating the diets and practices in aggravation of particular Dosha. Separate disease-wise treatment is also given. However the physician has to apply his skill in judging the degree of aggravation or vitiation of particular dosha and also in light of age, season, country, strength of the patient, gastric fire, etc., he has to apply above measures.

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RASAYANAS AND VAJIKARANAS

THE term "Deha" means "to grow" and the term "Sharira" means "to be rendered to pieces". These words give the idea of the anabolic and katabolic processes respectively. The body is what it is because of nourishment, and disease the result of malnutrition. Charaka further says "Body is the product of diet and disease results by faulty diet. The difference between health and disease or between sukha and dukha becomes evident due to the difference between balanced and unbalanced diet".

Diet again consists of Panchabhutas. We have seen before how the body is formed from Panchabhutas and how the Panchabhutas give rise to Tridoshas. The same Tridoshas are nourished by diet. Thus this whole chain of body, diet, Tridoshas and their relationship with diet becomes very clear.

The concept of Sapta Dhatus can be easily understood. These seven body constituents, viz. Rasa, etc., maintain the body. Various definitions have been given of Dhātu but the most important one is "That which promotes the growth of body is Dhātu; that which supports the body, mind and life is Dhātu; and that which supports the Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra is Dhātu." In short, it is an essential constituent of the body, it supports the body, mind and life and naturally promotes the growth of the body.

It will be seen that in old age there is stoppage of growth of the body and hence in geriatric disorders the dravya or substance called "Rasayana" is given, which has the action of Ayana or movement. Out of the eight branches of Ayurveda, Rasayana is one of the most important. The art and science of Hindu medicine contain chapters on Rasayana which today badly needs to be introduced to the suffering world when premature ageing as well as greater number of old men are becoming a not uncommon problem. Man seems to be entering old age too soon. Signs of ageing are visible on his face and reflect in his activities. We humbly believe that the use of so-called antibiotics, anti-allergics, sedatives etc. is ever increasing and instead of eliminating and curing any disease permanently, this kind of symptomatic treatment is causing more and more of suppression of symptoms. The result is that instead of fulfilling the basic purpose of increasing the health and strength of the patient, the body tissues and cells are damaged thereby, and untimely ageing takes place.

The aim of the Rasayana treatment, however, was not merely to increase longevity as we have many a time been told by literal translators of the original texts but also to simultaneously increase energy and stamina, so that the long life which a person is privileged to enjoy as a result of this treatment would be a healthy and happy one devoid of disease and physical and mental troubles. Our health usually gets impaired by taking sour, salty, pungent and acid diet, dried vegetables, excessive sweetmeat, excessive sleep during day time, overindulgence in sex, drinks, etc., undue fear, anger, worry, greed, too much exercise as well as labour, delayed excretion, irregular habits of eating without any regard to digestion, etc. All these lead to bad health. The body constituents or the seven dhatus of the body get spoiled, rasa dhatu becomes impure, rakta becomes acidic, the flesh and joints become loose, fats turn into liquid, bone marrow is decreased, there is stoppage of production of semen and the Oja or the essence of all the seven dhatus goes on decreasing, strength is lost and doshas get deranged. In consequence man becomes sorrowful, moody, worried and devoid of energy. Breathlessness takes hold of him, he sleeps a lot and becomes lazy; he is incapable of mental or physical exertion and such a man whose memory, intelligence and glow have been destroyed is not able to live long. In such a condition Rasayana or the rejuvenators work wonders.

The following is a description of Rasayana: "Rasayana is possessed of inconceivable and wonderful possibilities, being promotive of longevity and health, preservative of youth, dispersive of somnolence, torpor, fatigue, exhaustion, indolence and weakness, restorative of the balance of Vata, Pitta and Kapha, curative of flabbiness of the flesh, stimulative of the internal gastric fire and promotive of lustre, complexion and voice. It is said that Chyavana and other Rishis regained their youth and became most attractive to women, acquired compact, even and well-proportioned limbs as also well-knit compact frames, unblemished strength, complexion and sense faculties, irresistible power in everything and capacity to bear all the hardships."

Rasayana treatment is of two kinds. One is Kutipravesika, which is the main method. Here a special cottage is prepared in which the patient has to stay and abide by strict rules. The cottage should be free of wind or air and there the patient stays with the physician and undergoes his treatment.

The other method is Vata Atapika (Vata means air and Atapika means sunlight). This method is meant for ordinary normal life where a man has to carry on his daily routine like professional activities etc.

Detailed methods have been given of the use of Rasayana so as to make it effective. To begin with, impurities should be removed from the body. For this purpose the following procedure has been outlined: The person who is desirous of undergoing Rasayana treatment should first get lubricated and perspire (snehana and swedana) and thereafter he should take the powder of Harde, Sindhawa (Amalki), Gur, Vacha, Vavadinga, Haridra (Turmeric), Pepper and Sunthi (ginger). All these should be powdered minutely and filtered by means of a cloth and prescribed doses of such powder should be given with hot water at bed time.

After his body has thus been cleansed and he has been put on a rehabilitatory diet, he should be given to drink barley gruel mixed with ghee for a period of over three nights or five days or seven days until the intestines have been purged of all faecal accumulations.

On being satisfied that the person's bowels have been properly cleansed the physician versed in the knowledge of Ayurveda after examining the age, constitution, habitus, etc. should administer that procedure of vitalisation which may be found suitable in each given case.

Great stress has been laid on this process of purification saying that "if a particular cloth is to be coloured and if that cloth is not clean but dirty, the colour will not be fast, whereas if the cloth is cleaned first and then coloured, it will catch the fast dye and the purpose of dyeing will be served. Similarly if the body is not pure and clean but is full of Malas or body secretions, then the effect of the Rasayanas will not be so marked." It will be remembered here that Rasa reaches every cell of the body and it is most important that Rasa should be absolutely pure.

While the Rasayana dravya is given, naturally the patient's diet should also be absolutely pure and unspoiled. The reason is that if improper diet or malnutrient food is there, the Rasa prepared out of such diet will not be fit to nourish the body cells and tissues properly. The effect of Rasayana depends, of course, on body strength.

Apart from purification of body and dietic control, a code of general conduct has also been described:

"One who speaks the truth, one who is free from anger, who abstains from alcohol and sexual congress, hurts no one, avoids overstrain, is tranquil of heart, fair-spoken, is devoted to holy chants and to cleanliness, is endowed with understanding, given to alms-giving, diligent in spiritual pursuits, delights in reverencing the gods, cows, Brahmans, teachers, seniors and elders, is attached to non-violence and is always compassionate, moderate and balanced in his waking and sleeping, is given to regular taking of milk and

ghee, is conversant with the science of climate, season and dosage, is versed in propriety, devoid of egotism, blameless of conduct, given to wholesome eating, spiritual in temperament and attached to elders and men who are believers and self-controlled and devoted to scriptural texts, such a one should be known as enjoying the benefits of vitalization therapy constantly. If one who is endowed with all these qualities makes use of vitalization therapy, that man will reap all the benefits of vitalization which have been described above."

The above code is perhaps a little difficult to adhere to but the Rasayana treatment is within the reach of the average man and he can realise its benefits if only he will observe the simple yet important rules regarding diet and bodily cleanliness.

The Rasayana theory is chiefly meant for the promotion of health and vitality. It enriches the Sapta Dhatus and increases longevity and naturally Rasayana therapy or normal healthy living would give man such strength and vitality that he will be immune to diseases.

While defining medicine, Charaka says "there are two types of medicines, one is promotive of vigour in the healthy and the other is destructive of disease in the ailing." He clarifies that "what has been described as promotive of vigour in the healthy is, in the main, virility and promotive of vitality; and the other is in the main regarded alleviative of the disease. The term 'in the main' means in special degree. For, either kind, in fact, performs the work of both in more or less degree." He adds "long life, heightened memory and intelligence, freedom from disease, youth, excellence of lustre, complexion and of voice, optimum strength of body and senses, utterances that always get fulfilled, the reverence of people, body glow — all these does a man obtain by the use of vitalizers." Vitalizers are so called because they replenish the vital fluids of the body.

We shall now deal with the Rasayana drugs:

Harde or chebulic myrobalan occupies the foremost place. It contains all the Rasas except Salt or Lavana Rasa. This Harde is hot, beneficial, corrective of all the doshas, is light, stimulative of gastric fire and digestion and promotive of life, it is roborant, auspicious, the best of vitalizers, promotive of the intellect and sense vigour.

The myrobalan is a quick remedy in skin disorders, gulma, (abdominal tumour), distension, consumption, anaemia, piles, intoxication, assimilation disorders, diarrhoea, chronic and irregular fever, cardiac disorders, diseases of the head, anorexia (dyspepsia or loss of appetite), cough, urinary anomalies, abdominal and splenic disorders, discharge of mucus, hoarseness of voice, impairment of

complexion, jaundice, helminthiasis, edema, asthma, vomiting, impotency, lassitude of the limbs, various kinds of obstruction of the body channels (srota avarodha), collection of fluids above the lungs or the heart and stupefaction of memory and understanding.

After cataloguing these beneficial effects of Harde, the Ayurvedists have given a list where Harde should not be used. It is said that dyspeptics, those who consume dried food, those who have been weakened by indulgence in women, those who are drunkards and poison addicts and those who are afflicted with hunger, thirst and heat should not take the chebulic myrobalan. In short, it is contra-indicated in such cases. It will be observed that in the preceding paragraph Harde is given as a 'quick remedy' for impotency while now it appears as an item prohibited for those who have been weakened by sex indulgence. In our humble opinion the references are to primary and secondary impotency respectively.

After Harde, equal importance is attached to emblic myrobalan (Amla). Charaka has very clearly made out the difference between chebulic and emblic myrobalan saying that all the virtues present in the former are there in the latter also but it should be known that chebulic myrobalan is Ushna veerya (hot) while emblic myrobalan is Shita veerya (cold). So the potencies are of the opposite type. The physician must therefore use either harde or amla according to the constitution of a patient. Where hot action is required, harde is beneficial; where cold action is required, amla is suitable; and where combined action is required, harde and amla should both be mixed and used.

There are so many recipes given prepared of harde and amla in Rasayana chapter of Charaka Samhita that it is not possible to enumerate and describe them all here but mention must be made of two types: Brahma Rasayana, Chyawanprasawaleh. Of these Chawan Prasawaleh is such a well-known Ayurvedic remedy that we must place before our readers the recipe for this famous elixir and the benefits it confers on man:

“ Take 4 tolas of each of the following: Bael, wind killer, Indian trumpet flower, white teak trumpet flower, heart leaved sida, the four Parnis, ticktrefoil, painted leaved uraria, wild green gram and wild black gram, long pepper, small caltrops, Indian night shade and yellow berried night-shade, galls, ground phylanthus, grapes, cork swallow-wort, german iris, eagle-wood, chebulic myrobalan, heart-leaves moon-seed, Riddhi, Jivaka, Rsabhaka, zedoary, nut grass, hog's weed, Meda, cardamom, sandalwood, blue lily, white yam, Vasaka root, Kakoli, and small stinking swallow wort; to these add five hundred fruits of the emblic myrobalan. Boil the whole in 1,024 tolas of water. On ascertaining that the drugs have been thoroughly decocted, the brew, together with emblic myrobalans

should be taken down. The myrobalans should be removed and de-seeded. They should then be fried in 48 tolas of ghee and oil. The physician should then boil the fried substance in the decoction already obtained, adding to it two hundred tolas of pure candied sugar. He should keep stirring the whole with a clean iron ladle till it is reduced to the proper consistency; then it should be taken down. After it has been cooled, mix it with 24 tolas of honey, 16 tolas of bamboo manua, 8 tolas of long pepper, 4 tolas of cinnamon bark, cardamoms, the leaves of the cinnamon tree and of fragrant poon combined, and all ground to powder.

“ This is that very Chyawan Prasawaleh, the highest Rasayana. It is specially recommended for the cure of cough and dyspnea and as a body-builder for the emaciated, for those suffering from pectoral lesions, for the old and for children. It also subdues such disorders as loss of voice, diseases of the chest and heart, thirst and disorders of a rheumatic type. It should be made use of in such doses as will not interfere with the normal meals. Intelligence, memory, lustre, immunity from disease, longevity, increased sense power, amative delights, heightened activity of the gastric fire, clearness of complexion, the regularity of the peristalsis — all these a man obtains from the use of this Rasayana. By retiring into a retreat and resorting to this medicine, a man will shed his infirmities and emerge with fresh youth.”

Furthermore, it is said “ as nectar is to the gods and goddesses, as ambrosia is to the serpents, so was the Rasyana for the vitalization of great sages and the sages who used these vitalizers lived very long and happy lives without any disease.”

Then there is one Yoga known as Triphala, of which the constituents are chebulic myrobalan, beleric myrobalan and emblic myrobalan. All these three are taken in similar proportions, minutely powdered and 3 to 6 grams of this powder with ghee and honey morning and evening can also be taken as a rejuvenator. It makes the bowels clean, increases appetite, improves digestion and removes blood impurities and excessive heat from the body. This is a very useful rejuvenator for those who are suffering from constipation.

MINERAL PITCH VITALIZER

Shilajit is an important Rasayana. Shilajit is known as mineral pitch. It is astringent, slightly acid in taste, pungent, in post-digestive effect, neither very hot nor very cold and is derived from the four minerals, gold, silver, copper and iron. When used systematically it serves as a vitalizer besides acting as a virilific and remedial agent in disease. When the various decoctions curative of Vata, Pitta and Kapha are made to impregnate the mineral pitch, either all at

once or one by one, its potency is increased. The method of impregnating mineral pitch is to immerse it in luke-warm decoction of the specified drugs and to remove it and reimmerse it in the decoction which has again been rendered luke-warm. This process should be repeated for a period of seven days. Such mineral pitch when taken in milk, together with the powder of metals prepared according to the formula given earlier will ensure long life crowned with happiness. This vitalizing elixir removes the ill effects of old age and disease, gives great firmness of the body, increases intelligence and memory and promotes prosperity. It should be taken in conjunction with a milk diet. As regards the course of this vitalizing mineral pitch, it is divided into three classifications, viz. maximum, medium and minimum. The maximum consists of seven weeks; the medium of three weeks and the minimum of one week. As regards the dose, it is divided into three branches — 4 tolas, 2 tolas and one tola.

