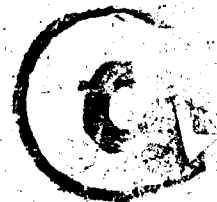


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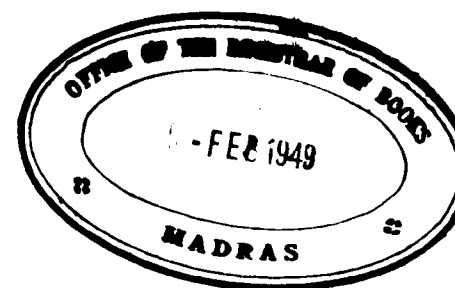
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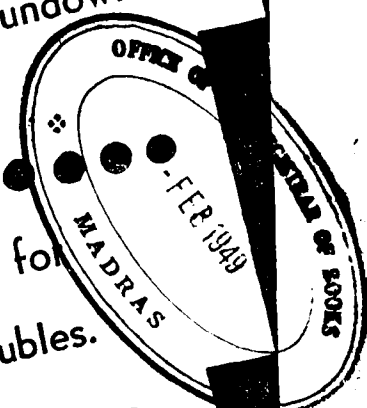
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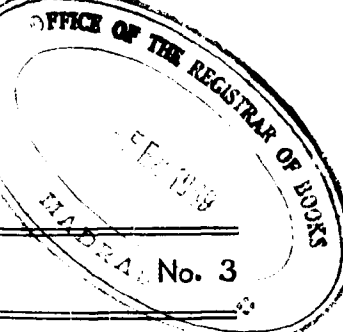
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A SEAL OF RELIABILITY

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Treatment of some acute and chronic diseases

The following is extracted from the Presidential Address of Vaidya Shironmani Kaviraj Manindra Lal Das Gupta M. A. M. B., Kaviratna at the Atura-Raksha-Sambhasha Parishat 29th All India Ayurveda Sammelan, Jodhpur. The treatment he has discussed for the diseases mentioned therein are worthy of being followed by the practitioners and the results thereof brought up for discussion through the columns of this Journal).

"Now I shall delineate some lines of treatment followed by us in the following diseases with successful results:—

- (1) Typhoid fever (सन्निपातिक ज्वर)
- (2) Pneumonia (वातश्लेष्मोत्पन्न सन्निपात)
- (3) Meningitis (अभिन्नास ज्वर)
- (4) Nephritis and other oedematous conditions (शोथ)
- (5) Ascities (जलोदर)
- (6) Chronic Diarrhoea or Tabes Mesenterica (ग्रहणी)
- (7) Acute Rheumatic Fever (आमवात)
- (8) Blood Pressure (मद, मूर्च्छा, संन्यास)

1. सन्निपात-ज्वर—Typhoid fever may suitably be likened to सन्निपातिक ज्वर in Ayurveda. There are 13 types of सन्निपातिक ज्वर according as three दोष's prevail in different degrees. So also we see typhoid fever has got different varieties with gradations of symptoms. In all sorts of typhoid fever there is ulceration of the last portion of small intestines, producing toxins which are

responsible for the fever and accompanying signs and symptoms. The disease runs a course of a few weeks, and as one week follows the other, the patient gets intermission of temperature. So it is said:—

‘सतमो द्विगुणा चैव नवम्येकादशो तथा ।
एषा त्रीदोषमर्यादा मोक्षाय च वधाय च ॥’

The physician should take all precautionary measures, so that these fateful days of intermission may pass off smoothly. In Marwar this disease may well be compared to मेयादी बोखर.

In the early stage of the fever सौभाग्य-वटी, स्वल्पस्तुरी भैरव do good to assimilate the आमरस, and also to combat the fever मकरध्वज with मूत्रकारक अनुपान should also accompany this recipe (in order to ensure good micturition and consequent elimination of toxin). पड़ङ्गापान should be given by sips to allay thirst and help micturition. No क्राय is to be allowed in heavy quantities as this practice causes tympanitis and purgation. If

tympanitis (आप्यमान) causes distress, it will be relieved by application of दारुहैम त्यादि प्रलेप. Intense head-ache and brain symptoms may be relieved by the application of नागवल्लीदलरस and शतघृतघृत over the shaved scalp. Diarrhoea or अतिसार is met with सिद्ध प्राणेश्वर, आनन्द भैरव, when we stop सौभाग्यवटी and prescribe instead मकरध्वज with महालक्ष्मीविलास. Other complications are treated according to their nature. For instance, if there is delirium, चतुर्भुजरस and बृहत् कस्तूरी भैरव respond well. In typhoid fever we should think thrice before we prescribe a purgative. To relieve contents of lower bowel, stem of मुक्ताभ्रम or मुक्ताक्षुरी (*acalypha*) may be inserted into the anus which will surely produce evacuation of the contents. In case of haemorrhage, we are to prescribe रक्तपित्तान्तक medicine. In this case the following काथ proves marvellous:—

लाक्षा, उदुम्बर, वत्सक, उशीर, अतिविषा and लोघ्न. Mouth should be kept properly and regularly cleaned in order to avoid bowel diseases or अतिसार or कर्णमूलशोथ as is said 'सन्निपातज्वरस्यान्ते कर्णमूले सुदारुणः शोथः संजायते तेन कश्चिदेव प्रमुच्यते ॥

The physician should remain well-equipped and always alert when he treats सन्निपात. So the Shastra says:— 'मृत्युना सह योदूष्यं सन्निपातं चिकित्सता ।'

II वातश्लेष्मोत्पन्न सन्निपातिक ज्वर or Pneumonia—Mahamahopadhaya Ganatanath Sen names it श्वसनज्वर. This disease is

self-limited resulting in recovery after a very short period. The medicines prescribed are शृङ्गाराभ्र, प्रवाल and मकरध्वज compound, मकरध्वज, सगोक्षुरतृणपञ्चमूल-काथ. For relief of cough अष्टाङ्गावलेह with honey does good. To relieve congestion of lungs, hot नालुका, or रास्नाहरिद्रादि प्रलेप of चरक may be applied to the chest. In case of difficult breathing some Mechanical contrivance should be devised to keep the chest of the उत्तानाशायित आतुर suitably upraised.

In Pneumonia, "crisis" calls for the intelligence and skill of the physician. During the crisis, fever falls down all on a sudden and reaches a sub-normal state. Hands and feet get cold and clammy. The patient perspires, and becomes much exhausted and weak. Stimulants such as मृगनाभि, मकरध्वज, चतुर्भुज रस, and मृतसजीवनीसुरा work miracles. Then शटी powder may be rubbed over the body.

In pneumonia, it is essential that the patient should have enough of free air and light, and absolute rest in bed. No movement whatsoever should be allowed for fear of injuring the lungs. The chest should be well protected from cold and draughts, failing which the congestion in lungs is likely to assume a grave form.

III अभिन्ध्यास ज्वर:—Meningitis can be compared with अभिन्ध्यास ज्वर of Ayurved. It is also a सन्निपातिकज्वर with वायु and

श्लेष्मा predominating, but the seat of infection is more in the brain than anywhere else in the body, and hence the almost unconscious condition the patient is found in, in this disease. Until recently, we Ayurvedists grew almost oblivious of the good treatment innate in Ayurveda for the fell disease. For some years past, Calcutta has been paying a heavy toll to it. This curse came rather as a boon to the afflicted and the Ayurvedists. We tried our Ayurvedic medicines and they proved so efficacious. They mostly contain cobra venom (सर्पविष) in them. The medicines used are सूचिकामरण, अघोरनृसिंह-रस, महावत्सरास etc. In serious cases the skin of the scalp is scarified and सूचिकामरण applied. श्लेष्मा being predominant in this disease, मृदुवालुकास्वेद on the scalp is well-advised. Results by this method of treatment are very happy.

IV. शोथ:—In Charaka the following हेतु, किञ्च सम्प्राप्ति are given about this malady. शोथरोग is the result of संशोधन, consumption of too much alkali or acid, pungent or undigestible substances or of दधि, विरुद्धभोजन (taking incompatible substances together) piles, enlarged spleen, or liver or due to trauma. Of the doshas which are prevalent, Charaka mentions वायु, पित्त and कफ. Of these again, वायु corrupts कफ, पित्त and रक्त with the help of various आमरस's and thereby produces शोथ or oedema. So all Shothas are त्रिदोषज, but owing to the preponderance of one of the doshas over the

others the शोथ is named after the most predominating दोष. We get वातिक, पैत्तिक or श्लेष्मिक शोथ, and further there are six other varieties namely, वातज, पित्तज, वातश्लेष्मज, त्रिदोषज, अभिघातज and विषज.

According to western medicine, there is a variety of शोथ known as Nephritis, where the kidneys are at fault, and the westerners classify it as acute and chronic, the latter again into chronic parenchymatous and chronic interstitial Nephritis. All these may be likened by the Ayurvedists to त्रिदोषज शोथ, and epidemic dropsy (आधुनिक संक्रामिक शोथ) of the westerners can be compared with कफज शोथ of Ayurveda. In the latter variety symptoms are, anorexia, salivation, tendency to sleep, vomiting, and dyspepsia. Whatsoever may be दोष or दूष्य, the following medicines work magically in शोथरोग. पुनर्नवाष्टक काथ—if there is diarrhoea omit तिक्ता and अमशा, and in their places prescribe अनिविष and वत्सक, नवायस लोह, बृहत् चन्द्रप्रभा with मूत्रकर अनुपान or काथ like तृणपञ्चमूल, and रघूणाद्य लोह with juice of श्वेततुनर्नवा do well. In Bengal, the वृद्ध वैद्य's often prescribe दूग्धवटी in case of शोथ with diarrhoea by withholding water and salt. So also दधिवटी and तक्रवटी may be given. Of the various oils, the following may be prescribed for innunction, वृ: शुष्कमूलाद्य तैल, शैलाद्य तैल, and समुद्र शोषण तैल. For dietetics मानमण्ड is an excellent recipe and works both as medicine and food.

VI. जलोदर (Ascitis):—

जलोदर is one of the eight varieties of उदररोग as described by our *Sastra*. In this disease, the Ayurvedist is still regarded as a specialist, and in Calcutta I have seen many reputed allopathic doctors seeking the advice of Ayurvedic friends as consultants for treatment of this fell disease. I need not mention here in detail how misuse of स्नेहपान, अनुवासन, बमन, त्रिरेचन and निरुहण may lead to जलोदर, but I should like to mention one or two words from western pathology as the निदान of this disease. They say—in जलोदर there is accumulation of fluid in the peritoneal cavity, the main cause of which is partial obstruction, and generally it follows cirrhosis of the liver. According to them, it is an incurable disease and जलोदर's are given up as hopeless cases by our doctor friends. In Bengal, the humblest member of our profession can boast of curing at least a dozen cases of जलोदर. We generally treat these cases with पर्पटी, and that again, we give in क्रमबद्धि हानिमात्रा. The following preparations are generally used:—रसपर्पटी, स्वर्णपर्पटी, लौहपर्पटी, पञ्चामृतपर्पटी, and विजयपर्पटी.