Charaka has described the virtues pertaining to the different varieties of mineral pitch. Mineral pitch is the name given to that excretory stuff which is exuded by mountain rocks loaded with gold and other metallic ores when heated by the rays of the sun and which resembles lac and is soft, clayey and clear. That variety of this stuff which is sweet and slightly bitter in taste, resembles the china rose in colour, is pungent in post-digestive effect and cold, is the exudation from gold ore. The exudation from silver ore is pungent in taste, white in hue, cold and sweet in post-digestive effect. The exudation from copper ore is of the hue of the peacock's throat, bitter in taste, hot and pungent in post-digestive effect. That exudation which is of the hue of gum guggul, bitter and slightly saltish in taste, pungent in post-digestive effect and cold, is from iron ore. It is the best of all. All varieties of mineral pitch have the smell of cow's urine and are suitable for use in all kinds of therapeutic measures. However, the last variety, the exudate of iron ore is the one most esteemed in vitalizing procedures. The four kinds of exudations from the four kinds of metallic ore beginning with gold are specially recommended in disorders of Vata and Pitta, in disorders of Kapha and Pitta, in disorders of Kapha and in tridiscordance in the respective order mentioned.

While taking the course of mineral pitch, care should be taken to see that irritating and heavy articles are excluded from the dietary. Horse-gram is prohibited at all times. Milk, butter-milk, meat juices, gruel, water, cow's urine and various kinds of decoctions are recommended for mixing with mineral pitch. These should be made use of as required by the occasion.

Charaka says "There is no curable disease on the earth which mineral pitch cannot cure." When administered at right time, well

prepared and in the right manner, it will secure for the healthy subject the optimum measure of vitality.

Some short recipes are also mentioned, which we give below for the benefit of the common reader, such as:—

1. Take the powder of Ashwagandha (*Withania Somnifetra*) with ghee and honey along with milk.
2. Fresh cow's milk taken daily in the morning is also Rasayana.
3. The juice of Brahmi (Dose: usually 1 to 2 drams daily, according to the strength of the body) is also Rasayana. (*Herpestis Monniera*).
4. Take the juice of Guduchi (heart leaved moon seed) daily. It is also Rasayana.
5. Take the juice of Shankhpushpi (usual dose: 1 to 2 tea-spoons). This especially increases intellectual power and brains (This is *Canscora Decussata*).
6. Haritaki (*Harde*) also is one of the best Rasayanas. A dose of 2 Hardes daily along with gur or honey or salt is also a Rasayana.
7. The juice of fresh Amla with honey, sugar and ghee is an effective Rasayana.
8. The powder of Gokharu (*Pedaliu Murex*) with milk, ghee or water is efficacious in Spermatorrhea.
9. The black Tila daily taken in the dose of 2 tolas or 1 pala with cold water also nourishes the body (*Sesame*).
10. The powder of Guduchi, Amla and Gokharu known as Rasayana Choorna is one of the best Rasayanas. It usually suits all temperaments and is a boon in old age. Taken with ghee and sugar or ghee and honey it makes a man full of Saptadhatus, steady and free from all the unhappiness arising from diseases (Dose of powder: 3 grams in the morning).
11. The juice of fresh Bhringaraja taken daily is an effective Rasayana (Dose: 1 to 2 grams) (*Elclipta Erecta*).

It is advised that while the Rasayana treatment is going on a person should avoid pungent, bitter, sour, acidic, salty dishes or items of diet. Instead he should take butter, butter-milk, sweet tasting foods, milk, honey and such other nourishing products.

Many simple remedies like the above have been suggested where there are no severe restrictions but great care has to be taken when administering drugs like Vishtinduka (*Nux Vomica*), Bhal-lataka, etc. Curds, sour things, fire, sun, heat, wind, anger, all are to be avoided; otherwise the result would not be achieved. It would be interesting to note here that as the Ayurvedic origin of thinking has the physical constitution as the basis, various Rasayana recipes

are given keeping in mind the various body constitutions. It will be further seen that the simple recipes given above will suit all but for special constitutional debility, different Rasayanas will have to be administered and they have all been described in the chapter on Rasayana. The drug is administered with the suitable vehicle called Anupana i.e. a particular drug would be given along with honey or ghee or milk or some other accompanying vehicle. The idea was to enhance the effect of the prime drug.

VAJIKARANA

We now come to Vajikarana treatment. The difference between Rasayana and Vajikarana is that the former results in vitality while the latter increases virility. Vajikarana is defined as "That which creates spontaneous pleasurable excitement; the therapy which bestows considerable sexual stamina and by the use of which therapy a person is most liked by members of the opposite sex; that which increases the seminal secretions even in aged persons; that which makes the semen fertile and productive of children; that which establishes him because surrounded by excellent offsprings; for that man never really dies who has perpetuated himself. In short it gives reputation, prosperity, health and strength to him. That which gives all these beneficial results is said to be Vajikarana."

While giving this definition of Vajikarana, it should be remembered that the usual word used in modern medicine is 'aphrodisiac' but the central idea of Vajikarana is not the mere use of a drug which causes sexual excitement or which contributes only to sexual pleasure, but, as clarified by Charaka, "it is to maintain the family". Vajikarana is stated as 'Apatyakara' treatment, 'Apatya' meaning progeny. Charaka has laid stress on the moral aspect of this treatment and stated that only the person who is self-restrained and who has command over his senses should take Vajikarana with the aim of making his home life happy. He says:

"The man of self-restraint should seek always to maintain his virility by means of virilification as righteousness, wealth, affection and good repute are dependent on the maintenance of healthy manhood. It, again, is the means of begetting a son in whom these qualities are based.

"The best means of stimulating one's manhood (the best agent of virilification) is an exhilarating sexual partner in the wife. When the desired sense objects yield great pleasure even if singly experienced by the senses, then what need be said of the person of the woman in whom the delectable objects of all the senses are found established together. Such a combination of the delectable

objects of all the senses is found only in the person of the woman and nowhere else. Indeed it is the object that is found in the person of the woman that evokes our pleasure fully. Hence it is that man's pleasure is mainly in the woman and that in her is established the source of progeny. In her also are established righteousness, wealth, auspiciousness and the two worlds — this and the other. The woman who is good-looking, young, endowed with auspicious physiognomic marks and is amiable and skilled in the fine arts acts as the best virilific."

In praise of progeny it has been further said :

"The man without progeny is like a solitary tree that yields no shade, which has no branches, which bears no fruit and is devoid of any pleasant odour. The man without progeny is to be regarded as a painted lamp, a dried-up lake or a pseudo-metal which has only the appearance of the precious metal, and is like a man of straw possessing only the shape of man.

"The man of numerous progeny is praised as one possessing a multiplicity of forms, faces, structures, actions, eyes, intellects and souls. Such a man is hailed as being auspicious, praiseworthy, blessed, virile and the source of many geneological branches.

"Affection, strength, happiness, livelihood, expansion, numerousness of kinsmen, fame, the happy results pertaining to all the words and satisfaction are all dependent upon progeny. It is, therefore, that the man desirous of progeny, the merits dependent on progeny and the pleasure of conjugal life, should always take virilifying medications."

To have family and children, virility is needed. The semen which is capable of producing children is virile. Pure Shukra or fine semen is described in Ayurveda as 'that which is unctuous, pure and that which is Madhura and smelling like honey, ghee or oil'. Nowadays we hear people lamenting about premature ejaculation, lack of erective strength and other sex disorders. The psychologists attribute these to fear, inhibition, anxiety, etc. Ayurveda also agrees and it is very clearly said that the mind should be free from worries, anxieties, fears, etc. but at the same time the Shukra Dhatu or semen should also be of a high quality.

Then there are causes of impotency. There are six forms of impotency according to Sushruta :

1. "A cessation of the sexual desire owing to the rising of bitter thoughts of recollection in the mind of a man or the forced intercourse with a disagreeable woman (who fails to sufficiently rouse up the sexual desire in the heart of her mate) illustrates an instance of mental impotency.

2. " Excessive use of articles of pungent, acid or saline taste or of heat making articles of fare leads to the loss of Saumya dhatu (watery bodily fluid) of the organism. This is another kind of impotency.
3. " Virile impotency resulting from the loss of semen in persons addicted to excessive sexual pleasure without using any Vajikarana is the next form of virile impotency.
4. " A longstanding disease of the male generative organ (like syphilis) or the destruction of a local marma destroys the powers of coition altogether. This is the fourth form of impotency.
5. " Sexual impotency from the very birth is called congenital impotency.
6. " Voluntary suppression of the sexual desire by a strong man observing perfect continence or through utter apathy produces a hardness of the spermatic fluid and it is the cause of the sixth form of virile impotency."

Of the six types of impotency, the congenital form as well as the one due to the destruction of any local marma should be regarded as incurable, the rest being curable and amenable to the measures and remedies antidotal to their respective originating causes.

The Vajikarana treatment consists of those drugs and substances which increase the quantity of semen and at the same time improve its quality. They help in preventing premature ejaculation and supply sufficient retentive power. Sex appetite is also restored to normal. It will thus be seen that the many sex disorders were kept in mind by Ayurvedists and suitable remedies suggested.

As in the case of the Rasayana treatment, purification before virilification is necessary and it is said that if a man takes in due dose and at proper time the virilifying recipes, after the body channels have been cleansed and his body has been rendered free from impurities he thereby greatly increases his virility. The recipes also act as roborant and tonic. It is therefore that purification of the body must be first undertaken with due regard to the patient's strength, for virilific preparations do not bear fruit if tried on an uncleaned constitution.

We shall now describe the different remedies. Sushruta says: " Various kinds of nutritious and palatable food and sweet, luscious and refreshing liquid cordials, speech that gladdens the ears and touch which seems delicious to the skin, clear nights mellowed by the beams of the full moon and damsels young, beautiful and gay, dulcet songs that charm the sound and captivate the mind, use of

betel leaves, wine and wreaths of sweet-scented flowers and a merry careless heart are the best aphrodisiacs in life."

Then, several formulae are given of the drugs used in Vajikarana treatment, showing the richness and breadth of knowledge. These can be divided into two groups: Arsha Sampradya, which is the ancient line of treatment, and Siddha Sampradya, which was introduced only five to six centuries ago. The latter formulae consist mainly of mercurial preparations known as Rasa. In some of the formulae employed more recently drugs like opium, cannabis indica, hemp, etc. are used which increase the potency of the drugs to achieve sexual happiness and enable man and woman to enjoy the full benefit of Nature's gift. The formulae which contain drugs like opium, hemp, etc. are, of course, limited but there are other formulae in which garlic, onion and such other drugs have been suggested and these are the special kalpa. Some of the recipes are given below to give a general idea of the nature of the treatment:

1. Utkarika — It is prepared as follows: Powders of Sesamum, masha pulse, vidari or sali rice are mixed with the Saindhava salt and pasted with a copious quantity of the expressed juice of sugar-cane of the paundarika species. It is then mixed up with hog's lard and Utkarika is prepared by cooking it with clarified butter. By using this medicinal Utkarika a man would be able to visit a hundred women.
2. Powders of Pippali, masha pulse, sali rice, wheat and barley are taken in equal parts. Cakes or Pupalika are prepared with this compound and fried in clarified butter. By taking these cakes and a portion of milk sweetened with a copious quantity of sugar a man becomes potent enough to enjoy the pleasures of love like a sparrow.
3. Powdered Vidari successively soaked in the expressed juice of the same and dried is licked with honey and clarified butter. This would enable a man to visit 10 women successively (at a time). (This is Epomoea Digitata.)
4. Powders of dried Amalaka successively soaked in its own expressed juice is licked with honey, sugar and clarified butter, after which a quantity of milk is taken. This compound would make even an old man of 80 sexually as vigorous as a youth.
5. The testes of a goat or of a porpoise mixed with salt and powdered long pepper and fried in clarified butter would serve the purpose of a speedy and effective aphrodisiac.
6. Dishmularishta and Ashwagandharishta—2 to 4 teaspoons after lunch and dinner improves digestion, increases the Rasayana effect and after long use gives the aphrodisiac effect.

7. **Vidari or Ipomoea Digitalia** — It is a tuberous root containing a resin, sugar and starch. These roots are tonic, alterative, aphrodisiac, rejuvenator, demulcent, lactagogue, mucilaginous (Rasas: sweet and bitter; Veerya, cold; Vipaka, sweet). It subsides Vata and Pitta. It is specially effective on reproductive system. Roots are utilised in medicine. It is cultivated all over India. It is used in many tonics. Powdered Vidari is given to women to increase breast-milk. It is given to children in case of emaciation, debility and rickety conditions. Powdered root boiled in sugar and butter and administered has the effect of promoting obesity, moderating menstrual discharge. It is a mild purgative also. Powder of the root macerated in its own juice and given with honey and ghee is recommended as an aphrodisiac.
8. **Salamishri (Orchis Mascula)** — Tubers and fecula of the root are used in medicine. Tubers contain glucoside, a bitter substance, starch 25 per cent, mucilage 50 per cent, sugar, albumen, a trace of a volatile oil and ash consisting chiefly of phosphates and chlorides of potassium and lime. The most important constituent is mucilage or starch. (Rasa: sweet; Veerya, cold; Vipaka, sweet). It forms one of the best articles of diet for weak and convalescent persons and for this purpose the powder of the mishri root is best to be used. Usually cooked with milk in the proportion of one teaspoonful to a tea-cup full of milk. It is also given in all sorts of wasting diseases like diabetes, phthisis etc. and in chronic cases of diarrhoea and dysentery. Salam has also long been esteemed in India as a great restorative and invigorator and a tonic aphrodisiac in diseases characterised by weakness or loss of sexual powers. We find in the Indigenous Drugs Report of Madras that it was recently tried in cases of nervous debility and found beneficial. It increases gastric fire, semen; it is a tonic, nutrient and an aphrodisiac. A paka or sweet medicine is prepared from the Salam and is well-known by the name Salam Paka. This is used in the winter season, especially to remove all sorts of debility.
9. **Kavacha (Cowhage or Mucuna Pruriens)** — It is also called Atmagupta. Its seeds, roots and legumes are used in medicine. Resin, tannin, fat and a trace of manganese are the constituents. The seeds are found to contain a free fatty acid and its glyceride probably oleic acid, an acid resin and albumen. Seeds are astringent, anthelmintic, nervine tonic and aphrodisiac. Root is also a nerve tonic and diuretic. Hairs covering the seed pods are vermifuge, locally stimulant and mild vesicant. Its pods are well known as they

are covered with stiff hairs which produce an intense irritation of the skin if incautiously handled. Hairs covering the seed pods mixed with honey have been used as a vermifuge in round worms which are expelled, the action being purely mechanical. Seeds are prescribed in the form of powder in dose of 20 to 40 grains in leucorrhoea, spermatorrhoea etc. and in cases requiring an aphrodisiac action.

Sushruta says a compound powder made of these seeds and of the fruits of *Tribulus terrestris* taken in two equal parts is recommended to be administered in dose of 1 drachm with sugar and tepid milk as an aphrodisiac.

10. Vanari Vatika — is recommended by Bhava Prakash. It is made by boiling 400 gms. of the seeds in 8 lbs. of cow's milk till the milk becomes thick; seeds are then decocted and pounded, then fried in ghee and made into a confection with double the weight of sugar. The mass is then divided into balls, which are kept steeped in honey. Dosage: 1 to 2 balls (each ball of 10 gms.) with milk. This is one of the best aphrodisiacs.

Dr. Nadkarni says that this is useful also in leucorrhoea, profuse menstruation and in paralysis. In South India a tonic for spermatorrhoea is prepared by powdering the seeds of *Mucuna Pruriens* and *Gokshura*, roots of *Eriodendron*, *Anafractuosum* and *Asparagus adscendens*, *Embelic Myrobalans*, *gulanchar* starch and sugar candy in equal parts. Of this powder $1\frac{1}{2}$ drachms with 2 tolas of ghee are given in cow's milk twice a day. (Rasas: sweet and bitter; Veerya: cold; and Vipaka: sweet).

This has a specific action on the reproductive system. It is roborant, lactagogue. It is heavy and subsides Vayu and Pitta and increases Kapha.

(It will be interesting to note that all these tonics in the majority of cases subside Vayu and Pitta and increase Kapha. If some research is conducted on *Mucuna Pruriens*, which is also known as cowhage, we may hit upon a drug which will increase sperm count in the semen. There being no such drug at present, this cowhage is one to which we look with some hope. It is available in all parts of India).

11. Bhangā or Ganja — *Cannabis indica* or *cannabis sativa* or *indica* known as Bhangā or Ganja is used for the tonic action. It is also known as hemp. It is bitter and astringent, it is hot and its post-digestive action is bitter. It increases gastric fire, it improves digestion, it is light, it increases appetite and is hypnotic. It subsides Kapha and Vata. This is taken to increase the feeling of exhilaration as well as

a sense of vigour at the time of coitus but it should be noted that it is an intoxicant and habit-forming. During Holi in India the revellers take it in a palatable form known as Thandai or cold drink and afterwards they have an intoxicating effect. For those whose constitution is weak, this type of intoxicating remedies should not be prescribed.

The use of fresh *cannabis sativa* is also made. It contains a volatile oil prepared from the fruits or seeds composed of cannabene, cannabene hydride, several alkaloids, and charas. The cannabis resin extracted from the leaves contains no chlorophyll. All the parts of the plant are intoxicating, narcotic, stomachic, antispasmodic, analgesic, anodyne, stimulant, aphrodisiac and sedative. Its habitual use leads to indigestion, body waste, melancholia and impotence. In large doses it first produces mental exaltation, intoxication, a sense of double consciousness and finally loss of memory, gloominess, etc. It is used as a retentive in case of premature ejaculation, aphrodisiac in case of sexual weakness or impotence and it is given as astringent in cases of diarrhoea and dysentery. Unani physicians have also used it extensively. It is usually taken with opium.

Thandai — About 3 tolas weight of the drug are well washed with cold water, then rubbed into powder, mixed with equal parts of black pepper, dried rose-petals, poppy-seeds, almonds, cardamoms, cucumber and melon seeds to which sugar, half a pint of milk and equal quantity of water are added. This is considered sufficient to intoxicate a habituated person ($\frac{1}{4}$ to $\frac{1}{2}$ the quantity is enough for a novice). The intoxication caused by this beverage induces the person to sing and dance, to talk a lot, to eat food with great relish and to seek aphrodisiac enjoyments. The intoxication lasts about seven hours, when sleep supervenes. No nausea or sickness of the stomach follows nor are the bowels at all affected. Next day there is a slight giddiness and vascularity of the eyes but no other symptoms worth recording.

The Majoon or hemp confection made in ghee and with the addition of water contains bhang, ganja, charas, opium, poppy seeds, dhatura leaves and seeds, cloves, mastich, aniseeds, cumin, sugar, butter, flour, milk, cardamoms and tabashir. A dose of $\frac{1}{2}$ to 1 drachm will be required by one who is accustomed to its use. The taste is sweet and odour very agreeable. Sometimes, stramonium seeds are added but never nux vomica. It is most fascinating in its effects, producing ecstatic happiness, a feeling of exaltation, a sensation of flying, voracious appetite and intense aphrodisiac desire.

12. Makaradhwaja* — of the Siddha Sampradya group is a unique drug among rejuvenators and aphrodisiacs. In the last few centuries Rasa Shastra (the science of mercurial preparations) has made gradual and yet marvellous progress. To reduce it for medicinal purposes, Rasa or mercury, also known as Parada, has to be first purified. This process is known as Shodhana. There are eight specific processes carried out and so are known as Ashta-Sanskara. Some texts describe 18 processes known as Ashtadasha Sanskaras. Such purified Mercury is rubbed with purified sulphur and the black sulphide of mercury is prepared which is heated in a special type of bottle for about 72 hours. The bottle is placed in sand in a vessel, the idea being to heat it at different temperatures, i.e. to give low and steady heat in the beginning, more intense heat as the process goes on and finally very high heat and then reversing the process. The sulphur burns away and mercury collects at the neck of the bottle, when a cork is applied to the bottle. On the last day the entire mercury settles at the neck of the bottle. The bottle is allowed to cool and then we get the red sulphide of mercury which is Rasa Sindhura. If gold is mixed with the Parada and Gandhaka (mercury and sulphur), the preparation will be known as Makaradhwaja.

If we prepare Makaradhwaja once, mixing mercury and sulphur in the proportion of 1 : 2, this is known as Dwiguna — double potency of sulphur burnt with mercury. When this process is gone through three times it will be known as Shadaguna as the quantity of sulphur burnt will be six times that of mercury; when prepared eight times it will be known as Shodashaguna; and if we prepare it similarly 50 times, the Makaradhwaja which is finally obtained will be known as Shataguna, where the sulphur burnt will be 100 times the quantity of mercury. These four types of Makaradhwaja are prepared in India by prominent pharmaceutical concerns and we can arrange them in their order

* MAKARADHWAJA

The chemical analysis of 'Rasa-Sindūra' or 'Re-sublimed mercuric sulphide' shows Sulphur 13.78 percentage and Mercury 86.22 percentage contained in it. While Makaradhwaja showed in two samples analysed as follows:

Suvarna (Gold)	..	Nil	Nil
Mercury	86.55%	86.38%
Sulphur	13.45%	13.62%

It will be seen that chemical analysis of Rasa-Sindura and Makaradhwaja is more or less the same yet the therapeutic effect of Rasa-Sindūra is anti-Kapha treatment, while Makaradhwaja is an efficacious tonic.

of potency as Shataguna (most potent), Shodashaguna (less potent), Shadaguna (minimum potency) and Dwiguna (usual potency). Makaradhwaja is also called Sarvaroghara as it eradicates all the diseases when administered with different vehicles or Anupana. Parada is referred to as Yogavahi in Ayurveda (this term appears in our chapter on *Materia Medica*).

Makaradhwaja is powdered along with musk, amber, the oxides of iron, mica, tin, gold and silver along with non-metallic drugs like Salamisri, cardamom etc. All these drugs are mixed together, rubbed in juice of betel leaves and pills are prepared. 2 pills in the morning and 2 in the evening, with milk, honey, butter, coffee or tea on empty stomach increases appetite, improves digestion, removes low blood pressure, feeling of lassitude, fatigue and weakness. It increases semen in quantity and quality, it increases the libido and has a strong aphrodisiac action. This drug is a remarkable remedy for impotency and it works wonders provided all the ingredients used are pure and without any adulteration. Drugs such as musk, amber and gold bhasma should be used in proper quantity. They should also be of good quality.

Makaradhwaja is one of the most renowned tonics of Ayurveda and claims credit for having cured so many cases of impotency, nervous debility etc. It is very good and effective in convalescence and in febrile conditions. It can be taken by persons of all ages and in all seasons. Unlike cocaine, cannabis indica, opium etc. it is not an intoxicant but it increases all the seven dhatus or body constituents and hence it is an ideal tonic. It has not got the spontaneous retentive effect of opium or nux vomica but it has a steady and lasting effect without in any way being harmful to health. By the use of Makaradhwaja pills digestion of milk improves and chronic diarrhoea and dysentery are removed.

13. Vasanta Kusumakar — is another very effective aphrodisiac. It is useful in chronic conditions like asthma, diabetes, ageing troubles, where it gives a spontaneous tonic effect, increasing the strength of the patient which helps him to regain health. This formula contains gold, musk, amber, mica, iron and tin compounds which are steeped in juices of various plants like Chandan, Kewada and Shatavari for about six months, the juice of each plant being used seven times at a stretch and the medicine is ready after a laborious effort of six months. This is also one of the reputed drugs of Ayurveda to cure senile debility and impotency and to

relieve sufferings from diabetes, asthma, low blood pressure etc.

14. Take Ashwagandha, Shatavari, Vidaraka, Gokharu, Kava-cha and Ikshurak in equal parts and make a fine powder of them. 2 to 4 teaspoons (3 to 6 grams) with cow's milk or any other suitable vehicle taken regularly early in the morning and at bedtime will increase the quantity and improve the quality of semen. It is useful in backache and in cases where the semen is too thin. It increases health and strength and is specially indicated where excessive indulgence in sex has taken place either by natural or unnatural means.
15. Take Shatavari, Salam Mushali (black and white), Ikshurak, Gokharu, Bahufali, Yashtimadhu, Akharakarabh, dry Ginger, Pepper, Vidarikandu, the root of Shalamali, Bahaman (red and white), Jayaphal and Javantri, all in equal parts, make a fine powder of it. Dose: 1 to 2 teaspoons of the powder according to the capacity of the patient, with sugared milk. (This is very beneficial in impotency, spermatorrhoea, lack of erective power and senile debility. It increases the potency of the person, giving him new strength, health, vitality and virility. It should be taken for at least a month or two to achieve full benefit).

The above drugs are sometimes mixed with honey, and a jelly is prepared known as Awaleha. The names of such preparation would start with the name of the chief ingredient or the action of the drug. The above mentioned recipe, for example, would be called Shatavaryadi Choorna, meaning powder containing Shatavari etc. or the recipe would be known by its action as Vajikarana Choorna.

16. Take 8 tolas each of the seeds of cowhage, black gram, dates, climbing asparagus, Indian water chestnut and grapes. Boil them with 64 tolas of milk and 64 tolas of water till the whole is reduced to 64 tolas. Strain through a clean piece of cloth and mix it with 24 tolas each of sugar, bamboo manna and fresh ghee. This should be taken with honey followed by a meal of Sastika rice. Even a man who is infirm with age or impotent will be able by taking this preparation to beget numerous progeny and acquire the virility of youth.
17. Take tender shoots of the date, black gram, milk, jam, climbing asparagus, dates, mahwa grapes and cowhage fruits. Boil 4 tolas of each of these in 256 tolas of water till the whole is reduced to one-fourth. Then it should again be cooked in 64 tolas of milk. When it is reduced to the original quantity of milk (64 tolas), it should be taken with cooked

Sastika rice, mixed liberally with ghee and sugar. This is considered as a highly virilific preparation.