The following instructions should be given to one using any one of the above पर्पटी preparations. He should not expose himself unduly to cold, draughts, sun's rays, nor should he be oppressed by anger or deep meditation. He must be regular in diet, nor should he take too much of physical exercise, or do any

hard manual labour. As to bath he should never take a complete bath with cold water. His diet should consist of milk and super-boiled rice with sufficient sugar. In any case, salt and water are completely withdrawn from dietetics. If there is unbearable thirst, green cocoa-nut water or काकमाची water can be given. The preliminary dose is 2 *Ratis*, and we go on increasing by 1 *Rati* till 10 *Ratis* is reached, and bring it down by 1 *Rati* till the original 2 *Ratis* is attained. So we see for one complete course of क्रमबद्धिहानि पर्पटी प्रयोग we require 21 days and mostly patients improve favourably within this period.

Here I should like to draw your attention to the fact that in Bengal, we generally apply पर्पटी when जलोदर is attended with diarrhoea. If a जलोदरी has got absolute constipation, we would prefer giving पुनर्नवाष्टक पाचन, नवायम लौह, पञ्चामृतलौहमण्डूर, पुनर्नवा मण्डूर, and such other drugs.

For जलोदर चिकित्सा 'paracentesis' or 'tapping' was known to the Ayurvedist long before the westerners could dream of it, just as hospitals were conceived of in India long before the idea dawned upon the Occident. In सुश्रुत-चिकित्सित-स्थान, chapter XIV, 22-23-24, tapping in cases of Ascites has been thus advised:—Pierce the abdomen 4 fingers away from the middle line, below the umbilicus upto the length of अङ्गुष्ठोदर with व्रीहिमुख्यन्त्र, and insert a double-channel-

led tube made of वङ्ग or some such metal, and draw out the impure water from inside the peritoneal cavity. He also enjoined not to take out the whole of the water, as that may give rise to various untoward symptoms, nay, might even prove fatal to the patient.

We can say in this connection that व्रीहिमुख्यन्त्र may be said to be the forefather of the modern *ascites* 'trocar and cannula'. Here I may be permitted to mention that the western science of medicine is certainly indebted to Ayurveda for its recent discoveries in the field of mercurial synthetic products, known as *Salyrgan* and *Navasural*, which have proved to be the best diuretics in the treatment of ascites. The German pharmacists were struck with wonder by the high potency of पर्पटी, and they made extensive research works before they could bring out the two medicines mentioned above. They are, no doubt, very powerful diuretics, but not without bad effects such as salivation, gingivitis, etc., which, I can boldly say, never happened with our पर्पटी.

VI. ग्रहणी—It may be compared with chronic Dyspepsia or Tabes Mesenterica. At first we try वतसकादिकाथ, पीयूषबलीरस, उदरामयोक्त मर्वाङ्गसुन्दर, वृःलवङ्गदि, मंहाराजनृपवल्लभ, ग्रहणीकपट. When the above medicines fail, we prescribe either रसपर्पटी or स्वर्णपर्पटी. Generally in case of ग्रहणी, it is given in क्रमबद्धि-हानि-मात्रा just as in

जलोदर-चिकित्सा. There is another School of Physicians who prescribe पर्पटी in fixed dose, say, 2 *ratis*. In the latter case, there is no restriction of diet, i. e., withdrawal of water and salt, and they even allow other medicines along with पर्पटी.

VII. आमवात—It may be suitably likened to acute rheumatic fever of the westerners. In both, there are fever with pain, and swelling in the joints often shifting from joint to joint. The knee-joints are commonly involved. There is heart affection, often leading to organic defects. In our *Sastras*, the latter condition is mentioned as हृदग्रह.

Pathologically, आमवात is essentially a disease due to excessive accumulation of आमरस. A look at the affected limb or limbs of the patient convinces one of the truth of this fact. So our treatment is more or less confined to the elimination and assimilation (पावन) of आमरस. In the beginning, we prescribe रास्नापत्रक काथ, वृः वातगजाङ्गुल, लक्ष्मीविलास, रामवाण रस, वैशानरचूर्ण, मकरबज्र. About 10 days after or so, we substitute रामवाण or लक्ष्मीविलास by रमोऽग्नि ड and योग राज गुग्गुलु, and instead of रास्नापत्रक we advise रास्नादःसूत काथ. Hot नाटुक, or शोभाजन आर्द्रक and powdered rice mixed together and applied to the swollen or painful joints, yield the effect of diminishing the swelling and pain. The patient ought to be protected well from cold and wrapped up in warm clothes. Warm water

should be given for drinking purpose. Bowels may be moved by एरुन्ड तैल or enema, if necessary. Later on, स्वरगमिह-नाद गुग्गुलु is effective. If heart complications arise, they are to be treated accordingly, but in that case the prognosis is very grave. To ensure proper micturition सगोक्षुर्गन्धमूलक may be prescribed.

VII, Blood Pressure—मद-मुच्छा-सन्धास.

According to the western system of medicine, it is a symptom complex characterised by hyperpiesia depending on the following factors:—Power of contraction of the left ventricle, the volume of blood forced into the aorta, condition of the arteries especially their elasticity, vasomotor tone particularly in the capillaries, and lastly the peripheral resistance of the arteries. In short, it may be said to be the pressure exerted by the left ventricle minus peripheral resistance of the arteries. The blood pressure is not fixed in health, but varies especially with exercise and nervous disturbance. The normal pressure is again of two kinds, viz., the systolic and the diastolic. To express blood pressure the western clinicians use the systolic pressure as numerator and the diastolic pressure as denominator. In English, there is a saying "A man is as old as his arteries." Thus we see blood-pressure is variable. Generally, it is determined by adding 90 to the age of the patient which will give you

systolic pressure, and the diastolic pressure is ascertained by deducting 1/3 of systolic pressure from it e. g., a patient aged 40 will record 140 as systolic and 85 as diastolic. The difference between the systolic and diastolic is known as pulse-pressure. If the pulse pressure is more than 40-50, it is a grave sign. Clinically it occurs in a variety of conditions. The most important are the following:—(1) Hypertrophy of the left ventricle, (2) Essential Hyperpiesia (the cause of this is obscure, but it often leads to changes in the vessels, and to renal changes, which lead to chronic Nephritis with Hypertension), (3) with renal disease, (4) with some cases of arterio-sclerosis, (5) with disturbances of endocrine glands, (6) with intra-cranial conditions causing increased intra-cranial pressure, and lastly, (7) with obesity. By the western clinicians the blood-pressure is determined by a mechanical instrument known as sphygmomanometer.

In Charaka सूत्रस्थान (विधिशोणितोऽथ अध्याय, Chapter 24) the sage describes a group of diseases which he terms मदमुच्छासस्य स, which may suitably be compared with blood pressure of the westerners, the last condition of the above being similar to apoplexy of the western medicine. According to Charaka, it is essentially a blood-disease, and the sage gives a long list which causes poisoning of that vital fluid, which he pelienates as 'सविशुद्धं हि रुचिरं बलवर्णसुखायुषा

युनक्ति प्राणिनां प्राणःशोणितं हनुवन्ते. Then to start treatment of the above condition he says:—

कुर्याच्छोणित रोगेषु रक्तपित्तहरो क्रियाम्
विरेकमुपवासं वा स्त्रावनं शोणितस्य वा ॥

Now here the East and West meet in such a way so far as the treatment of a disease is concerned. The westerners always stick to three cardinal principles in a case of Blood Pressure:—(1) Purg-ing, (2) Fasting, (3) Blood-letting which also are the secret ways of success advised by our sages long long ago.

Now to come to the actual medicines for this condition, we would suggest the following courses of treatment. कथं of त्रिफला, the first thing that a patient should take early in the morning. Of Sastric medicines, the following are useful. रसरज रस, बृहत्वातविन्तामणि, योगेन्द्ररस of घृत's पानीय कल्याण घृत, तिक्त घृत, पट्टपल घृत, silajitu, pippali bardhaman, etc. For external applications कौश्ल घृत does good.

In recent years, an indigenous drug सर्पगन्धा (Ranfolia serpentina), Bengali name छोटे चांदीर, Hindi name चनमर्या has been found to be a specific in B. P.

Formerly, the Vaidyas of Northern India, Behar and Bengal used to administer this drug as a specific for insanity and many known proprietary medicines are said to contain this drug as one of its ingredients. The illustrious votary of Ayurveda, and my most revered Guruji Mahamahopadhyaya Gananath Sen made an extensive research with this drug on B. P. a with few other drugs in it. But the main action of diminishing blood pressure and keeping it steady is due to सर्पगन्धा. We generally begin with six ratis of the powdered root and may rise up to 4 annas weight without fear of any ill-effect. It is a first class blood-pressure diminishing agent, a nice hypnotic, a mild laxative, and also due to its bitter principle, an antipyretic. It may be given either as a drink with मिश्रोजक, or may be made into pill masses according to the dose desired with a little honey and swallowed. For a blood-pressure case we advise सार्विक आहार, all albuminous and highly nitrogenous foods should be curtailed; no intoxication such as excessive tobacco wine, etc. should be allowed. Proportionate physical exercise and less mental work should be done by the afflicted."

Therapeutic value of breast milk.

By

DR. P. N. BHAT, L.I.M., KASARAGOD.

Dictates of fashion play an important role not only in the piece goods and motor car markets, but also in the field of therapeutics. Even the educated and otherwise intelligent patients who come to our consulting rooms often demand for the "Latest injection" and vitaminous tonics. Of course, the majority of the vitamins sold in the market are quite harmless and satisfy the first principle of therapeutics described by Hutchison "the treatment must do no harm." and the large number of injections have the virtue of benefiting the giver rather than the recipient. Often it is the auto-suggestion that, one is receiving so many injections at considerable cost of money (and pain too) that benefits rather than the stuff injected. By force of habit the average physician in the country deludes himself in the belief that it is the particular vitamin that has turned the tide in favour of the patient. The half-educated manufacturer's representatives of the "latest remedies" profess to pour scientific data and knowledge across the practitioner's table with their colourful leaflets. The dazzling glare of penicillin and blood transfusion has blinded the vision so much that the former is considered

a veritable "atomic energy" in the domain of therapeutics. In an atmosphere like this it may not be out of place to remind ourselves of some of the proven and simple remedies, though there may be nothing spectacular about them.

There are occasions in the course of our practice when the conscientious physician withholds even the morphia needle for fear of the after effect of vomiting, which is often induced by the durg and when no suitable remedy suggests itself as an alternative the physician begins to scratch his head.

Repeated haemoptysis in pulmonary tuberculosis, severe epistaxis of the ideopathic type where no cause can be discovered and haemorrhage in the course of typhoid fever are instances to the point. These conditions cause alarm to the patient and anxiety to the attending physician. In these conditions before thinking of measures like blood transfusion etc., which of course read well in text books "give a pint of blood and operate" but have a limited value in country side practice, it is worthwhile giving a trial for human milk.

Before giving a few instances of my experience on the value of breast milk in

bleeding conditions in my general as well as ophthalmic practice I wish to quote the following authorities on the subject.

मानुषं वातपित्तासृगभिघाताक्षिरोगजित् ।
तर्पणा श्रोतनैर्नस्यैः

(अष्टांगहृदय सू०)

"Used as Tarpana, Aschothana and Nasya, human milk is useful in diseases due to Vatha, Pitta, Kapha and in traumatic conditions."