18. Jivaka, rusbhaka, meda, cork swallow wort, the two kinds of East Indian globe, thistle, dates, liquorice, grapes, long pepper, ginger, Indian water chestnut, white yam, fresh ghee, milk and water; the ghee prepared from these and reduced to the actual quantity of ghee used should be mixed with one-fourth of its quantity of sugar and honey, and this taken with Sastika rice, taking into account the strength of the digestive fire, acts as an excellent virilific, promoter of strength, complexion and voice and as a roborant.
19. Take and grind 30 pieces of long pepper; fry them well in 4 tolas of oil-cum-ghee. Mix the whole with sugar and honey. Fresh milk from the cow's udder should be milked directly on it just sufficient to make it into a liquid. He who drinks this, according to the strength of his gastric fire, along with a meal of Sastika rice and milk and ghee will not suffer phallic depression or ejaculation for the whole night.
20. The milk of a robust cow bred on the leaves of black gram and which is used to eating sugar-cane and yields thick milk, taken by itself either boiled or fresh or mixed with sugar, honey and ghee acts as an excellent virilific.
21. The man who takes liquorice powder mixed with ghee and honey, each one tola and drinks milk over that, becomes possessed of perpetual virility.
22. Mincing the flesh of a hog into paste, and mixing it with black pepper and rock-salt, pills of the size of jujube should be made. These pills should be fried in hot ghee. When they are hardened by frying, they should be put into the juice of cock flesh mixed copiously with ghee, powdered spices, curds and the juice of the pomegranate. This juice should be cooked with due care so as not to break the pills. Taking this juice and the pills, one acquires an abundant quantity of semen.
23. Clean, husked and sprouted black gram together with fruits of cowhage should be cast into the meat-juice of the buffalo mixed with a liberal quantity of ghee, curds and pomegranate juice, coriander, cumin seeds and ginger in proper measure. These sprouted seeds when taken along with the meat-juice, produce inexhaustible semen.
24. One who eats the fresh flesh of the Rohita fish or the Safair variety of fish, well fried in hot ghee, does not get tired in the sex act. One desirous of progeny should take the Rohita fish fried in ghee together with the meat-juice of the goat

prepared with fruit juices and should take unctuous juices as after-draughts.

The above list is by no means exhaustive but will give the reader an idea of the various recipes used in Vajikarana. Many of those who are sexually weak and consequently disgusted with life will find the answer in Ayurveda. Modern medicine has now come to recognise the part played by hormones and synthetic hormones are introduced into the body either by mouth or by injection. But even 3000 years ago the Ayurvedists were aware of this principle and they had introduced Bastandavadi in which the testicles of goats were purified, rubbed with black til and made into fine pills. These were given to increase the sperms in semen and they naturally increased vitality and virility also.

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METHODS OF INSTRUCTION IN AYURVEDA

AYURVEDA, or the science of life, dealing in both medicine and surgery is divided into eight branches, viz. (1) Kaya Chikitsa (medicine), (2) Shalya Chikitsa (surgery), (3) Shalakya Chikitsa (diseases of the part above the super clavicular region), (4) Kaumarabhritya (Obstetrics & Paediatrics), (5) Bhuta Vidya (Psychotherapy), (6) Agadatantra (Toxicology), (7) Rasayana (Rejuvenation) and (8) Vajikarana (Virilification).

Kaumarabhritya, for example, relates specially to the diseases of children. However, it includes all information about children, beginning with the knowledge of semen and menses, followed by a description of conception, foetal growth, birth of child and thereafter children's diseases. A few authors have made passing remarks that there is no description available in Ayurveda of obstetrics or gynaecology separately but it should be remembered that compilations like Charaka and Sushruta have been divided into Sthanas or parts viz. Sutra Sthana, Sharira Sthana, Nidana Sthana, Vimana Sthana, Chikitsa Sthana, Uttara Tantra, and in these divisions there are separate divisions which are included in the form of chapters e.g. in Ashtang Hridaya Vagbhata has dealt with paediatrics in the first three chapters of Uttara Tantra.

Several treatises have been written on each of the above eight branches and it will be observed that there were specialists who excelled in one or more particular branches.

Though the two main texts of Ayurveda, Charaka Samhita and Sushruta Samhita, both deal with the whole of Ayurveda, yet we find that the former is a treatise specially on medicine and the latter on surgery. Thus there is a clear differentiation between the physician and surgeon in these two treatises. Vagbhata, who later wrote Ashtang Hridaya asks "If a man is well read in Charaka but ignorant of even the names of the diseases described in Sushruta and other works or if he is an expert in practical methods but absolutely ignorant of Charaka, what can such a poorly equipped man do to relieve the ailments of the patients?"

It will be seen that the student was advised to pay attention and to have full and clear understanding of the various texts available at that time and of all its branches. Furthermore, Sushruta has stated "It is not possible to include all the knowledge of the science

in a single treatise” and “one who studies exclusively one science cannot arrive at a correct determination of things; therefore a physician should be an adept in the various sciences to have a full command of things.” He further says “the truths mentioned in the other sciences and those referred to here for our purpose are to be understood in their full context from the experts in those sciences.” Charaka has suggested “You should listen, and act, even to words and instructions of an unfriendly person.”

Importance was attached to theoretical as well as practical knowledge. Sushruta has given a beautiful exposition of the importance of such combined learning of theory and practice in the following words: “He who is learned, he who is an expert only in the theory of the science but is not clever in practice, gets confused at the approach of a patient. His condition can be compared to the feelings of a coward entering the battle-field. He who is skilled in practice but is ignorant of the theory of the science is not admired by wise men and should receive sentence of death from the king. Both these are lacking in expertness and are unable to do their duties for they know only half the science and are like birds with one wing only.”

Sushruta composed a verse, the meaning of which is applicable verbatim. He brings out that “even as a donkey that bears a load of sandalwood is aware only of the weight of the load but not of its worthy value of fragrance, in the same manner are the persons who have read many works on the Shastras but are ignorant of their real significance; they just carry their load like a donkey.”

From the quotations given above it will be seen that not only was the combined study of theory and practice advocated but study of other sciences was also recommended.

In ancient times the students used to learn from the teacher the texts and other things pertaining to science. This learning came from authoritative instruction, direct observation and inference. First came knowledge from authoritative instruction and thereafter investigation proceeded by means of observation and inference. The first step in theoretical studies was to master the texts thoroughly. As we have referred to before, the texts at that time were of Charaka and Sushruta written in the style of prose and verse in a concise manner. A glance at the chapters clearly shows that each chapter begins with a general outline, then a detailed description is given and finally there is summary of the whole matter. Theoretical knowledge was acquired by the student from the teacher by oral means. Same was the practice adopted for the acquisition of Vedic knowledge as well as knowledge of any other branch of science in ancient India, such as astrology etc.

We will quote here from Charaka Samhita the methods of teaching: "The student sitting himself at ease on even and clean ground, should, concentrating his mind, go over the aphorisms in their order, repeating them over and over again, all the while understanding their import fully, in order to correct his own faults of reading and to recognise the measure of those in the reading of others. In this manner at noon, in the afternoon and in the night, ever vigilant, the student should apply himself to study. That is the method of study."

Sushruta's injunctions are as follows: "As regards the method of study, listen as I describe it. The preceptor should impart the instruction to the best of his ability to the disciple who has approached him in a state of cleanliness wearing his upper garment, with an attentive mind, at the appointed hour of instruction. One should learn to recite word by word or verse by verse. Again, they should be linked together properly as words, phrases and verses. Having thus formulated them, they should be repeatedly recited. One should recite neither too fast nor in a hesitant manner nor with a nasal twang but should recite bringing out each syllable distinctly without overstressing the accents and without making any distortion of the eye-brows, lips and hands. One must recite systematically in a voice not too high-pitched nor too low. No one else should interfere when they are studying."

There was an individual touch in the teaching as instructions were personal and hence individual and personal attention was paid and there was a link between the teacher and the student.

Again, students were divided into three categories according to their degree of intelligence, high, moderate and low. In the ancient works, exhaustive and detailed texts are available for students with high intelligence, and very concise and brief texts for those of the low type.

REFERENCE:

1. Charaka Samhita (Eng. Trans.) Preface.

QUACKS

IN the previous chapters we have covered a good deal of ground to give the reader the image of an ideal physician. It now becomes necessary for us to refer to that particular tribe known as Quacks, of whom unfortunately there is a large number in the medical profession. They, of course, exist in other walks of life as well but nowhere else are they more dangerous than in the field of medicine because here they are playing with precious lives.

Quacks existed even in olden times and they have been bitterly criticised. The origin of quacks may be traced to the fact that the medical profession occupied an important place in society, a practitioner being in the nature of a friend and guide to the people. The profession was also a lucrative one and aroused the jealousy of individuals who aspired to attain similar status but lacked the wherewithal. These persons easily turned into quacks and what they lacked in knowledge and learning they made-up in outward appearance and attitude and they traded on the gullibility of ignorant persons.

Charaka has described quacks as cunning and deceitful ignoramuses and imposters who parade the land with their medical paraphernalia, books and the air of an expert physician. In the midst of uncultured people they brag about their cleverness in the most unadroit manner and like the ignoramuses that they are, they ridicule the learning of the savants. But if they find a company of the learned, they sulk away from a distance. They never come face to face with the true physician lest their ignorance should be discovered. "An animal which takes advantage of the weakness of the other animals, plays the wolf but reverts to its true nature on meeting a real wolf. Similarly the ignoramus while he may pose himself as an exponent of medicine in the midst of ignorant people will be easily nonplussed when he meets a true exponent."

The *modus operandi* of quacks is given. "They walk the streets with a view to picking up practice. As soon as they hear that somebody is ill, they swoop down on him from all directions and in his hearing proclaim their medical attainments. When a doctor is already in attendance on him, they make repeated mention of his shortcomings. They try to endear themselves to the friends of the patient by their suave manners, knowing whispers and officiousness. They declare that they expect little by way of remuneration. When

they are entrusted with the case they look around in an attempt to hide their ignorance.

When they are unable to check the course of the disease they point out that it is the patient himself who is lacking in necessary appurtenances, in attendants and in self-control. When they smell that the patient may not survive they make good their escape to some other place."

Charaka says: "If the other three factors being given, serious diseases, demanding attention and treatment are at times seen to vanish like a city of illusion and at other times to get aggravated, the cause is to be found in the physician who is wise in the first instance and ignorant in the second instance."

He has condemned these quacks in no uncertain terms. He speaks in a forthright manner: "It is better for the person who has put on the garb of the physician to quaff the venom of the cobra or to swallow heated iron balls than to extort food, drink or money from an afflicted person who has sought his help. It is better for the quack to offer himself up in the fire than enforce his treatment on the patient."

Charaka has warned against utilising the services of these self-styled physicians in the following words:

"One may survive the fall of a thunderbolt on one's head but one cannot expect to escape the fatal effects of medicine prescribed by an ignorant physician.

"Therefore the intelligent man, who wishes health and long life, should not take any medicine prescribed by a physician who is a stranger to the art of application.

"Emboldened by meeting with providential success in his treatment of a patient destined to survive, the pretentious quack hastens to death and hundred others whose tenure of life is not so definite.

"The discriminating patient should avoid these unlettered laureates who put on the airs of physicians for the sake of a living; they are like serpents that have gorged on air."

In more recent times these quacks have earned the epithet "Yama's elder brothers" because they not only take away the lives of people but their wealth also. The West calls them "The Arms of the Honourable Company of Undertakers."

It is not possible for everybody to become an expert in medicine and not all pass through the strenuous years of study and practice required to obtain government approval which is essential these days. Therefore the quacks thrive and work secretly choosing the

ignorant as their prey. Their control therefore becomes a matter for the State to take up. Judging from the secret methods employed by the quacks as detailed in the texts, it is evident that in Charaka's there was such control.

REFERENCE:

1. Charaka Samhita (Eng. Trans.) Preface.

IN SEARCH OF PEACE

WE now come to another fundamental question. As was indicated in passing, before, health in the fullest sense of the term has its 'mansika' or psychic side and this attracted no less attention from the Hindu practitioners of the art.

We are living today in an age of tranquillizers. Daily some new tranquillizers are introduced and the older ones disappear and yet mental peace has not been assured; on the other hand, psychosomatic and neurotic disorders, i.e. physical and mental ailments in which both body and mind are simultaneously involved, are on the increase.

Psychosomatics seem to many of us to be a modern discovery, but the Ayurvedists were quite conversant with the intimate relationship between body and mind. For example, while defining fever they have said that it is a condition where there is a feeling of burning and heat in body, mind and organs. According to this definition, a patient may feel that he has fever, while the thermometer may not record a rise in temperature, which is considered to be normal according to the modern view. This condition would, however, be considered as Jwara (fever) by the Ayurvedic physician. Here it will be noticed that the feeling of feverishness in body (Sharirika Jwara) as well as in mind (Mansika Jwara) has been considered separately and then synthesizing the conditions known as Sharirika Jwara and Mansika Jwara, the Ayurvedists say that each of them results in the other and the treatment for both is given. Reassurance, consolation and talks of highly intellectual and advanced persons have been prescribed for the cure of the mental ailments.

The Ayurvedists attribute physical disorders to an imbalance of Tridoshas viz. Vayu, Pitta and Kapha, and mental disorders to an imbalance of Sattwa, Rajas and Tamas. When these three are in normal equilibrium, a healthy state of mind is maintained but when these are in imbalance, especially when the Rajo and Tamo Doshas increase and Sattwa decreases, then the equilibrium is affected giving rise to mental disorders, where normal behaviour resulting from a healthy mind gives rise to abnormal behaviour caused by an unhealthy mind. The Ayurvedists have gone very deep into this matter and wonderfully explained the symptoms of various mental disorders. Not only that but "Manodainya" meaning psycho-neurosis, "Manodaihic" meaning psychosomatic are also described

along with a host of other physical and mental disorders having relation among themselves.

As is evident from the lives of Ayurvedists, they were strict followers of morals and ethics in life and being staunch religious believers, they used to have a code of ethical living referred to as Achara Samhita, in which, as well as in the preliminary chapters of the texts on the science of medicine, while describing personal hygiene, they have laid great stress on carrying out moral duties. Asserting the importance of this they have said that by doing so one's mental condition will always be in a healthy state. They have laid such emphasis on morals not only because they were religious-minded but because they have carefully studied the effects of such moral practices on mental health and ultimately on physical health. They have therefore emphasised the practice of such morals.

In present times individual freedom has been growing more and more and there is no end to the limits of such freedom. Morals have been dubbed as dogmas and one's own sweet will has been allowed to decide whether to follow a particular pattern of behaviour or not; hence attitudes and forms of behaviour have been varying so much and the standards of morals have been differing so much that the ideals described in the ancient texts have been losing ground. Ultimately the keen Ayurvedic physician will observe that there is a fall in mental strength and naturally the equilibrium of Mansika Triad is disturbed, resulting in so many mental aberrations. The tendency to commit suicide is ever increasing, mental asylums are overflowing, with others eagerly awaiting entry, and the use of tranquillizers is growing day by day. The condition of sleeplessness or insomnia is not curable even by the strongest barbiturates and narcotics because the use of *such synthetic tranquillizers and strong hypnotics is not the real solution to the condition*. According to Ayurvedic theory, no drug can cure mental diseases permanently but reassurances, consolation and dietic treatment with the aid of drugs which have got a soothing effect and which will restore the mental equilibrium will help in correcting the condition.

Nowadays everybody is being subjected to heavy mental stress. The telephone, the calendar, the wrist watch, the television, the speedy jets and extreme speed in each and every direction — all these have left very little rest and as a result the so-called busy man is losing the benefits of recreation and relaxation. A person indulges in so many activities in such a way that the previous day's work is in arrears and fresh work is already in hand. This gives rise to mental irritation in one way or the other. The sharp memory which our ancestors possessed is rarely seen. Even with the help of the Appointment Diary and a Personal Secretary the Executive is not having real peace of mind.

In addition, it will be noted that we are losing the benefits of exercises like walking, swimming, massage and some physical labour as our ancestors used to enjoy. On the other hand, mental work has increased so much that if we make a comparison the ratio of effects produced by physical and mental exertions may well be one to six.

It will thus be seen that comparatively little or no physical work is done nowadays, while mental strain goes on increasing continuously. This condition has resulted in accumulation of fat in the abdomen and the body becomes obese. Energy is decreased and mental tranquilizers, mood elevators and drugs are called for.

Ayurveda has mentioned this sort of situation as being the predisposing factor responsible for various diseases like diabetes, piles, obesity, rheumatism and so on. Moreover, in regard to food intake, there is an increase of fat, proteins and carbohydrates, according to modern terminology. The diet is further enriched by large intake of multi-vitamins and mineral-added tonics, but the average man or woman today does not have the physical exercise needed to digest this heavy intake.

Dr. Alexis Carrel says in his book "Man the Unknown": "Perhaps the trifles of hygiene, medicine and modern education are not so advantageous as we are led to believe." He says "while the infantile diarrhoea, tuberculosis, diphtheria, typhoid fever are being eliminated, they are replaced by different degenerating diseases like insanity, nervous disorders, and intellectual weakness has become more frequent." He further adds "The unintelligent is becoming more and more common in spite of courses given in the schools, colleges and universities. Strange to say it often exists with the advanced scientific knowledge." This Nobel Prize Winner and well-known American Surgeon with the highest qualifications of modern medicine has in several places made similar statements which clearly indicate that the top-ranking modern scientists are not also happy with the achievements. The same doctor says that hospitals for the insane are full and overflowing and unable to receive all those who should be restrained. In the City of New York, according to Dr. C. W. Beers "one person out of every 22 has to be placed in an asylum at some time or the other." He adds "the diseases of mind are a serious menace. They are more dangerous than tuberculosis, cancer, heart and kidney diseases and even typhus, plague and cholera."

It will be interesting to note that not only the well-known surgeon, Dr. Carrel, but another authority, Dr. Kenneth Walker, well-known surgeon remarks "Now that India has obtained independence, we do expect that she will give us much from her ancient lore." This goes to show that the West is evidently hoping that there is much in the treasure of the

ancient Ayurveda that the West has yet to learn. Dr. Kenneth Walker has in many places made mention of this mental imbalance and has made a reference to the practice of Yogic exercises which lead to normal mental and physical health. We are observing in everyday practice that the average man or woman today is becoming more and more sentimental, emotional and sensitive. Little things affect the mind so heavily, and actions and reactions result in psychoneurosis, nervous debility and other psychosomatic disorders. Ayurveda has dealt with the causes of such disorders and prescribed the remedies. Simple drugs and herbs like Brahmi, Shankha Pushpi, Jatamansi and others have got soothing, calming and tranquillising effects.

Bertrand Russell in his famous book "The Conquest of Happiness" suggests various ways in which man can become happy but one of the most important ways Indian thought recognises is one propounded by the *Bhagwad Gita* which says "He who seeth inaction in action and action in inaction he is wise among men, he is harmonious, even while performing all action. . ." Having abandoned attachment to the fruit of action, always content, nowhere seeking refuge, he is not doing anything, although doing actions. This idea of non-attachment is the key to true joy.

REFERENCES:

1. Man the Unknown: Alexis Carrel.
2. Diagnosis of Man: Kenneth Walker.
3. A Doctor digresses: Kenneth Walker.
4. Charaka Samhita.

CONCLUSION

WHEN we are about to reach the end of our journey, we are reminded of the story called "The Disagreement as to the Description and Shape of the Elephant" contained in the book of Sufi wisdom, *The Mathnawi* of Jalalu'ddin Rumi, which runs as follows :

"The elephant was in a dark house : some Hindus had brought it for exhibition. In order to see it, many people were going, everyone, into that darkness. As seeing it with the eye was impossible, each one was feeling it in the dark with the palm of his hand. The hand of one fell on its trunk : he said ' This creature is like a water-pipe.' The hand of another touched its ear : to him it appeared to be like a fan. Since another handled its leg, he said ' I found the elephant shape to be like a pillar.' Another laid his hand on the back : he said ' Truly this elephant was like a throne.' Similarly when anyone heard a description of the elephant, he understood it only in respect of the part that he had touched. On account of the diverse place of view, their statements differed, one man entitled it ' Dal ', another ' Alif '. If there had been a candle in each one's hand, the difference would have gone out of their words. The eye of the Sea is one thing, and the foam another ; leave the foam and look with the eye of the Sea. Day and night there is the movement of foam flecks from the Sea : thou beholdest the foam, but not the Sea. Marvellous ! "

Dr Kenneth Walker, a Consulting Surgeon, who was formerly on the staff of several London hospitals, in his book " Diagnosis of Man," referring to this story, has very brilliantly exposed the defects of partial examination saying " Our hands fumble over the surface of the elephant, each of us proclaiming what we have found, and none of us being able to relate the part to the whole."

It is unfortunately true that everywhere nowadays the art of analysis is practised more and more while the sense of synthesis is becoming rarer and rarer and we are slowly losing the latter quality which our ancestors possessed.

We have introduced the subject of Ayurveda in a nut-shell, dealing with the different aspects of the subject, but all the time we have attached great importance to the Tridosha theory and its application. Keeping this principle in mind if a reader in search of truth evaluates Ayurveda as a whole, he will be able to understand it in its real form.

We are aware of the wonderful progress which has already been attained by modern science as well as surgery in the last few years. We are also very keenly watching the developments which are taking place and can to a certain extent imagine what the future pattern will be. Yet we do feel that the need for Ayurveda will remain for ever, because, as we have stressed in the beginning of this work, Ayurveda is not merely a collection of effective drugs, herbs and remedies, but is essentially knowledge of the art and science of living which man will need as long as there is life on this earth. We are aware that Ayurveda does need a face-lifting. We do not know how much would be achieved, but we are sure that the science which has stood the test of time will definitely survive and come up marvelously given the encouragement it deserves. The day will come when full scope will be given for research in Ayurveda and we are sure that it will add much to the usefulness of this art and science to suffering humanity.

Truth is always one. The same truth cannot be in two different forms. Only our vision to recognise it, appreciate it and apply it should be correct. There are some things for which there is no proof. We can only feel them, see them and experience them. The entry of the soul at the time of formation of the foetus cannot be proved microscopically and yet it is a fact that life does come into existence. We should again remember here: The sun rises in the east and sets in the west. There is a high tide and a low tide. There is day and night. There are the seasons, birth, growth and decay. There is appetite and digestion. All these are everlasting. Similarly Ayurveda is also everlasting.

The science of Ayurveda can accommodate various systems because as Pandit Shiv Sharma suggests, while describing Upshaya "the use of drugs, diet and practices, jointly or severally, contrary to the cause of disease, to the disease or to both the cause and the disease, or similar to the disease, similar to the cause of disease or similar to both, resulting in relief is known as the treatment of the disease. It will be clear from the above aphorism that the Ayurvedic physician officially and clearly fully accepts the principle of every science as alternate Ayurvedic efforts to the problem of health and disease. All the three categories of drugs, diet and practices are very vast". The Ayurvedic description of the physical and mental diseases is yet to be understood fully by the modern physician.

As we have shown by references and quotations, Ayurvedists were not ignorant of infection by germs, bacteria etc. Charaka while describing Krimis (worms) has divided them into two categories, external and internal. The external worms are found either in the hair on the scalp or on the skin of the body such as lice. The internal

worms exist in the intestines. These are described as round, long, thick, thin, small and big. They have been classified as Annaja (resulting from food), Kaphaja (resulting from Kapha) and Purishaja (resulting from Purisha or faeces). He ultimately describes the Raktaja Krimis (worms in the blood). These worms in the blood, according to Charaka, are so thin and minute that we cannot see them with the naked eye and yet they are there and aggravation by them results in disease. After giving this picture Charaka has given the treatment for the Krimis or worms. Instead of combating infection or killing the germs or bacteria he has suggested anti-Kapha treatment saying that particular diets and practices give rise to and aggravate these conditions due to worms and hence by abandoning such diets and practices, cure can be achieved.

Sushruta has in one place said that there are some diseases which are spread from one person to the other by personal contact, contact of organs or clothes, during the process of inhalation and exhalation, by staying or sitting together — such as fever, inflammation of the eye, leprosy, tuberculosis, measles, small-pox, etc.

It will be seen from the above two references that even thirty centuries ago the expounders of this system recognised Aupa Sargika Roga or infectious diseases. However, they were never in favour of bringing down the aggravated condition in a miraculous manner as is being attempted nowadays with antibiotics. The treatment was not confined to drugs, herbs or remedies. It consisted of various steps. The aggravated doshas were given ample time for digestion. Stages have been described in diseases like fever and leprosy where observation was made whether the aggravated doshas had penetrated deep and spoiled the Rasa, Rakta, Mamsa, Meda, Majja, Asthi or Shukra Dhatu. By this means it was also possible to decide the question of curability or incurability of the disease.

It will be further noticed that the Ayurvedists were conversant with epidemics and virus infections affecting the masses and taking a heavy toll of life. As we have seen before, the factors responsible for this Janapadodhwansa are Vayu (air), Kala (time), Desha (country) and Jala (water). The following dialogue between a master and his pupil throws more light on this aspect.

Pupil Agnivesh asked Lord Atreya “ The physical constitution of everyone is not the same, the diets and practices of individuals differ, everybody is not of equal strength, the physique of one is not similar to that of the other, one is very strong in will power while the other is weak, and even the ages vary; how then does death attack all at a time while epidemics range? ”

Lord Atreya answers, “ Oh, Agnivesh ! Though the physical constitution and other factors are different, the remaining factors,

Vayu, Kala, Desha and Jala are common to all and when they get deranged the masses fall victims to the epidemics. If there is something wrong with these factors, then, in spite of the differences in the constitution etc., mass killing takes place."

The Ayurvedists have described the symptoms of derangement of these factors. As we have observed, they were highly religious-minded persons and did not believe in an irreligious attitude. They have made the following statement: "When the leaders of the country, city, town or village adopt an irreligious attitude in their dealings with the public, then the dependants, subordinates and flatterers surrounding them lend weight to such irreligious attitude. Then Adharma (sin, etc.) eclipses Dharma (truth or religion) and that land becomes God-forsaken. When greed, avarice, pride and vanity hold sway over people's minds, they despising the weak and irrespective of the victims being their kith and kin, take to invading and destroying each other or get themselves destroyed by others."

Thus it becomes apparent that the Ayurvedists' thinking was not limited to infection caused by bacteria, etc. but they had a wider and broader vision. As it is not possible within the compass of an introductory book like this to give a complete picture of the etiology of all diseases, we advise readers who are interested in such details to refer to the texts.

The conception of Ama and Nirama theory (see Chapters 12 & 13) is a contribution which Ayurveda has made. Due to hypo function of Agni or gastric fire, the first and foremost body constituent, Rasa dhatu remains undigested, immature or unripe and this degenerated and spoiled (dhushta) Rasa is known as Ama. According to this principle, the various Dhatus and Malas are to be checked for their Ama or Nirama state.

Dr. Dhirendranath Ray, author of "The Principles of Tridosha in Ayurveda" writes as follows: "We are repeatedly being told by prominent public men and by those who practise modern medicine that to further the interest of Ayurveda it is necessary that it should be studied from the view-point of modern science and the sum of new ideas be incorporated in it. I do not deny the utility of an elementary knowledge of the modern sciences and modern anatomy for every student of Ayurveda. In fact, a thorough knowledge of the structure of the human body is essential and enjoined by Sushruta for those who wish to practise surgery, but is the knowledge of modern physiology essential for an Ayurvedic student? The physiology of western medicine is quite different from that of the Hindu medicine which is physiology of Vayu, Pitta and Kapha. Modern physiology may help an Ayurvedic student to some extent in the

study of the subject (I am not sure whether it may not mislead him in some instances) but what is more necessary for him is a study of the physiology underlying his own system of medicine. For the successful treatment of the disease according to any system of medicine, one must have a sound knowledge of the physiology and what is more to the point, of pathology according to that system. So anybody who professes to practise Hindu medicine must get to know the Tridoshas but to know the Tridoshas it is less than useless to study them from the point of view of modern science alone. To thoroughly understand the real meaning of what old Ayurvedists have told us about Vayu, Pitta and Kapha, we must study the subject from their view-point." Further he adds: "Steeped as we are from our very childhood in the ideas of the West—imbued with the ideas of western science—our whole outlook is vitiated, the view-point of ancient Ayurvedists and of the Hindu philosophers become obscure and we fail to grasp the real meaning of their writing. It is for this very difficulty that we of the new generation do not know of Vayu, Pitta and Kapha what Charaka or Sushruta or even Vagbhata did. The fault is not of the science of Ayurveda. It is entirely ours. So I would say to our critics ' Don't judge Ayurveda by the modern practitioners of that science of medicine ', just as a European Professor of a Missionary College once told us ' Don't judge Christianity by the present-day followers of Christ '."