In the armoury of the ancient ophthalmic surgeon, breast milk seems to have occupied a place analogous to that of adrenaline in the armoury of the present day eye or E. N. T. Surgeon.

Sushruta recommends human milk for instillation into the eye after many of the eye operations before applying the bandage. It is recognised as one of the best haemostatics in Ayurvedic literature.

पूर्यते शोणितेनाक्षिरवेधाक्षिसर्जना ।
तत्र स्त्रीस्तन्यं यद्व्याह्वयं लेके हितं वृत्तम् ।

"Where the eye gets flooded with blood due to cutting of a blood vessel a ghee prepared with breast milk and Yastimadhu is useful."

Case No. 1.

Male aged 54 - got acute glaucoma of the left eye. After putting him on the usual palliative line of treatment consisting of Eserine drops into the eye, fomentations, leeches to the temple, purgatives and rest for one week when the

congestion had almost disappeared an iridectomy was performed. Everything was alright when the bandage was applied after operation. The next day when the bandage was opened the dressing was found soaked in blood. The corneal section was gaping with a clot of blood, lifting the cornea off the section.

The eye was cleaned with saline and after dropping a few drops of adrenalin with cocaine, twice at an interval of 5 minutes, the anterior chamber was very gently irrigated and cleared of all the blood. For a time it looked as if bleeding had stopped. But after 3 hours it was seen that the dressings were stained with blood and the bleeding recurred. Breast milk—fresh and drawn into a sterilised test-tube was obtained and was instilled every 5 minutes for half an hour. Calcium lactate in breast milk was ordered by mouth. The bleeding stopped, and with the usual treatment the patient made an uneventful recovery and the little blood in the anterior chamber was absorbed in due course. The patient is having a vision of 6/30 even now.

Subsequently, I had occasions to use breast milk in many cases of bleeding conditions:

A case of haemoptysis:

A young man of 26 had an attack of what appeared like influenza a week earlier. Well built and no suspicious kind of family or previous history. He suddenly brought out more than a

pint of blood in a bout of coughing. He was put on absolute rest, physical and psychological. 1/4 gr. morphia hypodermically along with 10 c.c. calcium gluconate with 500 mgms of vitamin C was given intravenously. All food was withheld except ice and glucose water. After 3 hours he had another bout of bleeding and began to get nausea and vomiting. As a result of the loss of blood and shock the pulse became thready. I ordered plain breast milk in one ounce doses at frequent intervals and no other medicine was allowed for 3 days. The bleeding completely stopped. After 3 days, on X-Ray examination extensive infiltration of both the lungs was discovered. Ultimately the patient re-

covered with the usual treatment completely and an X-Ray after six months did not give evidence of any lesion.

I have used breast milk—pure and simple in repeated haemorrhages in typhoid fever and in epistaxis and in no case had I regretted the choice of the remedy.

Breast milk seems to contain prothrombin or some principle like adrenalin. It is simple, easily available in any village, has no side-effects or after-effects. Some fastidious patients do not tolerate it, if they are told that it is breast milk and even in such cases it can be administered from a labelled mixture bottle in the guise of some vitamin-containing emulsion.

B. C. G. Vaccine.

BACILLUS CALMETTE-GUERIN¹

The idea of attenuating tubercle bacilli deliberately by chemical means, tried by many investigators and found lacking in favourable results, has been revived by Calmette² and Guérin within the past fifteen years. They maintain that they had succeeded in controlling the virulence of tubercle bacilli, and that the attenuated organisms which they cultured are useful in conferring immunity against renewed exogenous infection with human tubercle bacilli when inoculated into human beings.

Calmette and Guérin have maintained a culture of bovine tubercle bacilli continuously since 1906 on a potato saturated with ox-bile and 5 per cent glycerin. The basic idea is that the fatty capsule which envelops the tubercle bacillus has been stated to consist of an alcohol which is not unlike cholesterol, and bile salts have been found capable of dissolving, or at least holding in colloidal suspension, lipoids of the type of cholesterol. Inasmuch as the difficulty encountered in attempts at destroying tubercle bacilli is due to their fatty capsules, bile is said to be capable of rendering this capsule vulnerable. On this principle Calmette believes he had attained attenuation of tubercle bacilli by cultivating them for many years, through hundreds of transfers on glycerolated potato treated with bile. After four years Calmette found that the culture had lost its virulence

for cattle and guinea-pigs, and after 230 transfers on the bile medium he found it completely avirulent for all domestic animals. He has maintained this strain since then on ordinary media with transfer to bile media after every 10 subcultures. What is most interesting in connection with human prophylaxis is the fact that he vaccinated numerous cattle which were maintained with controls and exposed to severe "natural" modes of infection, and the results showed that the vaccinated animals almost entirely escaped infection, while the unvaccinated cattle developed tuberculous disease. The lesions produced by these bacilli, when injected into mammals, are analogous to those observed after injections of dead bacilli, and reinoculation from lesions never produced active disease. Calmette found it impossible to restore virulence of the bacilli by animal passage. The effects on monkeys, chimpanzees and other animals were the same as those observed in cattle and guinea-pigs. In short, Calmette maintains that he succeeded in evolving a 'fixed, hereditarily attenuated' living bovine tubercle bacillus.

This method of protective inoculation was tried in 1921 on cattle. It was found in one establishment, in which most of the animals had been tuberculous, that 110 calves, inoculated with the culture and reinoculated annually for five years, remained healthy, though

[*It is not clear if the author eliminated tuberculous infection by the examination of sputum for Koch's bacillus. We hope that he does not suggest that the disappearance of the infiltration noted in the skiagram of the chest of the patient six months earlier, if tuberculous, is due to the administration of breast milk—Editor.]

¹ Extracted from "Pulmonary Tuberculosis," by Dr. Maurice Fishberg, M. D., Chief of the Tuberculosis Service, Montiflore Hospital and of its country Sanatorium for In-patient Tuberculosis, 4-Edition (1932) pp. 282-287.

many were fed on milk containing tubercle bacilli. Thirty of these animals were slaughtered and found free from tuberculous disease.

Technique of vaccination with B.C.G.

Human infants have been inoculated since 1921 in various countries with a view of inducing at least temporary immunity. The technique, as given by Calmette¹, is as follows:

Aiming at inducing an allergic reaction, which he considers as not absolutely necessary, though when achieved is considered an indication that the subject is immune, Calmette at first gave the B. C. G. vaccine subcutaneously, in one inoculation. He employed 1/40 milligram, depending on the age in subjects in whom the absence of the allergic reaction had been determined by the Von Pirquet, or some other tuberculin skin test. But later Calmette found that in the new-born the vaccine may be given orally with the same effect.

Calmette found that during the first ten days of life the infant's intestine is very permeable to the bacilli and for this reason advises that it should be carried out during that period. One hour before feeding, the infant is given by mouth in warm milk a dose of 1 centigramme of a fresh culture of B. C. G. which has been finely emulsified in a liquid which conserves the vitality of the bacilli. This dose is repeated twice within forty-eight hours, so that the total amount of vaccine given is 3 centigrams of bacilli. In as much as dead bacilli are ineffective, the bacterial emulsion employed as a vaccine should

be made from a young culture, one not older than twenty-five days.

It is best to vaccinate an infant immediately after birth, especially one of tuberculous parentage. At any rate, it should be done within ten days after birth. It should then be isolated from any source of tuberculous infection until an allergic reaction has been detected by one of the skin tests. This takes from five to six or seven weeks in most cases. After the allergic reaction has been found the infant may be allowed the usual freedom of contact with people.

Statistical Study of Results.

The B. C. G. vaccine has had a wide vogue in Europe. According to Calmette 336,000 children have been vaccinated in France up to May 1, 1931, and almost as many in the French colonial possessions. More than 1,000,000 children have thus far been vaccinated with B. C. G. throughout the world, and from statistics gathered by Calmette it appears that whenever the vaccine was properly prepared and administered, it proved harmless and no fatality had occurred in vaccinated infants. Moreover, he maintains that it has been effective in preventing the development of tuberculous disease even in infants derived from tuberculous stock. The statistical data published periodically by Calmette and his followers seem to indicate that tuberculosis in infancy and childhood may be controlled with his vaccine.

It must be mentioned here that these statistics have not been taken seriously by many authoritative writers. Major

Greenwood,¹ one the most competent to judge statistics, states that the data published by Calmette are gravely defective and that "no confidence can be placed either in his statistical inferences or in the reliability of the data which he has assembled." Wolf² in Germany and Rosenfeld³, in Austria have criticised Calmette's statistics along similar lines. It is thus clear that while a large number of infants have been vaccinated with B. C. G. reliable statistical evidence has not been supplied to judge the value of this prophylactic measure.

Dangers of active immunization.

From the data supplied by Calmette and many of his followers it appears that it is entirely innocuous; that of the hundreds of thousands of infants vaccinated with B. C. G. none had been harmed by the procedure. But ever since its introduction, many immunologists have warned that while B. C. G. strain may be avirulent for a long time there is a danger that under suitable condition it may become exalted. This has been the case with other pathogenic microorganisms, notably pneumococci, streptococci, the fowl-cholera bacillus, etc. In fact, Petroff⁴ and others found that the tubercle bacillus is not biologically stable but may mutate under favourable conditions. He demonstrated that this culture consists of two different types of colonies, one which he calls the rough type, "R," which is avirulent on subcutaneous injections into guinea-pigs, and a second, the smooth "S" type, which appears in a smaller number of colonies and which produces

generalized tuberculosis in guinea-pigs. Other investigators, Loewenstein, Watson, Gerlach, Malkani, Chiari, Hutyrá, Nobel and Sole, Dreyer and many others, have been able to increase the virulence of this culture by passage though several animals. In other words, it appears that under certain conditions it is not as innocuous as has been alleged. Malkani⁵ concluded that the organism in Calmette's vaccine shows virulence and has not acquired the attenuation claimed for it. It does not conform to the characteristics of a *virus fixe* in the sense of the Pastorian anthrax vaccines, because it may revert to its original virulent pathogenic state and because the incubation period is indefinite varying with the dosage and route of administration. Depending upon the amount of resistance met in the animal organism, it either disappears from the system, or leads to a process which, in some cases, terminates fatally.

The stability of the fixed type of tubercle bacillus on the whole has of late been questioned and some have demonstrated that it does not exist under all circumstances. Hence, it cannot be said with absolute assurance that the B. C. G. culture may not at any unexpected time manifest a change in its virulence while still in the culture, or after it had been administered to an infant. (*Italics ours*) As has been pointed out by Kirchner,⁶ most who have experimented with this vaccine found that animals vaccinated with B. C. G. acquire some resistance to renewed infection with the same virus. But what is mainly attained is a delay in the development of the disease; the patho-

¹ La vaccination preventive contre la tuberculose, Paris, 1927; P 230, with Harry Plotz, Am. Rev-Tuberc, 1929, 19, 567.

² British Med. Jour., 1931, i, 1071.

³ Ibid; 1928, i, 793

⁴ Ztschr. f. Tuberk., 1930, 57, 1; Deutsch. med., Wchnschr., 1930, 56, 1644; 57, 933.