It will be evident from Dr. Ray's remarks that a study of Ayurveda following the modern view-point will mislead the student. It is of the utmost importance that effort should first be made to study the Ayurvedic principles in detail from the Ayurvedic point of view. The next step is to make investigations and researches according to the Ayurvedic view-point and prove the utility or otherwise of Ayurveda from the point of view of the experts of the ancient science. The etiological factors of Vata, Pitta and Kapha are not to be dealt with in the microscopic way but prove to be of immense value if applied in practice, while treating the suffering person.

The Ayurvedist should never be upset by the charges levelled against this science, that Ayurveda is not scientific, because if the student will carefully observe, first of all, he will be able to recognise that these charges are often made by those people who are no experts and who do not even know the A B C of Ayurveda. These critics look to the progress of their science and are satisfied with that only. They, without caring to know anything about other systems of medicine and without keeping their minds open, believe their own system to be the best. In fact, no science is ever complete. The search for truth is going on and it will go on forever. Accordingly the Ayurvedic line of treatment is also subject to additions and amendments but these should always be made according to the

Ayurvedic view-point and not according to the view-point of the modern system of medicine.

Some are of the opinion that if we accept the present change in environment and incorporate modern methods in Ayurveda, that is, prepare Ayurvedic medicines with the aid of machines, compile a standard Ayurvedic Pharmacopoeia and adopt such other methods, Ayurveda will advance. Here we can have no objection. We do not abhor everything modern. In fact, we Ayurvedists, in our daily personal lives, make use of the radio, telephone, watch, motor-car, aeroplane and other modern conveniences. We are therefore ready to accept modern equipments and facilities in the cause of Ayurveda and to standardise Ayurvedic medicines according to the principles of Ayurveda. No right thinking man will object to it but we certainly are against the introduction of allopathic medicines in Ayurvedic treatment and vice-versa.

We are all familiar with the phrase "Once upon a time." As children we were fascinated by this expression, which was the starting point of every story we heard or read. Some followers of Ayurveda have stuck to these words. They proclaim that "Once upon a time such operations were performed and such marvellous results were achieved." Students and scholars who are worshippers of the ancient civilization feel happy when they hear such narrations. But Ayurveda is not to be dealt with in the manner of a story. Ayurvedic theories are practicable, adaptable and useful even today. What is more, we feel that Ayurveda today is needed much more than in the past, as the drugs, diets and practices now in vogue are not leading to a solution of the problem facing humanity but are only creating more and tougher problems. So the teachings of Ayurveda are never to be suppressed into inverted commas beginning with 'Once upon a time' but if the individual is to be made happy, if the family is to be made happy, if the nation is to be made happy, if the whole world is to be made happy, we will have to adopt and accept the knowledge and teachings of Ayurveda and put them into practice. Vagbhata in the beginning of *Ashtang Hridaya* says "Health is the prime need to realise the ideals of religion, monetary gains, desires and attainment (Dharma-Artha-Kama-Moksha) and to achieve all these great respect should be paid to the teachings and learning of Ayurveda."

We may conclude by saying that anyone sincerely interested in this Science and Art of Living—for it is this and not merely a mode of somato-therapy—must adopt the attitude of Colin Wilson's 'Outsider'. He must be genuinely detached, must know the 'feel' of the things and not be content with mere logical proof or empirical certitude and above all, have the courage to stand apart and not to be afraid of accepting something just because 'science' so far

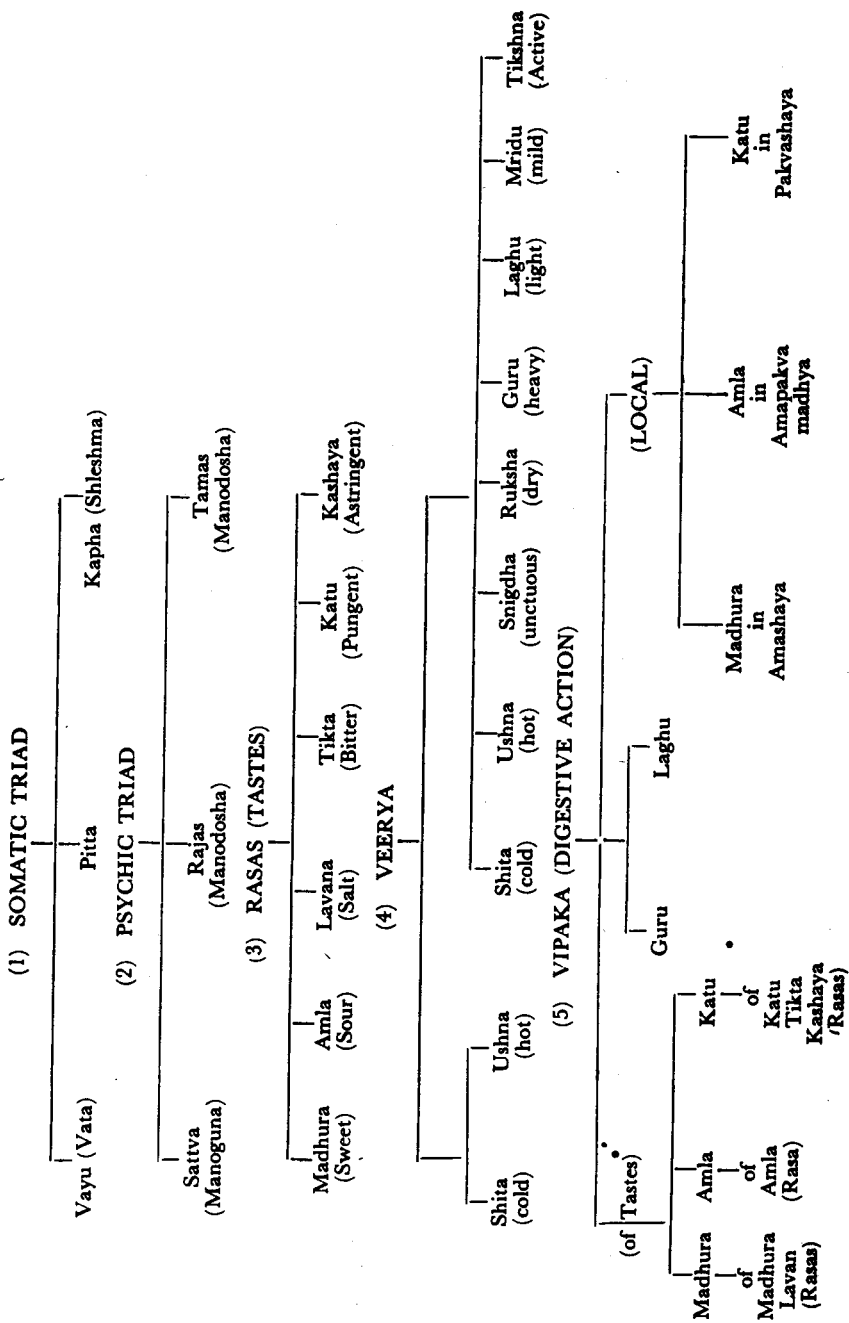
developed is not able to pass the final verdict on it. The true Ayurvedist is not an enemy of science but only sees in man more than meets the eye. We would also add that there is an imperative obligation on him to develop genuine and sincere faith in the worth and efficacy of this therapy and sound knowledge thereof, for otherwise it would be impossible to arouse interest in it in others; as William Blake said :

Nought loves another as itself
Nor venerates another so
Nor is it possible to thought
A greater than itself to know.

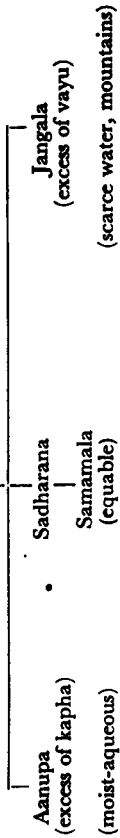
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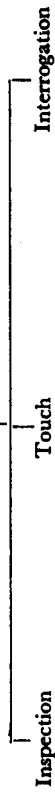
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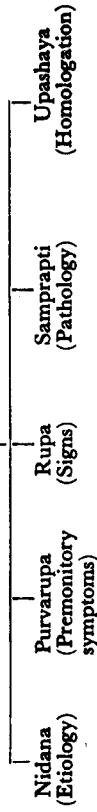
(6) DESHA (COUNTRY)



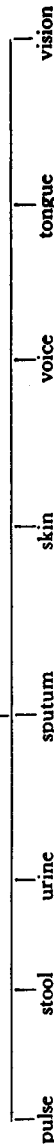
• (7) EXAMINATION OF PATIENT (THREE FOLD)



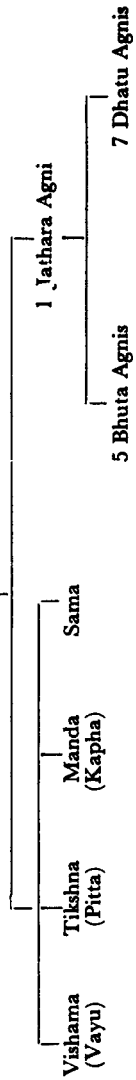
(8) EXAMINATION OF DISEASE



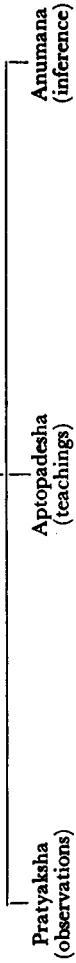
(9) EXAMINATION OF PATIENT (EIGHT FOLD)



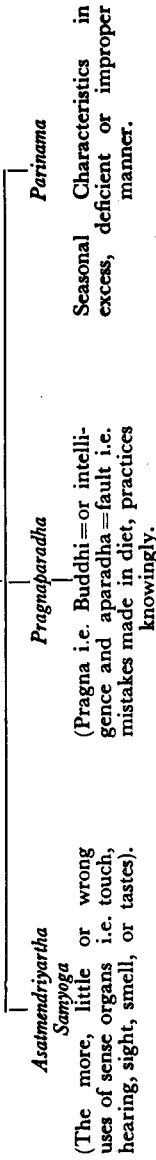
(10) AGNI (FIRE)



(11) METHODS OF DIAGNOSIS



(12) ETIOLOGICAL FACTORS



SIX SEASONS AND DOSHAS

<i>Vayu</i>	<i>Pitta</i>	<i>Kapha</i>
Sanchaya (Accumulation)	Varsha (Rains)	Hemant (Early winter)
Prakopa (Aggravation)	Sharada (Autumn)	Shishira (Spring)
Prasara (Mitigation)	Hemanta (Early winter)	Grishma (Summer)

A GUIDE TO PRONUNCIATION

Acharya	Ācharya	Nirama	Nirāma
Agneya	Āgneya	Pachaka-pitta	Pācaka-pitta
Ahara	Āhāra	Padārtha	Padārtha
Ahamkara	Ahamkāra	Pakvashaya	Pakvāshaya
Akasha	Ākāśa	Panchakarma	Pāncakarma
Alochaka-Pitta	Ālocakapitta	Panchabhautika	Pāncabhautika
Amashaya	Āmāshaya	Parashara	Pārāshara
Amla (fruit)	Āmlā	Prabhava	Prabhāva
Anupa	Ānupa	Prajapati	Prajāpati
Anuvasan	Anuvāsan	Prakriti	Prakṛti
Apana	Āpāna	Prana	Prāṇa
Aptopadesha	Āptopadeśa	Prithvi	Pr̥thvi
Apya	Āpya	Purva Rupa	Pūrva Rūpa
Artava	Ārtava	Purusha	Puruṣa
Ashtang	Aṣṭānga	Ranjaka	Rañjaka
Ashtanga Hridaya	Aṣṭānga Hṛdya	Rasayana	Rasāyana
Ashwinikumar	Aświnikumār	Rig	R̥g
Atma	Ātmā	Ruksha	Rūkṣa
Atreya	Ātreya	Rutucharya	R̥tucharyā
Ayurveda	Āyurveda	Sadhaka Pitta	Sādhaka Pitta
Bhavamishra	Bhāvamiśra	Sadharana	Sādhāraṇa
Bhava Prakasha	Bhāva Prakāśa	Sadvritta	Sadvṛtta
Bhrajaka	Bhrājaka	Sama	Sāma
Brahma	Brahmā	Samana	Samāna
Chakrapani	Cakrapāṇi	Samanya	Sāmānya
Charaka	Caraka	Samhita	Samhitā
Chaya	Cāya	Samkhya	Samkhyā
Dhatu	Dhātu	Shalya	Śalya
Dincharya	Dincharyā	Shalakyā	Śālākya
Dosha	Doṣa	Shlesha	Śleśha
Dosha-Samya	Doṣa-Sāmya	Sharangadhara	Śārṅadhara
Dosha-Vaishmya	Doṣa-Vaiśmya	Shukra	Śukra
Dushya	Dūṣya	Sira	Sirā
Garbhashaya	Garbhāśaya	Snayu	Snāyu
Guna	Guṇa	Sushruta	Suśruta
Harita	Hārita	Takshashila	Takṣaṣilā
Kashaya	Kāśaya	Tridosha	Tridoṣa
Kaya Chikitsa	Kāya-Chikitsā	Udana Vayu	Udāna Vāyu
Jangala	Jāṅgala	Upa-dhatu	Upa-dhātu
Lavana	Lavaṇa	Vagbhata	Vāgbhata
Madhava	Mādhava	Vaisheshika	Vaiśeṣika
Mahabhuta	Māhābhūta	Vajikarana	Vājikaraṇa
Majja	Majjā	Vayu	Vāyu
Mamsa	Mamśa	Vikriti	Vikṛti
Mithya	Mīthyā	Vipaka	Vipāka
Nabhi	Nābhi	Veerya	Vīrya
Nagarjuna	Nāgārjuna	Vishesha	Vīśeṣa
Nidana	Nidāna	Vyana	Vyāna
		Vayaviya	Vāyaviya

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APPENDIX

The method and manner in which our ancestors tried to understand the basic human traits — by dividing personalities into three typical categories, Vatika, Paittika and Kaphaja, or airy, fiery and aqueous — has been dealt with by us in Chapter VI, page 53. We feel it appropriate to give a detailed understanding of all this in the form of an appendix to this American edition of the book, as we have found out during our tours abroad that several doctors and people interested in medicine are eager to know more about it. We remind our readers of Kresmer & Shelly, who divided human behavior into ectomorph, mesomorph and endomorph. Recently, similar efforts have been made in "Searching Mind in Medicine" by Dr. A.R. William Thomson, Editor of "Practitioner." He divides the physical constitution into three groups, Lean, Obese and Medium.

A modern physician uses a particular drug in a fixed dose at some given interval as a routine medical treatment. The Hindu Ayurvedic treatment, however, will differ according to each individual human temperament. This is the distinctive aspect in which Ayurveda differs from the other systems of medicine.

The basic concept is that when the sperm (Shukra) and ovum (Shonita) meet for the purpose of conception, there is a medium in which they meet and in that local environment, according to the predominance at that time of air, fire or water, fertilization takes place and the embryo grows. Thus, the physical constitution is formed due to the excess of Vata, Pitta or Kapha (air, fire or water) or any two of the three. Caste, creed, country, race and parental factors *do* influence the physical constitution. But the frame in which they work has already been laid out at conception.

The word 'Dehakrakriti' or physical constitution has been used in the wider connotation of bodily pain. But it should not be forgotten that the Ayurvedists had a very clear-cut understanding that physique and mind are correlated, that physical pain has a definite effect on the mind, and mental agony on the body. On pp. 114-116 of this book you will find a description of Vataja, Pittaja and Kaphaja temperaments, which deals with the physical as well as the psychic behavior of different temperaments. The physician takes into consideration the mind of a person because the constitution includes Karmendriyas (physical organs), Gnyanendriyas (sense organs) and Mana (mind).

Whereas the air, fire and water elements (basic factors or Doshas), when in normal equilibrium and in their normal physical properties, maintain bodily health, there are three more factors — Sattva, Rajas and Tamas — which, when in normal equilibrium, keep the mind healthy. They

are called Mahagunas. While Sattva is mental quality, Rajas and Tamas are two mental Doshas and are vitiating factors as far as mind is concerned, according to Ayurveda (Ashtang Hridaya, by Vagbhata – Sutra Sthana, Ch. I).

An Ayurveda therapist must know the mental behavior of a human individual, for whenever he deals with the temperament, he deals with the Manasa Prakriti or the mental temperament; with analysis of the mind, its health as well as its diseases. He must have studied the normal and abnormal behavior of a person.

In the Bhagavad Gita, Lord Krishna deals with the temperaments of Sattva, Rajas and Tamas (Ch. XVII) and the diet liked by each. It is important to know the relationship of food and mind, not only in Ayurveda but also in various Upanishads, Puranas and mythological scriptures. The food which is taken for the nutrition of the body is composed of five basic factors – air, fire, water, ether and earth – and it maintains the body, which is composed of the same five elements. The food also affects the mind. A general proverb, existing in various Indian vernacular languages which are off-shoots of Sanskrit, says: “The purity of the food leads to the purity of the mind and the purity of the mind leads to the achievement of the mental plane of intellectual pursuits.” It is interesting to note that the food liked by Sattva, Rajas and Tamas temperaments is similar to that liked by air, fire and water temperaments.

It is noteworthy that, in advanced countries, many individuals are trying to give up alcohol, tobacco and non-vegetarian foods in order to increase the Sattva, the divine quality, and to control the Rajas (for human passions) and the Tamas (for animal passions). During my various tours, I have found an increased awareness of the importance of foods from natural sources. As far as health and medicine are concerned, the qualities described in Chapter IX of this book – ‘Diet,’ pp. 71-90 – apply *only* to naturally-grown vegetables. The tastes (and the effect on the human body according to the tastes) contained in fruits and vegetables are drastically affected by chemical fertilizers

For example, fresh milk, boiled once and allowed to stay, to which a few drops of natural buttermilk are added, turns into curds overnight. These have a natural taste and utility to the body and mind, whereas yoghurt and chemically- or synthetically-prepared curds and buttermilk have an altogether different effect on the human body. Chemically speaking, the content of proteins and other substances therein may be quite similar, yet the effect of fresh and natural food, and of synthetic and artificial food, will remain altogether different, whatever perfection is achieved in synthetic chemical preparation of food.

The Ayurvedic conception of examining a patient is based on knowledge of his normal physical and mental traits, and of departures therefrom

in the form of disease. Ayurvedists are very particular about the diet of the patient — eatable, chewable, drinkable or otherwise. The staunch orthodox conservative Ayurvedists differentiate even between curds and butter-milk. For each and every disease and for each and every temperament, there are lists of what to eat and what not to eat during treatment. This brings quick success to the treatment.

Sattva, Rajas & Tamas Temperaments (contd.)

In Sushruta Samhita, Chapter I, on “Sharira” (anatomy/physiology), we find, from stanza 18 onwards, this description of the physical temperaments based on Sattva, Rajas and Tamas:

The person of Sattvika temperament is not cruel but is kind-hearted, enjoys sharing his belongings with his own kith and kin, neighbors and the needy; can pardon; is fond of truth, pious in body, mind and speech; believes in God and is religious; believes in soul; is sharp in intelligence; has immense power of endurance; has a strong memory; and goes on acting without craving for the fruits of his work. It is worthwhile to draw the attention of the reader to Chapter XVII of Shrimad Bhagavad Gita, wherein Lord Krishna describes the food of a Sattvika person. The Lord says that Sattvika people like such food as will increase longevity and mental faculties, impart sound health and strong physique and produce pleasant and peaceful thoughts, which, in turn, increase the body nutrients. The Sattvika person likes food which is unctuous, which will increase the stamina and tolerance of the body and develop a healthy and steady mind.

The Rajas person can be described as awkward in movement, craving to wander, unenduring, proud, cruel, hypocritical, vain, longing for extreme happiness and honor and full of desires. The Rajas person likes pungent, sour and salty tastes; he likes hot, acidic, fried foods which produce heat and acid in the body, resulting in unhappiness, sorrow and disease.

The Tamas person is a nihilist, irreligious and impious, devoid of intellect, full of ignorance and sleepy throughout the day. He takes cold and stale food.

VATA, PITTA & KAPHA PRAKRITIS

Kapha Prakriti

The properties of Kapha are: Snigdha (unctuous), Shlekshna (smooth, polished, charming), Mridu (soft), Manda (majestically slow), Ardra (wet), Guru (heavy), Shita (cold), Swaccha (clear), Saumya (delicate), Picchil (slim, slippery), and Madhur (sweet in taste).

Each of the qualities mentioned above has its peculiar effect on the

Kapha Prakriti temperament. As Kapha is unctuous, the person of this temperament has skin which is soft, silken, fine and thin, as though the body were anointed with oil, or greasy. Therefore, when this unctuous quality of Kapha is to be treated, we use the opposite quality, dry or Ruksha. The Kapha prakriti person should not use an excess of unctuous food.

Vata Prakriti

The properties of Vayu are as follows: dry (Ruksha), light (Leghu), mobile or movable (Chala), quick (Shighra), cold (Shita), hard (Parush), unaqueous (Vishada); and spread all over the body (Vibhu). Keeping the above-mentioned properties in mind one can easily understand the nature and temperament of a Vata Prakriti person. His body is dry because of the quality of air (Vata) mentioned above; devoid of flesh and fat, and hence thin and lean. Most commonly, persons of Vata Prakriti have tall statures; the thighs and other limbs are devoid of flesh, the tendons and muscles of the body are clearly visible, the body looking stiff as though straightened and bound with ropes.

Compared to this, the physique of a Kapha Prakriti person is very unctuous, delicate, full of flesh, symmetrical throughout, and attracts the attention of others. The skin of the Vata Prakriti person is very dry and rough, whereas the skin of the Kapha Prakriti person is glossy, looks anointed, soft, polished, greasy, white and charming. The color of the Vata Prakriti person is dark reddish brown. (The reader is reminded that in various parts of the world, the color of the skin changes according to the race, trades and traits. Yet no matter what the complexion, a Kapha prakriti person will be fairer than a Vata prakriti person.)

Each and every part of the body of a Kapha prakriti person is well-built, symmetrical, full of stamina; the joints are steady; he is full of muscles and flesh, in such a manner that the tendons are not so visible as those on the body of the Vata prakriti person.

The tastes of a Kapha prakriti person are sweet, the voice melodious. His eyes are wide as if full of milk; the mucus membrane of the eyes is whitish. His chest is broad, his hair is full and black. He moves majestically like an elephant, or like a swan as it swims. The Vata Prakriti person is quick in walking, and has crackling body joints which produce a noise or rattling sound.

From the above descriptions, the reader can tell at a glance whether a person is of Kapha or Vata prakriti.

Pitta Prakriti

In between the above two is the Pitta prakriti person (i.e., the fire temperament), whose detailed description is not available. But we can

imagine that his body is not too thin, nor is it too well-built. The qualities or properties of Pitta are hot, pungent, sour, bitter and aqueous. The person of Pitta prakriti has a perspiring (sweating) body. His hair is thin, and falls out heavily. It is prematurely grey, and he goes bald very soon compared to a Kapha prakriti person. The Vata prakriti person, with his dryness, has hairs which are too small, easily broken and curly.

Another important factor of the Pitta prakriti person is that his body is full of moles, pimples and spots. This is also due to excess of Pitta. His mouth gets swollen easily, with slight excess use of pungent or acidic foods, while that of other prakritis is not so easily affected.

Due to the sweet taste of the Kapha prakriti person, he likes astringent and pungent things very much and they agree with and suit his body and physique, whereas the Vata prakriti person likes sweet, sour and salty things. Physicians have to keep these things in mind while deciding the prakriti of a person and the food he should take.

The Vata prakriti person eats his food very fast and he eats a lot because he is Ajitendriya, one who does not control his sense organs well. The Pitta prakriti person also eats a lot but he will not eat on and off as the Vata prakriti person does. The Vata prakriti person eats due to his fondness for various tastes rather than to satisfy real appetite, whereas the Pitta prakriti person has an appetite and eats whatever he likes voraciously. The Kapha prakriti person, being 'Manda' or slow, eats very little quantity. He does not have the appetite of a Pitta or Vata prakriti person. The Kapha prakriti person does not eat so quickly or frequently as the Vata Prakriti person. Even though he eats a little and moderately, his natural body strength and quality enable him to maintain a healthy and strong physique.

It should be mentioned here that Kapha is cold in action, and so the Kapha prakriti person likes hot foods very much; he can bear heat also. Vata prakriti or air temperament is also cold in quality, but due to other qualities in Vata prakriti, his strength is less and his endurance capacity differs compared to a Kapha prakriti person. On the other hand, the Pitta prakriti person, due to his fire element, cannot bear sunlight, heat etc. In the field of treatment, introducing drugs which are hot in action or pungent in nature, like *Anacardium Orientalis* (Dhobi's nut), will cause an immediate reaction on the part of the Pitta Prakriti (fire temperament) person.

As far as temper is concerned, the Vata prakriti or air temperament person is very quick and short tempered. He not only becomes angry quickly, but over trifling matters. In contrast due to the heavy qualities of Kapha, a Kapha prakriti person will never lose his temper easily. He will think twice before expressing his anger, and his endurance power is very great. The Pitta prakriti person is considered a warrior; he rises to the occasion, gracefully pardoning the enemy if the enemy surrenders. The

Pitta prakriti person builds up good relationships after forgiving the enemy, and maintains the same. On the other hand, the Vata Prakriti person will not be ready to forgive an opponent, no matter how necessary this is. He speaks of severing and closing down relations, all this to maintain his own pride and vanity. In speech, the tone of the Vata prakriti person is harsh and shrill like that of a broken horn, and very unpleasant to hear; whereas the voice of a Kapha prakriti person is steady, serious, sweet and melodious, and is compared to the voice of the clouds. It is full and healthy and in a tune which is maintained continuously. The Vata prakriti person is irrelevant in talk, full of repetitions; he does not give the other person a chance to speak. So on long journeys by air, sea or road, when you come in contact with such a person, you get tired of his talkativeness and unending commentaries on irrelevant subjects, which he sometimes forces you to hear whether you like it or not. On the other hand, the Kapha prakriti person is limited in his speech, purposeful, methodical and full of manners.