⁵ Wien. Klin. Wchnschr., 1928, 41, 800

⁶ Am. Rev. Tuberc., 1929, 20, 275; Jour. Immunol., 1929, 16, 233; 1930, 19, 79; Beitr. Z. Klin. d. Tuberk. 1930, 74, 499.

⁷ Tubercle, 1930, 11, 433.

⁸ Klin. Wchnschr.; 1930, 9, 1289.

logical process is the same. Kirchner also shows that the oral administration of the vaccine to infants is not effective in all cases as is evidenced by the fact that tuberculin allergy manifests itself only in about 1 out of 3 infants vaccinated. Walgren¹ doubts whether much of the vaccine is absorbed when administered orally; Nobel² and his co-workers could not infect most of the experimental guinea-pigs by this route, and Selter³ has not found that the interstitial tract in infants is as permeable as Calmette claims to have found it. "Granting that there is sufficient absorption of B. C. G. through the intestinal tract of an infant," says Malkani, "as Calmette claims, and that it is possible to immunize in this manner without injuring the subject, the question of a subsequent immunization must naturally arise when what is absorbed by the intestinal tract gets eliminated from the system in course of time. It is just here, if not earlier, that the question of virulence of B. C. G. arises. The oral method or immunization at this stage being of no avail, recourse is necessarily to be had to the subcutaneous method and once this parenteral method of immunization is adopted one does not, in the light of experimental data, know the fate that may overtake this bacillus."

Indeed, very careful investigations on animals by A. Stanley Griffith⁴ for the British Medical Research Council, failed to confirm Calmette's findings to the effect that monkeys are protected against subsequent virulent tuberculous infection after inoculation with B. C. G.

Hence, the Research Council has taken the stand that the administration of B. C. G. to children is unjustifiable until indisputable confirmation of Calmette's work has been obtained. Likewise, Watson,⁵ investigating the problem for the Dominion Department of Agriculture of Canada, extending from 1925 to 1930 showed that the vaccine is not devoid of danger to animals. Laboratory necropsies on 72 cattle inoculated with B. C. G. revealed evidence of tuberculous lesions in 78.4 per cent. Animals vaccinated with virulent bovine tubercle bacilli showed 90 per cent of infections. In unvaccinated animals the proportion infected was found to be 75 per cent. It is Watson's opinion that B. C. G. possesses a latent virulence for guinea-pigs. He concludes that a comparative study over a period of five to six years does not substantiate the claims made for B. C. G. vaccination against bovine tuberculosis, and the control of bovine tuberculosis in Canada by this means is not recommended.

Is it Desirable to Immunize Indiscriminately against Tuberculous Infection?

Throughout this book the differentiation between infection and disease has been emphasized. It has been made clear that not all, indeed, only a very small minority of those who have been infected with tubercle bacilli, suffer from some form of the disease; a lesser proportion succumb to it, while about 90 per cent of those who had been infected pass through life without any notable detrimental effects on their health and

well-being. Under the circumstances, before embarking on an extensive campaign of immunization by the method of Calmette, the following considerations seem to merit serious considerations:

1. The B. C. G. vaccine applied to all new-born would have to be proved to have an efficiency of over 80 per cent in preventing actual tuberculous disease before it could be accepted as a desirable substitute for the natural process of immunization.

2. The method of artificial immunization must also meet a second objection. It is known that primitive races, who have been exposed to primary infection in adult life, often develop acute and rapidly fatal tuberculous disease. The possibility must be borne in mind that if the immunity conferred by the B. C. G. vaccine in infancy lasts only a short time, as Calmette has himself found to be the case, and if the immunization is not repeated every few years, the individual may be in the same defenseless condition against renewed tuberculous infection after exposure as the

primitive man in Central Africa, or even as the guinea-pig.

3. The just-mentioned point can only be tested out by observations over a long period of time, not less than fifty years. It would be necessary to vaccinate one-half the population of a country, or at least of a large city, while the other half is left to natural immunization as controls. During the period of fifty years it would be necessary to keep careful records of the morbidity and mortality rates in both groups.

4. We have seen in Chapters IV and V. Vol. I, that tuberculous infection, with but very few exceptions, is not the sole, nor even the most important, factor in the evolution of tuberculous disease. If infection alone were responsible for the hazard of tuberculous morbidity and mortality 95 per cent of humanity would be sick with the disease and the majority of these would succumb to it. *Available evidence in our study of phthisiogenesis shows clearly that the constitutional factors is more important in the development of tuberculous disease, and the artificial immunization with B. C. G. is not known to influence this factor.*

¹. Quoted from Malkani.

². Wien. Klin. Wochenschr., 1928, 41, 798.

³. Deutsch. med. Wochenschr., 1928, 54, 1803.

⁴. Studies of Protection Against Tuberculosis: Results with B. C. G. in Monkeys, London, 1931.

⁵. A Comparative Study of Vaccination with Living Tubercle Bacilli and with Special Reference to B. C. G., London, 1930.

“Streptomycin.” •

POTENTIAL DANGER IN USE OF DRUG—BRITISH MINISTRY'S WARNING.

By
RITCHIE CALDER.

The upturned earth has a pungent odour. It is the fertile breath of the kitchen garden. It is the scent of the sexton's sod in the graveyard. That life-and-death smell is streptomycin. Or, at least, it is the scent distilled in the soil by rayfungus, *streptomyces griseus*, from which streptomycin, the “head-line” drug, is obtained.

Streptomycin was first isolated by Dr. S. A. Waksman of Rutgers University, U. S. A., and his collaborators, in 1944. It was immediately recognised as a discovery of major importance because it appeared, from laboratory tests, to destroy germs which had proved intracable to penicillin. Conspicuously, it destroyed—in test-tubes—the tubercle bacillus. Newspapers, magazines and “Digests” spread the sensational tidings; tuberculosis was mastered at last; Scientists and Doctors, including Waksman and his medical associates, vainly appealed for caution. It was true that streptomycin literally “liquidated” the tubercle bacillus in test-tubes, and checked active tuberculosis in mice, but that was vastly different from saying that it could be equally effective in curing human victims.

The germ of tuberculosis is a treacherous beast. It had successfully resisted the sulpha drugs, and penicillin

because of its peculiar characteristics. It is encased in a fatty, or lipoid, armour-plating—a kind of microscopic tortoise-shell—which protects it from ordinary germ-killers. It protects it from ordinary germ-killers. It is also believed by many authorities that, even when the germ itself is killed, the fatty—casing itself is poisonous and sets up tubercular lesions; so that even in death it is deadly. To be effective, therefore, any drug might have not only to kill the germ but neutralise its poisons. Again, the behaviour, and cycle, of the disease are quite different in mice from what they are in humans. Moreover, streptomycin proved extremely difficult to produce in substantial quantities and, like penicillin, required laborious laboratory and pilot-plant stages.

All these considerations were completely ignored by the sensationalists. So, too, were the first warning reports from the Mayo Clinic, where careful clinical tests showed that streptomycin, wrongly handled or wantonly used, was a drug as dangerous as it was potentially beneficial in a limited range of tuberculous conditions. While responsible Clinical Trials Committees were set up in America, in Britain and in France, the irresponsible Press “rooted” for the new drug and clamoured for its general use. They raised the hopes of millions

of T. B. sufferers all over the world and made them feel that they only had to go round to the nearest drug-store or chemist shop and they would be cured. Parents were told that at last there was a complete cure for tuberculous meningitis. In this country, with uncanny consistency, 1,800 patients a year die of tuberculous meningitis. The bacillus attacks the brain, mainly in young children, and in the past, every victim would be dead within a month. The diagnosis was a death-sentence. Now there was a reprieve. Desperate parents clamoured for the drug.

The B. B. C., with no more responsibility than the irresponsible newspapers, began to broadcast appeals for supplies of the drug to be rushed to such-and-such a hospital. Remonstrances from the Ministry of Health, from the Medical Research Council and from the B.M.A. were ignored. The B.B.C. took its stand on its right to accept the opinion of, and to assist, the individual doctor. *The fact that the doctor, while humanely anxious to do something for a dying child, probably knew no more about the drug than he had read in the headlines was not considered relevant. He was a “qualified practitioner.” (Italics ours)*

Decent instincts were moved by these appeals, and we had the newspaper and broadcast accounts of supplies being flown across the Atlantic or rushed by fast car through the darkness of the night. What we were not told was that such appeals would yield at the best perhaps ten grammes of this scarce drug—enough perhaps for five days, when effective treatment would involve six months or more. So the patient died anyway.

Inadequate Knowledge of Drug

Then the Ministry of Health issued a stern warning about the inadequate

knowledge of the drug and its potential dangers. The Medical Research Councils took charge of the bulk supplies which still had to be obtained from America while the British drug firms (with regrettable slowness) were getting into production. It meant dollars but that was not the limiting factor (the Government spent over 750,000 dollars in obtaining U.S. supplies). What was needed was a careful study of how the drug could, and should be used; and for that purpose, centres for the treatment of children: with tuberculous meningitis were established throughout the country. At these hospitals the treatment was carried out under stringent medical and scientific supervision. It meant hour by-hour examinations by the doctors and pathologists, and 24-hour-a-day nursing by specially trained nurses. The experts were sent to America and to the Continent to compare notes.

Even the results could be heartbreaking. The son of a friend of mine came home one afternoon from his walks. He was tired and unusually sleepy. He slept, but woke up drowsy, listless and refusing food. Within a few days the doctor delivered the ominous verdict—tuberculous meningitis. This doctor did the right thing: he got in touch with the proper centre and had the child admitted. Then began the dreadful vigil for the parents. Day by day, night by night, they waited and watched. Now the child was improving; now he had lapsed. Now his eyes were wobbling—a sinister warning that the disease might be affecting the brain; now they were bright and the boy was alert. Now the germ-count from the spinal fluid was down; now it was up. At the end of four months, I was allowed to see him—a curly-headed youngster of three. He was hopping about in his cot; he was reciting nursery

• By Courtesy of the “Hindu”.

rhymes and identifying pictures and talking about playmates he had not seen for months. These were all healthy signs of an intact brain and a good recovery. A few weeks later he was dead.

At that time I went to France, visited the clinics and talked to the doctors and scientists who were carrying out similar, carefully controlled tests. In the majority of cases, the story was the same—desperation, hope and, then, heartbreak. *Streptomycin was treacherous and deceitful. If given in too big doses it would produce poisonous symptoms and the patient could not tolerate it. Or, given in small doses, it would breed resistant germs—the “survival of the fittest”.* (Italics ours) So the life-saving dose was a precarious balance between all those factors and depending upon reactions in each individual case. This meant the closest co-operation of tuberculosis and other specialists, and specially trained nurses, treating every case as a delicate experiment.

Tests in Chosen Hospitals.

As a result of the elaborately controlled tests in the six chosen hospitals in this country, the Medical Research Council was able to report that about one-third of the tuberculous meningitis cases treated had survived and had a reasonable chance of recovery. No one would be foolhardy enough to say they were “cured”. *In T. B. it takes at least five years confirm a cure.* (Italics ours) Simultaneously, clinical trials were undertaken — again under the aegis of the M.R.C.—of streptomycin in cases of lung tuberculosis. The cases were chosen as having a particular and similar condition. Fifty-five were treated with streptomycin plus normal treatment, and a “control” group of fifty-two were treated in the ordinary way. The streptomycin cases received

two grammes of the drug a day for a minimum of four months—at least 240 grammes per case. At the end of six months, four of the streptomycin cases and fourteen of the “controls” had died, but 28 of the streptomycin cases and only four of the “controls” had shown “considerable improvement”. This is decidedly encouraging. At least, the drug can assist the conventional treatment in certain forms of consumption.

But again the risks were underlined. Although the treatment in no case had to be abandoned because of toxic effects, in some damage was done to the sense of balance, enough to prevent car-driving or steady walking; and the streptomycin-resistant germs were in evidence to qualify any suggestion of “complete cure.”

When the National Health Service started and the hospitals came under Ministry of Health control, Mr. Aneurin Bevan called upon regional authorities to provide hospital accommodation and adequately trained and expert staffs for streptomycin treatment for those types of T.B. for which it was already proven. Twenty-six centres were immediately established and others are being set up. Furthermore a Government Centre (Kensington 3471) in London makes available, to any doctor at any hospital, supplies of the drug for treatment of cases of these types, if the nature of the case justifies it, and if beds are not available in an established centre. British drug-companies are now beginning to produce the drug in increasing quantities.

A week after the National Health Service started, one newspaper carried headlines about children being doomed to die because of official obstruction. This was followed up by a sensational account of supplies being given by a big-hearted American and flown in an

(Continued on Page 19)

APHORISMS OF AYURVEDA

By

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Structure of the Body.

Ashtanga Hridayam II. iii. 8.

भूतमयो देहः.....

Body is made up of bhutas (that are 5 in number).

तत्र आत् खानि देहेऽस्मिन् श्रोत्रं शब्दो

चिचित्कता

वातात्स्पर्शत्वगुच्छासा वह्नृद्वृषपत्कयः ॥

आप्या जिह्वारसक्लेवा घ्राणगन्धास्थि पार्थिवम् ।

(Ibid. 3—4)

Out of these (panchabutas) this body (derives) from akasa—all the openings (kani), ear, hearing, and empty spaces; from vayu—touch, skin, and expiration (as well as inspiration); from agni—eyes, form, and digestion; from appu—tongue, taste and liquid elements (as sweat urine, etc.); from prithvi—nose, smell and bones.

दोषधातुमला मूलं सदा देहस्य.....

(Ibid. I. xi. 1.)

Doshas dhatus and malas are always the root (basic support.) of the body.

(Continued from Page 18)

America! “flying car” to the hospital, where the journalist arrived clutching the life-saving drug. The same newspaper had previously printed accounts of the painstaking trials, and the risks, they were designed to remove, as well as the extreme difficulties of treatment even in expert hands. This and other stories aroused false hopes in hundreds of thousands of sufferers, only a tiny fraction of whom can be helped by

streptomycin, in the present state of our knowledge of it.

The story of streptomycin, with all its potential benefits, is an object lesson to everyone of the case with which any claims of cures should be approached. It is also a commentary on journalistic morality in rousing false or premature hopes.

(Copy to The Hindu and New Statesman)

Just as this extract is seen through the Press the following Press Communiqué issued by the Government of Central Provinces and Berar appeared in Hindu dated 18th which is Commended to the profession.

“Streptomycin drug is still of questionable value in the case of typhoid fever, says a Press Note issued by the C. P. and Berar Government, explaining the reasons why Government have imposed certain controls over the drug. “To safeguard the public against danger to life and health due to the misadministering or misuse of streptomycin, it is necessary that the drug should remain under control till definite findings have been established in regard to its use”, the Press Note adds. The drug is still in its trial stage and patients treated with it are required to be watched carefully for various reactions.”

Doshas.

वायुः पित्तं कफश्चेति त्रयो दोषाः समासतः ॥
(Ibid. i. 6.)

Vayu Pitta and Kapha are briefly called three doshas.

विकृताविकृता देहं ग्रन्थि ते चतैर्यन्ति च ।
(Ibid. 6½)

When vitiated, they (doshas) will destroy the body and when not vitiated will build up (maintain the health of) the body.

Sites of doshas.

ते व्यापिनोऽपि हृन्नाभ्योरधोमध्योर्ध्वं संश्रयाः ॥
(Ibid. 7.)

Though they have a tendency to spread (all over the body) (vata) has its site (of election), below umbilicus, (Pitta), between heart and umbilicus and (Kapha), above heart.

पकाशयकटी सकृत्तश्चोत्रास्थिस्पर्शनेन्द्रियम् ।
स्थानं वातस्य, तत्रापि पकाधानं विशेषतः ॥
(Ibid. xii. 1.)

The sites of Vata are pakvasayam, loin, thigh, ear, bones, and sense organ of touch (skin). Of these pakvasayam is its most important site.

नाभिरामाशयः स्वेदो लसीका रुधिरं रसः ।
दृक् स्पर्शनं च पित्तस्य नाभिरत्र विशेषतः ॥
(Ibid. 2.)

(Sites of) Pitta are umbilicus, amasayam, sweat, lasika (tissue fluid of the

skin), raktam, rasam, eye, and skin (organ of touch): Of these, umbilicus is its most important (site).

उरः कण्ठशिरःकोमपर्वण्यमाशयो रसः ।
मेदो घ्राणं च जिह्वा च कफस्य सुतरामुगः ॥
(Ibid. 3)

(Sites of) Kapha are chest, throat, head, kloma (Trachea-Oesophagus Pancreas?) joints, amasaya, rasam, nose, and tongue. (Of these) chest is its most important site.

तत्र रुक्षो लघुः शीतः खरः सूक्ष्मश्चलोऽनिलः ।
(Ibid. i. 11.)

Properties of doshas.

Of these (three doshas) Vata has the following properties (viz.), dryness, lightness, coolness, roughness, subtlety and motility.

पित्तं सखेहतीक्ष्णोष्णं लघु विस्त्र सरं द्रवम् ॥
(Ibid. 1.)

Pitta has the following properties (viz.)—Snigdam (unctuous character), Tikshnam (active nature), tendency to be hot, light, odorous, mobile and fluid.

स्निग्धः शीतो गुरुर्मन्दः शृङ्खणो मृत्स्नः स्थिरः
कफः । (Ibid. 12.)

Kapha has the following properties—Snigdam, coolness, heaviness, dullness, smoothness, softness and immobility.

ते चलः उत्साहोच्छ्वासनिश्वासचेष्टावेग प्रवर्तनैः ॥
सम्यग्गत्या च धातूनामक्षाणां पाटनेन च ।
अनुगृह्णाथविकृतः.....(Ibid. xi. 1—2.)

That normal (avikrita) Vata helps the body by (giving rise to) enthusiasm, (carrying out) expiration and inspiration, (doing all the) activities (of thought word and deed), performing the (various) reflexes (vegas), making the dhatus do their natural functions and causing the sense organs to properly receive impressions (from the objects).

....पित्तं पक्तयूष्मदर्शनै ।
क्षुत्तृङ्खलचिप्रभावेधा धीशौर्यतनुमार्दवैः ॥
(Ibid. 2—3.)

(Normal) Pitta (helps the body by aiding) digestion, (producing bodily) heat, (enabling proper) vision, (creating) hunger, thirst, and taste, (giving a good) complexion (to the body), (being responsible for) memory, intelligence, valour and a suppleness of the body.

श्लेष्मा स्थिरत्वस्निग्धत्वसन्धिबन्धक्षमादिभिः ।
(Ibid. 3.)

(Normal) Kapha (helps the system by promoting) bodily strength, (giving rise to) the condition of snigdam, (enabling the) joints to be well-formed, and (maintaining qualities as) patience etc.

Varieties of Doshus

प्राणादिमेदात्पञ्चात्मा वायुः.....।
.....प्राणोऽत्र मूर्धगः ।
उरः कण्ठचरो बुद्धि हृदयेन्द्रिय चित्तधृक् ।
धीवनक्षत्रधृद्धार निःश्वासप्रवेशकृत् ।
(Ibid. 4—5)

Vayu is of five kinds according to the different (Varieties) as Prana etc.

Of these (five), Prana is situated in the head. It courses in the chest and throat and controls intelligence, heart, sense-organs and mind. It carries out the following functions viz. spitting and expectoration, sneezing, eructation, inspiration (and expiration) and swallowing of food.

उरःस्थानमुदानस्य नासानाभि गलांश्चरेत् ।
वाक्प्रवृत्ति प्रयत्नोर्जावलवर्णस्मृतिः क्रियः ॥
(Ibid. 5—6.)

Site of Udhana is the chest. It courses in the nasal passages, umbilical region and throat, and has the following functions viz. power of speech, intention to do a work (prayatnam), enthusiasm, bodily strength, colour, and memory.

व्यानोहृदि स्थितः कृत्स्नदेहवारी महाजवः ।
गत्यपक्षे पणोत्क्षेपनिमेषोन्मेषणादिकाः ।
प्रायः सर्वा क्रियास्तस्मिन् प्रतिबद्धाः शरीरिणाम् ॥
(Ibid. 6—7.)

Vyana is situated in the heart and courses throughout the system with great force. (Its functions are as follows viz.) (management of) all activities, (enabling the) downward and upward movements of the body, and closing and opening of the eyelids. In general (it may be said that) the motor functions of the body are under its control.

समानोऽग्नि समीपस्थः कोष्ठे चरति सर्वतः ।
अन्नं गृह्णात पचति विवेचयति मुञ्चति ॥
(Ibid. 8.)

Samana is situated near the jataragni (digestive juices) and courses throughout the alimentary tract. It receives, digests, separates the food (into essential-saram-and non-essential—Kittam—

portions as urine and faeces), and excretes (those portions that have to be got rid of).

आमाशयाश्रयं पित्तं रज्जकं रसरज्जनात् ।

(Ibid. 13.)

अपानोऽपानगः श्रोणिवस्तिमेढोरुगोचरः ।

शुक्रार्तवशक्नुमूत्रगर्भनिष्क्रमणक्रिया ॥

(Ibid. 9.)

Apana is located in the (distal parts of colon) Gudam and courses in the (hip) sroni, bladder, external Genitals (medram), and thighs. It has the function of discharging the semen, menstrual fluid, feces, and urine and of delivering the child (from the uterus).

पित्तं पञ्चात्मकम्.....

(Ibid. 10.)

Pittam is of five kinds.

.....तत्र पक्वामाशयमध्यगम् ।
पञ्चभूतात्मकत्वेऽपि यत्तैजसगुणोदयात् ॥
स्यक्द्रवत्वं पाकादिकर्मणाऽनलशब्दितम् ।
पचत्यन्नं विभजते सारिकट्टौ पृथक् तथा ।
तत्रस्थमेव पित्तानां शेषाणामप्यनुग्रहम् ।
करोति बलदानेन पासकं नाम तन्स्मृतम् ॥

(Ibid. 10—12.)