One of the qualities we have observed about the Vata prakriti person is his tendency to always be on the move; therefore his intellect is unsteady. He has no opinions of his own. He thinks of one thing once and in the next moment switches over to another subject. His memory is very short; he sometimes disowns his own statement, and if anyone tries to remind him of his exact position he cannot easily recall it. No reliance can be placed on him, as he changes his mind more frequently than not and puts others in an awkward position. Due to the movable and quick quality of air, he is very unrealistic in the beginning, and if anybody starts a venture relying on him, embarrassment will have to be faced. On first contact with a Vata prakriti person, one may feel he has met a nice person, but the Vata prakriti man is prone to behave strangely later, as though he knew nothing about the acquaintance. Anyone with sensitive feelings is likely to be hurt by the way a Vata prakriti person behaves. The Vata prakriti person may not necessarily lie, but by nature he is very forgetful and hence may commit blunders as far as his promises are concerned. Because of the unsteadiness of this movable quality, friendship as well as enmity with a Vata prakriti person is shortlived. He may hate someone today and tomorrow he may embrace the same person and shower love and affection on him as though they are the best of friends. Similarly, he may even break off from his beloved one. Therefore, he will not have a large circle of friends. Since the Kapha prakriti person has steadiness, he believes in friends and, with the noble qualities he has, maintains friendships; thus he has a large circle of friends. The Vata prakriti person, because of the movable quality of Vayu or air element, quite often behaves like a child.

As we have remarked, the Vata prakriti person is very quick in walking; in fact, if you have to walk with him, you will literally have to run to keep pace with him. While sitting, whereas the Kapha prakriti

person remains steady, the Vata prakriti person keeps on moving his hands and legs and twisting his body. If he is sitting in an easy-chair he may suddenly get-up, stand near the window and gaze in various directions aimlessly. His vision is not steady, and he keeps moving his eyes, lips and various parts of his body. So when you travel with persons of air temperament (Vata prakriti) and water temperament (Kapha prakriti), you can easily differentiate between them by their bodily movements and behavior in a seat or on a bed.

The sleep of a Vata prakriti person is unsteady, disturbed and full of dreams; it is very short and shallow. He wakes up at the slightest noise, whereas the Kapha prakriti person gets sound sleep and wakes up fresh and fit. The Vata Prakriti person, even after lying down for hours, still looks dull as though he has not slept for days.

Drugs can be a great problem for the Vata prakriti person. In order to forget his emotional upsets and sensitivity, he needs tranquillizers, hypnotics and mind drugs, and for the weakness brought by them, he needs mood elevators. But they are no solution to his problems. The physician should be very careful in prescribing him hypnotics, tranquillizers and mind drugs.

The Vata Prakriti person is fond of music, instrumental or vocal, dancing, jokes, laughter, hunting and quarrels. Music is a medicine for him as it prevents diversion of mind. The Kapha prakriti person also likes music but the difference is that the tunes liked by the Vata prakriti person are very fast, hectic and emotional, while the music liked by the Kapha prakriti person will be slow, methodical, classical and pleasant. The Vata prakriti person likes dances in which there are no classical rhythms and in which the body can be moved very quickly.

The Pitta prakriti person, who is a warrior by nature, goes in for hunting in its true sense and is satisfied with a hunt that is praiseworthy, i.e., he is satisfied by killing a lion or a tiger. He does not think of hunting small animals like hare, rabbit or squirrel, and does not like hurting them. The Vata prakriti person avoids hunting, because he is not so brave.

Something should be said in favor of the Vata prakriti person: his enthusiasm is unbounded, and quite a few personalities of international fame are of Vata prakriti. They make quick decisions and put them into action. It is rare to come across a person completely with Vata prakriti; the qualities of Kapha prakriti may be combined in him to some extent, and with the quality of Kapha he may have a good memory. But if a person is of pure Vata prakriti, he is easily pleased, and easily upset; today he may give a gift and tomorrow he may snatch it away. Or he may give a gift and, to satisfy his ego, never let the recipient forget it. So even the most valuable gift from a Vata prakriti person will be a curse to the recipient

It has been found that due to the Shita or cold quality of Vata, a

person of this temperament cannot bear cold, air-conditioning, etc., and the cold season may produce cramps, pain, chill, headache and body aches in him. He should be careful and control his diet. Cold drinks, ice cream, ice, cold water bath, direct wind, sitting or sleeping under the fan, etc., have been found to affect him most. Though the effect of these on a Kapha prakriti person is not so sharp, he, too, can be adversely effected. But the Pitta prakriti person, due to his hot temperament, likes cold water baths, swimming, etc., so well that they become part and parcel of his daily life.

The strength, progeny, longevity, wealth and friends of Vata prakriti persons are limited – they are not very strong physically, nor do they enjoy many relationships with the opposite sex, since they are very self-centered and very quick in the sex act. Due to insufficient quantity of semen, the life span of the Vata prakriti man is less than the Pitta prakriti person. The productivity of the Kapha prakriti person is greater and if both the husband and wife are of Kapha prakriti, their family will be big, whereas if both of them are of Vata prakriti, the family will be extremely small. The Vata prakriti person does not win over the masses and gain popularity.

It is noteworthy that our ancestors have compared each Prakriti with various animals and birds based on an understanding of their nature. Thus the Vata prakriti person is compared to a camel or dog (it is well-known that if any eatables come before them, camels and dogs immediately pounce upon them and gobble them up), a donkey or crow (who eat often – as many times as you feed them), a rabbit (which is scared by the slightest noise), or a rat (which is also nervous; it bites only sleeping men, and the slightest movement disturbs it). Further, the camel is tall, lean and not symmetrical; the dog is quick and active and wakes up from sleep at the slightest noise; the donkey is stubborn and brays repeatedly to the annoyance of men; the crow acts very shrewdly and cleverly. These animals and birds are also thin, dry, unhygienic, unhealthy and unclean – all qualities attributable to a Vata prakriti person.

The Kapha prakriti person is compared to the swan (for its cleanliness, white color and slow and steady nature in swimming), elephant (which stores vengeance in mind and takes revenge when the occasion arises, even after several years; it is also well-built and symmetrical in stature), horse and bull (because of their strength as far as coitus is concerned).

The Pitta prakriti person is compared to a snake (the snake does not harm anyone without reason, but when it senses danger to itself, it will act with all its venom), the monkey, the tiger, mongoose, bear and cat (all of which are ferocious in nature).

The body and mind are correlated and therefore the effect of the body on the mind and vice-versa can be understood when we look into the

personality traits and characteristics of Vata, Pitta and Kapha prakritis. Due to the basic qualities or gunas of Vata, Pitta and Kapha prakritis, persons born with a predominance of any one of these Doshas will have their nature influenced accordingly. For example, due to the qualities of Vata – movable, quick, etc. – the person born of this Prakriti will be ungrateful and unreliable, whereas the person of Kapha prakriti is faithful, reliable, trustworthy and pious. From the descriptions of Vata, Pitta and Kapha prakritis, we would expect idealism and trustworthiness in the person born of Kapha prakriti, while the person born of Vata prakriti is condemned. In fact, one has to be careful in understanding the exact prakriti of a person. The best way is, of course, to assess whether Vata, Pitta and Kapha factors are all in equal quantity. In Ashtanga Hridaya, Sutrasthana, Ch. I, Stanza 10, it is said that of all the prakritis, Kapha is the best, Pitta is middle and Vata is the lowest, whereas Sama prakriti or balanced temperament is the best of all.

It is to be noted here that apart from Vata, Pitta and Kapha temperaments individually, there are three other temperaments by combination of two of the Doshas:

- 1) Vata and Pitta (air plus fire)
- 2) Vata and Kapha (air and water)
- 3) Pitta and Kapha (fire and water)

These three are called Dwidoshaja prakritis or physical temperaments by the predominance of two Doshas.

A seventh temperament is the predominant combination of the three Doshas, where Vata, Pitta and Kapha exist to the fullest extent, i.e. Tridoshaja prakriti. This is indeed the worst of all.

The comparative description is very important for a physician as far as the prevention of disease and treatment of ailments are concerned. For example, if the prakriti is two-fold i.e. Pitta and Kapha, Pitta is hot and Kapha is cold and the treatment that is cooling and subsiding for Pitta may not agree with Kapha and the treatment that is hot may not agree with Pitta. So when a person of two-fold temperament is treated, the physician's task becomes rather difficult. Similarly, when a person is of Vata and Kapha temperaments combined, massages with oil and anointing the body for Vata may subside air but increase Kapha; but if fasting is used to subside Kapha, it may increase Vata or the air element.

Ayurveda was written and practiced in India by the Aryans centuries ago. When we speak of making Ayurveda applicable to the entire universe, we will have to apply certain considerations and come to a conclusion. The span of life varies in different countries. Today in some parts of the world, in Upper Asia and in parts of Russia, people live between 100 and 150

years and therefore their race, family tradition, country, age and strength all are to be considered as deciding factors for each prakriti. According to modern pathology, there are chromosomes in the sperm and ovum of the parents. In these chromosomes there is one distinct part called the gene. The scientists feel that the genes and chromosomes which were present from times immemorial have continued till today and for that reason every man of that race continues in the field of heredity. The great Ayurvedists thought further than prakriti in human beings; in the "Vriksha Ayurveda" they discussed the temperaments of Vata, Pitta and Kapha in the tree and plant kingdom. The great scholars like Vatsayana and Kalyanamalla in their scriptures of Kamasutra and Anandaranga have dealt with four types of persons like Shaha, Vrisha etc. among males, and Padmini, Chitrani etc. among females, and then they have compared the mating of a particular type of male with a particular type of female. In this connection we find that physical compatibility between particular types of people results in mental agreeability and happiness. In the homoeopathic system of medicine the physical and mental traits of a person are taken into full consideration and a detailed and careful case history is made of the patient – his likes and dislikes, the type of life he leads – to decide upon the course of treatment to be followed.

We can all benefit from the study of these prakritis or physical temperaments. To make our point clear, we will give here a few examples. There are certain things in our life in modern society which have been in practice from the times of primitive society. Man used to get addicted to various intoxicants like alcohol, tobacco and other mind drugs during the days of uncultured and uncivilized society. The necessities of man went on increasing with the development of society, villages, towns and cities, and today man claims to be highly educated, enlightened, cultured and civilized. The methods and manners of social gatherings and meetings have changed, but the hidden human instinct has remained the same. Every now and then a person asks himself the 100 million dollar question – whether he should accept this or that practice in actual use. To this he has no affirmative answer other than a notice published on the packet of cigarettes that "Tobacco is harmful to health" or some books which give the uses and abuses of alcohol. On the other hand, efforts are going on to establish that mind drugs like Marijuana are quite harmless and innocent. At this juncture, the knowledge of one's own individual physical temperament is very important in deciding what should be one's own criterion.

For example, a person of Vatika temperament will get an immediate 'kick' from alcohol or tobacco, whereas, according to Ayurveda, these substances will be more agreeable and suitable to the Kapha temperament. This is merely a degree of agreeability in comparison. Now let us consider it the other way. Among the varieties of drinks of an alcoholic nature,

brandy is prepared from grapes and beer from barley. To a particular person grapes may agree and barley may disagree, or the reverse may be the case. To a modern chemist, however, it is only the percentage of alcohol in a drink that counts, while to a nutritionist, it is the calorific value that matters. But what interests an Ayurvedist is the basic fundamental productive factor of a particular thing for a particular temperament.

It has been found that people of the air type are very good musicians, actors and singers compared to other types, because for them dance, music, acting etc. are very easy. To imitate is very simple and easy for persons of air temperament and so they are experts in the art of mimicry. Sometimes it happens that the leader of a nation is of Kapha prakriti and so virtuous and praiseworthy as to lead the nation to the highest position; whereas leaders of two nations who are both of Vata prakriti, instead of agreeing with each other, may play a foul game due to qualities of unreliability, distrust and quick temperament, leading to the unhappy episode of war between the two nations. According to Plato, war is not between two nations but between the minds of two rulers.

Let us take another example. In a family where there are more than three or four persons (husband and wife and one or two children – and in any Indian-type family some more relatives will be staying together), each and every person having basic characteristics will behave in a certain peculiar way. Let us take the example of a television set. The Vatika type of person will make the sound unduly loud, so much so that it becomes unbearable; the Pittaja type would have it moderately, and the Kaphaja will not only think of the people present but will calmly consider whether there is any nuisance to the neighbors. If hunger is considered, taking the same family, the Pitta temperament person would insist on food at a particular fixed time and become furious if he or she does not get it at the desired time. But the Vata type of person would go on consuming anything at any time and may start enquiring about the availability of food much earlier than the fixed time, while the Kaphaja temperament or water personality would wait because his gastric fire is slow and his physical and mental strength permits him to wait. If parents know the basic characteristics of air, fire and water temperaments in relation to their children, it will help them considerably in bringing up their children in ideal conditions for perfect growth.

During illness, the bearing capacity (endurance) of a person differs according to one's own prakriti. A person of the air temperament will cry and shout at the slightest pain. On the other hand, the Kaphaja type would be able to bear pain to a much greater degree.

In family life, if husband and wife both are of Vata prakriti, affection and attachment in the earlier stages may be very high due to the enthusiastic quality of the temperament, but with the passage of time, on account

of their basic qualities, they may become unfaithful, unreliable and ungrateful to each other. In countries like India, where divorce is not so common, they would live together in a state of virtual separation, whereas in modern sophisticated countries, divorce would be the only solution.

Many other examples could be cited here but the scope of this book prevents us from doing so.

The other day I was reading the postscript written by Colin Wilson to his book 'The Outsider,' where he confesses that "I have taken more than 10 years to create my new existentialism and it seems to me that I am working upon the most interesting problem in the world, the *only* interesting problem. England is totally unaware of these problems; intellectually we have always been the most backward country in the world. Europe has little to offer, besides the bed of Satre and Heidegger. And yet in spite of this, I feel that immensely exciting things are about to happen, that we are on the brink of some discovery that will make our century a turning point in human history."

We could apply his observations to a greater extent in the field of health and medicine. To achieve the goal of happiness, a healthy body is the medium not only for one's self but also for one's family, society and nation. To understand one's own self is the most important thing, and Ayurveda gives the clue how to understand yourself, what you are and what you could be. An understanding of Deha Prakriti will not only be helpful for the physician-patient relationship; it will be invaluable to the person who wants to keep himself away from drugs and disease.