Of these, that which is situated between amasayam and pakvasayam, that which, though composed of panchabhutas, since the tejobhuta is predominant gives up its aspect of fluidity and carries out the function of digestion and thus come to be known as anala (fire), that which digests the food and divides the essential and non-essential (saram and kittam) portions into separate entities; that though situated there alone, is able to help the other varieties of pitta by giving them (enough) strength; is known by the name of *Pachakam*.

Pittam which is situated in the amasayam is called ranjakam as it gives a colour to the *rasa*.

बुद्धिमेधाभिमानाद्यैरभि प्रेतार्थसाधानात् ।

साधकं हृद्रते पित्तं.....(Ibid. 13—14.)

Pittam situated in the heart is (known as) *alochakam* as it is able to achieve the desired objects by means of intelligence, memory and self-confidence (*abhi-manam*).

.....रूपालोचनतः स्मृतम् ।

हृदयमालोचनं.....॥ (Ibid. 14)

(Ibid. 14.)

Pittam situated in the eyes (retina) is known as *sadakam* as it visualises forms (of objects).

.....त्वक्करं भ्राजकं भ्राजनास्वचः ।

Pittam situated in the skin is known as *brajakam*, since it gives a lustre (to it).

श्लेष्मा तु पञ्चधा.....।

.....उरस्थः स त्रिकल्प स्ववीर्यतः ।

हृदयस्यान्नवीर्याच्च तन्स्थ एवाम्बुर्कर्मणा ॥

कफघासां च शेषाणां यत्करोत्यवलम्बनम् ।

अतोऽवलम्बकः श्लेष्मा.....(Ibid. 16—61)

Kapha (Sleshma) too is of five kinds.

As the (Kapha) which is situated in the chest, gives support—to the sacrum by its specific property; to the heart (by its specific property) and by the essential aspect of the food materials

(*rasam*—in which it is predominant); remaining in its own place, to the other sites of kapha by its function of supplying the fluid elements; it is known as *Avalambaka sleshma*.

.....यस्त्वामाशयसंस्थितः ॥

क्लेदकः सोऽन्नसङ्गतक्लेदनात्. (Ibid. 16, 17.)

That which is situated in the amasayam, is known as *Kledaka* as it disintegrates the accumulated food materials.

.....रसबोधनात् ।

बोधको रसना-स्थायी...॥ (Ibid. 17.)

That which is situated in the tongue is known as *bodhakam* as it recognises the (various) tastes.

.....शिरः संस्थोऽक्षतर्पणात् ॥

तर्पकः.....(Ibid. 17—18)

That which is situated in the head, is known as *tarpaka*, as it gives nutrition to the various sense-organs.

.....सन्धिसंश्लेषाच्छ्लेष्कः सन्धिषु स्थितः ।

(Ibid. 18.)

That which is situated in the joints is known as *Sleshmak*, as it enables the proper position and the free movements of the joints.

इति प्रायेण दोषाणां स्थानान्यविकृतात्मनाम् ।

व्यापिनामपि जानीयात्कर्माणि च पृथक्पृथक् ॥

(Ibid. 28—29.)

In this way (a physician) should know that, though the doshas-in-equilibrium, are distributed all over the body, they also exist in the various sites mentioned above with separate properties.

Dominance of the doshas.

वयोद्वेगाग्निभुक्तानां तेऽन्तमध्यादिगाः क्रमात् ।
(Ibid. i. 8.)

(Vata, Pitta, and Kapha) respectively (predominates) in the early, middle and later parts of one's life-time, day-time, night, and the process of digestion (of food).

Dhatus and Malas.

रसास्त्रुक्तां स मेदोस्थिमज्जा शुक्राणि घातवः ।
सप्त द्रव्याः.....॥ (Ibid. 13.)

Rasam (food-essence), raktam (part of blood), mamsam (some of the soft parts), fat (medhas), bone (asthi), bone marrow (majja) and sukram (secretion of gonads) are called seven dhatus. These are also named dushyas.

.....मला मूत्रशक्नुस्वेदादयोऽपि च ॥

(Ibid. 13.)

Malas as urine, faeces, sweat, etc., are also called dushyas.

कफः पित्तं मला खेषु प्रस्वेदो नखरोम च ॥

जेदोऽक्षित्वग्निशामोजो घातूनां क्रमशो मलाः ।
(Ibid. II. iii. 63—64)

Kapha (mucous and serous) exudations, bile, excretions in the various orifices (as ear, nose etc.), sweat, nails and hair, the unctuous elements in the eyes, skin and faeces, and ojas are respectively the malas of the seven dhatus (mentioned above).

प्रीणनं जीवनं लेपः स्नेहो धारणं पूरणं ।

गर्भोत्पादश्च घातूनां श्रेष्ठं कर्म क्रमात्स्मृतम् ॥

(Ibid. I xi. 4.)

(Supplying) nutrition, (maintaining) life, giving a smooth contour to the body (lepanam-smearing), furnishing sneham to the tissues, supporting the form of the body, filling up (the cavities of the bones) and impregnation are respectively considered as the main activities of the dhatus.

अवग्रहः पुरीषस्य, मूत्रस्य क्लेदवाहनम् ।
स्वेदस्य क्लेदविधृतिः॥.....(Ibid. 5.)

(The main function,) of faeces is to keep up the firmness of the body, of urine is to form a vehicle for the fluid excretions, and of sweat is to be the basis for (such) fluid excretions (that nourishes the hair and gives sneham to the skin).

ओजस्तु तेजो घातनां शक्रान्तानां परं स्मृतम् ।
हृदयस्थमपि व्यापि देहस्थितिं निबन्धनम् ॥
स्निग्धं सोमात्मकं शुद्धमीषलोहितपीतकम् ।
यन्नाशे नियतं नाशो यस्मिंस्तिष्ठति तिष्ठति ॥
निष्पद्यन्ते यतो भावा विविधा देहसंश्रयाः ॥
(Ibid. 37—39.)

Ojas is considered as the main quintessence of all the dhatus ending with sukram. Though is situated in the heart, it courses throughout the system and is the causal factor for the existence of the body. It is snigdham, of cooling nature, pure and slightly reddish yellow (in colour). When it is destroyed, body also gets affected and when it is healthy, body also is in a state of health. All activities pertaining to the body depend upon it.

Relation between doshas and dhatus.

त्रास्थतनि स्थितो वायुः, पित्तं तु स्वेदरत्नयोः ।
श्लेष्मा शेषेषु, तेनैवामाश्रयाश्रयिणां मिथः ॥
(Ibid. 26.)

Of these (three doshas) Vayu is situated in the bone, Pittam in raktam and sweat, and sleshma in the remaining dhatus. Thus these (doshas and dhatus) are depending on one another, as the container and contents.

The three gunas.

सात्त्विकं शौचमास्तिक्यं शुक्लधर्मरुचिर्मति ।
राजसं बहुभाषित्वं मानकृद्भ्रमत्सरम् ॥
तामसं भयमज्ञानं निद्राऽलस्यं त्रिपादिता ।
(Ibid. II. iii. 7—8.)

Purity (of thought, word and deed), faith in God (asthikyam), desire to follow the right conduct (sukla dharma ruchi), and wisdom (are the properties of) *satvika guna*. Excessive talking, pride, anger, vanity, and jealousy (are the properties of) *rajasa guna*. Fear, ignorance, sleep, laziness, and sorrow are the properties of *tamasa guna*.

Treatment of Ama Jwara.

लङ्घनं स्वेदनं कालौ यवाग्वस्तिर्त्तक्रो रसः ॥
मलानां पाचनानि स्युर्यथावस्थ क्रमेण वा ।
(Ibid. IV. i. ३. 21½.)

Langanam, Swedanam, time, (liquid diet as) yavagu, etc., (and drugs with) bitter taste, digest (counteract) the malas (as amadosha). (These have to be employed either) in the order stated or according to the stage (of the disease).

Indication for Langanam.

आमाशयस्थो हृत्वाऽग्निं सामो मार्गान् पिधाय
तत् ।
विधधाति ज्वरं दोषस्तस्मात्कुर्वीत लङ्घनम् ॥
(Ibid. 1.)

As jwaram is caused when the doshas (that have spread) into the amasaya,

mixing with amam (therein), destroys the agni and obstructs the passages (of circulation and excretion), langanam has to be employed.

Time and object of Langanam.

प्राग्गेषु ज्वारादौ वा, बलं यत्नेन पालयन् ।
बलाधिष्ठानमारोग्यं यदर्थोऽयं क्रियाक्रमः ॥
(Ibid.)

(Langanam has to be done) either in the premonitory stage of the jwara or at its outset. (At the same time) the strength (of the patient) should be kept up, since health depends on the strength and the aim of the treatment is the maintenance of health.

Results of Langanam.

लङ्घनैः क्षपिते दोषे दीप्तेऽग्नौ लाघवे सति ।
स्वास्थ्यं क्षुब्धं रुचिः पित्तिकर्षलमोजश्च जायते ॥
(Ibid.)

When the dosha is subdued by langana (methods), Agni is stimulated (and this makes the body) light. (The following effects are then) produced (viz.). Health, hunger, thirst, taste, digestion, strength and ojas.

दोषेण भस्मनेवाग्नौ लङ्घेऽन्नं न पिपच्यते ।
तस्मादादापचनान्ज्वरितानुपवासयेत् ॥
(Ibid. 10.)

Just as fire covered by ashes cannot cook food so also jataragni (covered by doshas cannot digest food). Hence patients with jwara should be made to fast until the (sama) dosha gets digested.

Use of hot water.

तृष्णाग्न्याल्पमुष्णान्मु पिबेद्वातकफज्वरे ।
तत्कर्कं विलयं नीत्वा तृष्णामाशु विवर्तयेत् ॥
(Ibid. 11.)

(Patients with) Vata Kapha (suffering from thirst, should take hot water in small quantities. This immediately relieves thirst by putting down Kapha.

उदीर्य चाग्निं स्रोतांसि मृदूकृत्य विशोधयेत् ।
लीनपित्तानिलस्वेदशकृन्मूत्रानुलोमनम् ॥
(Ibid. 12.)

It stimulates the agni, makes the srotas (vessels and ducts) supple (dilated), clears them (of any obstruction), and also causes Pitta, Vayu, sweat, faeces and urine that have become stagnated, to move freely.

निद्राजाड्यारुचिहरं प्राणानामवलम्बनम् ।
विपरीतमतः शीतं दोषसङ्घातवर्द्धनम् ॥
(Ibid. 13.)

It removes (excess) sleep, lethargy, and distaste, and supports the prana (life-energy). (Drinking) cold water (at this stage) causes the opposite effects, and provokes the dosha groups.

Contra-indications for hot water.

उष्णमेवं गुणत्वेऽपि युज्यान्नैकान् पित्तले ।
उद्रिक्तपित्ते द्रव्यदाहमोहातिसारिणि ॥
विषमद्योत्थिते ग्रीष्मे क्षतक्षीणेऽवपित्तिनि ॥
(Ibid. 14—15.)

Though hot water possesses all these properties it should not be used in purely pitta, disorders, in aggravated (conditions of) pitta, (while there is) burning sensation (in the eyes, etc.), when a feeling of heat is felt (all over the body), during unconscious states (moham), diarrhoeas in disorders caused by poisons and alcohol, during summer (grishma ritu) season, in urakshatham, kshayam and raktapittam.

The First All-India National Medical Conference

New Delhi - 23rd and 24th October, 1948.

The 1st All-India National Medical Conference which took place at New Delhi on the 23rd and 24th of October, 1948 marks yet another advance made in the direction of developing Indian Medicine on progressive lines—now on an All-India basis. Dr. Y. Suryanarayana Rao, L.I.M. of Bezwada was the 1st President elected to preside over its General sessions while Dr. C. Dwarakanath presided over the Scientific sessions. Sir Shankarlal, a leading business magnate of Delhi was the Chairman of the Reception Committee and Sri Lala Deshabandu Gupta, member of the Constituent Assembly inaugurated the sessions.

It will be remembered that the need for an All-India Federation of the Practitioners of Indian Medicine who have qualified from State managed or aided Institutions of Indian Medicine and their Associations in the different Provinces, States, and Unions in the Dominion who represent 'the ideal of the evolution of integration and synthesis of the Indian and Western Systems of Medicine into one system', was felt as long ago as 1946 by the L.I.M. Association; and this Association took the first step to give a concrete shape to the idea in its annual conference which took place at Mangalore three years ago. It will also be remembered that the Association of the Graduates of the Mysore Ayurvedic and Unani College were entrusted with the task of giving a practical shape to the idea. In the meanwhile, Dr. Badrasain and his colleagues of the Hardwar Ayurvedic

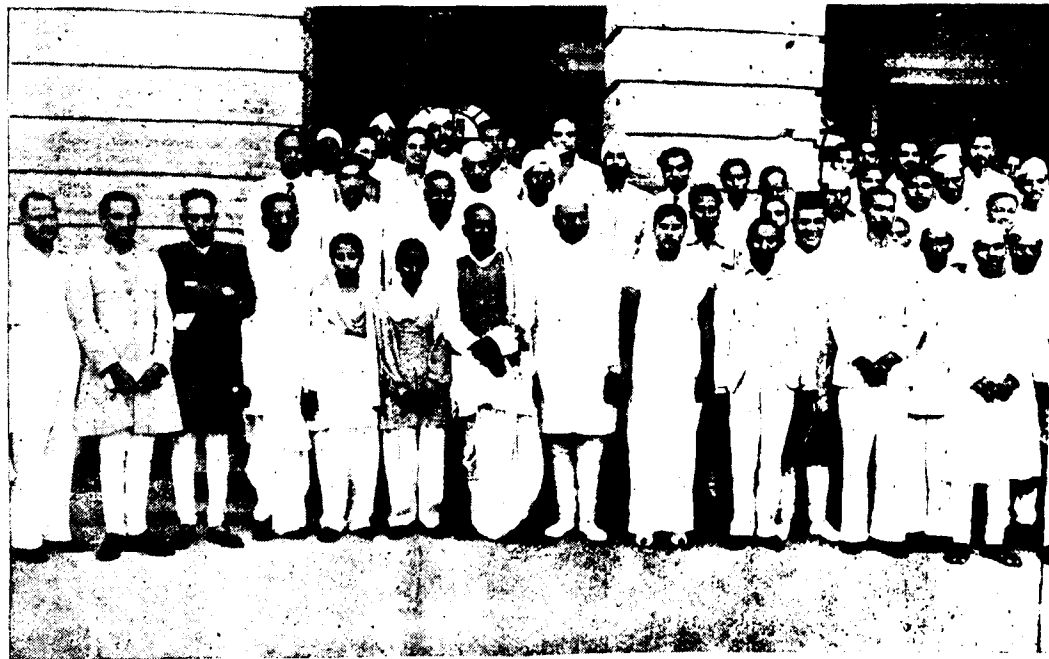
College were moving in the same direction and formed the National Medical Graduates' Association of India with almost similar objects. As a result of discussion that took place between Dr. Badrasain and his Colleagues on one hand and the L.I.M. and Mysore Ayurvedic and Unani College Graduates' Association on the other, the decision to start the National Medical Association of India was arrived at and for this purpose, the 1st All-India National Medical Conference was convened at New Delhi.

The Conference which was convened at a short notice, was well attended and fully representative of delegates from different Provinces and States.

Sir Shankarlal welcoming the delegates said, "Our country is now free, that is politically. We are all naturally vitally concerned with the medical relief problems of our country. As you know medical relief to the masses is at present very inadequate. Were it not for Indian Medicine, over 90% of the population would go without any medical help. Modern Medicine which was introduced into India about 150 years ago has not been able to meet the needs of the people. The Bhoré Committee has recommended far-reaching schemes which aim at providing an efficiently trained doctor for every 5,00 of the population. This, of course, will mean the expenditure of colossal sums of money running to hundreds of crores of rupees, both recurring and non-recurring and about 35 to 40 years to achieve



Sir Shankarlal inaugurating the National Medical Conference of India.



Deligates of the National Medical Conference of India.



Deligates to the Scientific sessions of the All India National Medical Conference of India.

the objects recommended by that Committee. In the present state of the finances of the country, one is led to wonder if at least in a hundred years it will be possible to provide a basic doctor after the Bhore Committee's conception for every 5000 of the population. Are we then to leave the masses to take care of themselves? Of course no civilized government can afford to do so. In the conditions of India, it is unthinkable that the consideration of medical relief problems could be postponed for any length of time. The health of the nation should naturally get top priority, the more so in view of the severe economic distress, scarcity of food, malnutrition, etc. There are also other factors besides, which I need not detail. To my mind there is perhaps only one way of solving the difficulty, and that by making use of the agency of Indian Medicine which is already in the field, serving the people in an unostentatious manner. It is true, that for want of favourable conditions for its orderly growth, it has become stagnant and unprogressive. For the same reason, its practitioners are for the most part ill-equipped and not equal to all exigencies. But it is also true, as stated already, that but for them, by whatever name we may choose to call them,—quacks, charlatans, or any other—even the little help that the poor villager gets will not be there.

"I have often heard the cry—as you have no doubt also heard—coming from certain quarters to get rid of Village Vaidyas and physicians, totally to extirpate Vaidyas and Hakims, no matter whether the Government can replace them with properly trained medical personnel or not. There is an old adage, which says that, if you cannot possibly do good to others, at least avoid doing harm to them, and

this adage I think is appropriate to the situation. The remedy is to improve the quality of the Vaidyas and I would suggest that the existing Vaidyas and Hakims be given a short course of training so as to enable them to serve the needs of the masses until such time as the government of the land is in a position to provide the people with better classes of medical personnel.

"Now that the old political conditions have disappeared. We have, I think, to conserve the best in our old systems of medicine and graft it on to the modern systems, or vice versa, if you prefer it for sentimental reasons. Indian Medicine still remains as an unexplored field and a proper study of it will no doubt make India contribute her own unique quota to the corpus of medical knowledge of the world. How this is to be done is the question. I am sure that the Chopra Committee on Indigenous Systems of Medicine would have made far-reaching and constructive recommendations in this regard. As a layman I would suggest that in the interest of science and suffering humanity facilities must be created for the study of Indigenous Systems by the practitioners of Modern Medicine and for the study of Modern Medicine the Vaidyas and Hakims with a view to bring their knowledge up-to-date and serve the people more efficiently. Secondly, it is necessary for the State to take active measures to promote research in all aspects of Indian Medicine. To this end, the Governments in the Centre and the Provinces should found Research Centres.

The objects of all systems of medicine—Ayurveda, Unani, Allopathic or any other, being the prevention and cure of disease; restoration and maintenance of health, it is necessary to evolve a single system containing all

that is best in the other systems. I have no sympathy with the endless discussions about the relative superiority of the different systems. Such discussions may tickle human vanity but they also create avoidable bitterness and in any case they lead to no useful purpose. I, therefore, plead that you must all pool your resources together and make efforts to evolve a system of medicine for India which, while maintaining its international relationship with advances made all over the world in medicine, will still be rooted in our own cultural foundation. Though science is not national but international, I still think that methods of medical treatment can maintain an individuality consistent both with truth and with the tradition of the country.

I must congratulate you on the ideals you espouse, that is, the promotion of unity of knowledge. The future of medicine in India, to my mind will depend far more upon those who have studied and practised both the Modern and Indian systems of Medicine than on the diehards of Ayurveda or Allopathy, who prefer to circumscribe their vision and knowledge. I would like to quote, before closing, the following wise counsel offered by His Excellency Sri C. Rajagopalachari to the Bangia Ayurveda Mahasabha: "Truth and Science are one. There can be no competition between truth and truth, but only between truth and error. I would, therefore, entreat you to remember three things, one is to demand and not to oppose high standard of education and equipment and careful selection in admitting students to your colleges for courses in medicine; the other is to include modern scientific knowledge alongside of our traditional Ayurveda in your institutions so that Truth may run in a

single course and prejudice and ignorance vanish to the minimum point. Thirdly, scientific research should be encouraged and there should be no opposition but full co-operation in this between the Western Doctors and the learned Kavirajas."

Sri Lala Deshbandu Gupta inaugurating the Conference made a powerful plea for a better understanding of the the urgent need to provide achievements of Indian Medicine and State help for its development and research, as also for proper propaganda for the Systems in foreign countries like America.

Dr. Y. Suryanarayana Rao in his presidential address reviewed the efforts made by the public, the practitioners and some of the Provincial and State Governments for the advancement of Indian Medicine expressed dissatisfaction at the findings of the Bhore Committee in as far as it related to Indian Medicine and said:

"At present the two systems, Indian and Western are taught separately in the institutions of the type of the School of Indian Medicine, Madras and the graduates evolve their own synthesis by integration according to their aptitude and capacities. This is but an early and transitory stage of the process—the second stage will consist of experts, competent in both the systems, undertaking the teaching of synthesised Indian and Western Surgery, Indian and Western Midwifery, Indian and Western Materia Medica and so on. I am confident we have now trained experts to undertake such work especially in the Madras Presidency. The complete synthesis of the two systems on the basis of properly written Text books is the third stage. Before a final unification by synthesis is effected sufficient research in

Indian Medicine of various categories have to be done with a view to conserve all the best we have in our ancient system of medicine, for, otherwise, we not only lose the great treasures of the past but also easily succumb to the glamorous foreign medicine."

Discussing the need for Research, Dr. Rao said a Research in Indian Medicine can be undertaken immediately under the following heads:—

1. Clinical, 2. Drug, 3. Dietetics, 4. Pharmacological and 5. Literary.

• To carry out these types of Research, the Government should set apart some Government and State hospitals where Clinical and Dietetic researches can be carried out and statistics compiled.

2. Research Institutes should be opened in provinces and States where laboratory work could be carried out as also the pharmacological and the literary Research. But all these institutions should be so carefully co-ordinated that one helps the other in the larger interests of a common cause. Drug research should be complimentary to Clinical research. We have in Indian Medicine very well planned diets prescribed for individual diseases and there are traditional dietetic methods of great medicinal and nutritional value, handed over from generation to generation that are peculiar to different parts of the country. All those are to be studied well, collected and verified on patients in the Hospitals of Indian medicine. The literary section shall be in full possession of the very recent advances in Western medicine and should also have a high proficiency in Indian Medicine. They should begin to write new text books in different languages, suitable for colleges and schools of

Indian medicine of to-day and to-morrow. While personally I pin no faith in the usefulness of Pharmacological work, as it is carried out at present it might be undertaken for what it is worth. It will be useful at least to re-affirm the properties of drugs already enunciated by sages by Divyadrishti, but it will be a very tedious and prolonged work spread over years and decades to complete the analysis of all the simple Ayurvedic Herbs, let alone compound preparations. It is highly expensive and will seriously tell on the Public Exchequer, while its usefulness is limited in the case of a single drug and even more so with regard to compound preparations. But this may help to satisfy these present-day scientific minded men who are satisfied only when modern laboratories prove what is already known. What has been achieved in the work turned out at the Tropical School of Medicine, Calcutta after spending large amounts and all the energies of the workers is mostly to re-affirm the properties of the drugs in a modern language. Perhaps this has enriched the pharmacopeia of Allopathic Medicine. But strangely, when we want to utilise a South American drug like Cinchona, we are told we require the permission of the Surgeon General and the Government. This is simple nonsense in the field of Science. In Drug research I have to say that there is much to be done. All around, we have innumerable plants which according to Ayurveda are valuable remedies and useful to the mankind. There are poisonous plants also. They must be separated and dealt with accordingly. Above and below the soil, if we have only the clear grasp, we have hidden treasures in Ores, Mines and Herbs, which after study and utilisation contribute a lot to our national resources. None but foolish men would call the plants not known to him as wild plants and discard them as unfit for any

purpose in the Universe. Hence we have to survey the herbs and the localities where individual herbs are grown and find out where they could be grown abundantly in consideration of the soil, seasons, atmospheric conditions and the like. They have to be identified according to the description given in books. With a view to increase their usefulness to the ailing public in day-to-day life and with a view to lessen the growing strain on the Government in providing medical relief to the Public, the Government should advise and encourage the authorities and individuals concerned to grow more and more herbs in Public parks and Gardens including domestic yards. Provinces and States should appoint Provincial and State Garden Superintendents to implement and supervise this scheme. Their offices should serve as the Emporia of Herbs. The Drug research section shall prepare an authorised list of plants to be grown in public places. Elementary knowledge in Herbal usage, and domestic medicine, shall be included in the curriculum of studies of Elementary and Secondary Educational Institutions. The Public would then easily follow the Physician's instructions: They could procure fresh herbs and prepare juices and decoctions out of them to take either as Vehicles to Medicines or as remedies by themselves. This method ensures effective and at the same time, cheap treatment in Ayurveda, and it is very essential for a poor country like ours. It is very unfortunate that domestic treatment has become a forgotten subject and even for minor maladies people resort to state-aided institutions or private clinics. It is a tragedy that the first-aid and domestic bags in our homes which were a common feature till recently containing a number of valuable drugs like Ajamoda, Vaicha, Rasna, Katuka - Rohini, Hareethaki, Pippali, Chevyam, Modi, Lasuna,

Bharangi, Vidanga, Palasa, beejam etc., are discarded today with the growing lazy tendency of obtaining medical relief without any strain for themselves.

The subject of domestic remedies should compulsorily be taught to girls in schools. With these methods of research we can advance our science and keep abreast with modern times without losing anything of the past."

Science and Scientific

In regard to the terms Science, Scientific medicine which are bandied about by almost every one today, he observed that it is highly deplorable that the followers of Allopathic system always talk about Allopathy in terms of science, scientific medicine and modern scientific and rational system of medicine etc., meaning that they only possess those good qualities and none else. They little realise that such advertising from house-tops, that only Allopathic system is rational and scientific lies their weakness. Sound things need no advertisement of this nature. The more the Indian Nationalism is growing the more the public are getting interested in Indian systems of Medicine, the more the cry for "Modern Scientific Rational System of Medicine etc.," has increased in pitch and tone. So much so, the time has now come when the Public have to demand for an end to such boasts and high sounding claims made in and out of season by the Allopaths. It is generally those that do not practice much of scientific and rational methods come out to cry loudly of science and rationalism. Quackery is rampant in all systems, perhaps it is less in the Ayurvedic System. An Ayurvedic practitioner who knows the recipe and the properties of the drugs and prepares his

medicines and use on indicated patients them. This is more rational and scientific than one who empirically uses a preparation, whose composition and method of preparation is not known to him and which cannot be prepared by him (or in India) for trial on diseases."

Stressing the need to postpone consideration and implementation of the recommendations of the Bhore Committee, Dr. Suryanarayana Rao said, "The recommendations of the Bhore Committee, if implemented through the opening of the primary health centres, the firka centres etc., would not only end in a fiasco but also result in a great loss of public funds. The recommendations are unilateral and pro-allopathic. All amounts spent in the implementation thereof are amounts lavishly spent on Allopathic system alone. As I said elsewhere the preference and faith of the vast millions of the country's population are deeply rooted in Indian Medicine. They want all benefits through Indian Systems to the extent possible. The Government to-day is neither bureaucratic nor autocratic. It is the Government of the people for the people, by the people. It is true that a small percentage of the intelligentsia and those in Key-Posts of the Government's Medical Departments press for the implementation of the Bhore Committee's recommendations to the detriment and neglect of Indian Medicine. What will be the results if they are implemented? The Government will by forcing one particular system on the public as against their wishes and needs. This is neither right nor just. After all how are primary and firka centres going to help the country in eliminating diseases and promoting health while the poverty and low standards of living, miserably low nutritious food, hopelessly ill-ventilated houses are our lot. Who would attend

these centres, manned by a set of persons who almost appear to be foreign and who cannot identify themselves with the rural population and mingle with them as equals? It is a colossal waste of public funds to rush through the schemes. In my opinion, the best method would be to read together the Bhore Committee Report and the Chopra Committee report which we hope will be far reaching in nature and then draw out a comprehensive scheme of medical relief and medical education. That will be in the best interests of the country. If, then, the primary and firka health centres work they work on a synthetic basis; the medical work being chiefly Indian while in surgical, Indian and Allopathic. The public will have then obtained the preventive and curative medical aids of their choice and need. There should be no compulsion or coercion of the public from the side of the Government favouring a particular system of medicine. The expenditure would also be considerably lessened. There would be no need to run throughout the country for all times, double sets of institutions—Indian and Western. I trust that wiser counsels would prevail and the hurried implementation of the Bhore Committee's recommendations be kept in abeyance pending the publication of the report of the Chopra Committee. Any other action, will, I am sure, be impracticable by the future generations and the succeeding administrators."

In conclusion he observed that "the I.M.A. claims to represent the entire Medical profession of India which, in fact, is not at all true as has been repeatedly pointed out by me since they have not taken within their membership qualified practitioners of Indian Medicine who possess a good working knowledge of Western system also. No doubt, it is doing yeoman service to the

Allopathic Medical profession working with a mentality of a Trade Unionism I addressed the authorities of the I.M.A. on this question in my capacity as the president of the Madras Provincial L.I.M. Association but a reply is not yet forthcoming. The words Indian Medicine, and Indian Medical Association are so close that people mistake the Indian Medical Association as an Association of the Indian Medical Practitioners. Those words—the Indian Medical Association—rightly belong to us. The I.M.A. will do well to remember that there is an association at Madras called the Indian Medical Association, started and registered under Act XXX of 1860 several years before the Indian Medical Association, Calcutta was founded. They would do well to change their name into “The Indian Allopathic Medical Association, (I.A.M.A.) so that nobody would get confused here-after with the two All-India Medical Associations.

Scientific Sessions.

Dr. C. Dwarakanath, in his Presidential address to the Scientific sessions said, “that the organisation of the Scientific session is a step taken in the right direction. I hope that in your future annual conferences you will be able to allot more time for the science; for, on the progress of science and the advancement of knowledge will depend the efficiency of your methods of treatment and usefulness to the public. While the advance of medical knowledge rests on researches made all over the World, and the number of those who dedicate themselves to research being comparatively few, the general practitioner has to contribute a great deal in this direction. Much, in fact, depends on the general practitioner to make valuable contributions, especially in the field of clinical and preventive medicine.

You should not go with the notion that you cannot carry on researches because you do not work at elaborately equipped institutions labelled as research institutes and your designations do not bear the label ‘Research Officer’, ‘Research Professor’, and so on suggestive of specialised qualification of the one or the other kind mentioned above, in the technique of laboratory methods, etc. Nonetheless, it is true that it is in the general practitioners to make the most valuable contributions.” Quoting Sir James Mackenzie in respect of the importance of the general practitioners to medical research, he observed that “The place where the general practitioners can meet and contribute their quota to the advancement of knowledge and research is their scientific meetings and conferences. It is here that all the general practitioners and research workers can meet and exchange thoughts and compare experiences. The former can help the latter with data which they so much need and the latter can provide the former with new knowledge. Such a tradition is not new to our country. It is as old as our history and you as the practitioners of Indian Medicine will remember the following memorable words, of Charakacharya, the Father of Ayurveda, regarding the value of such gatherings as yours for the advancement of medical knowledge and the promotion of medical research: “A physician should discuss with a physician. When one discusses with another who is possessed of a knowledge of the same science, such discussion leads to increase of knowledge, and happiness resulting therefrom. It makes for greater expertness and promotes the power of lucid exposition. Doubtful points are cleared and certainty gained in respect of certain other points. Certain matters unheard of before become known as a result of such discussions.

“Essential and desirable as frequent discussions, exchange of ideas and views, comparison of experience and debates on important questions are for the furtherance of knowledge. They should not be confined to theories only. This has, however, been the case with the learned Vaidyas for whose deep erudition we have great respect. From a perusal of the proceedings of their Sammelans and Charcha Parishats, one observes that they have yet to arrive at definite conclusions regarding the significance and value as applied science of the Pancha-Mahabhutha and Tridosha theories. Nor are there any evidence to show that they have brought for demonstration and discussion the results obtained in practice by the application of these great theories. In the words of Dr. Direndranath Banerjee who has done much of painstaking spade work in these theories, ‘During the last half a century, a number of Tridosha Charcha Parishads have taken place, viz., Tridosha Commission (1901), at Panval (1933), Benares (1935), Bezwada (1944), and Delhi (1947). In none of them could the pundits come to an unanimous opinion. In fact Vaman Sastri Datar the compiler of the proceeding Benares Tridosha Charcha Parishat has recorded that there exists at the present time 72 different opinions on Tridosha amongst the eminent pundits and they differ very widely from one another. He has grouped these opinions under three categories, viz., (1) Tridosha Theory is nothing but imagination; (2) Tridoshas are unseen forces, and (3) Tridoshas are visible material substances.” Such widely differing views have naturally made these doctrines more mysterious, if not obscure and unintelligible to modern minds.

“What one observes from the above is the fact that the learned Pundits have

followed in these conferences, the old methods of establishing Sidhantas by dialectical debates, where one could witness feats of brilliant intellectual acrobatics the main object of such displays being as in the olden times, the demolition of the opposing schools of thought. As for such debates contributing to the growth of useful knowledge, one has very regretfully to observe that they have only succeeded in making the valuable doctrines less intelligible and more recondite to modern workers.

The real trouble today is the language in which the ancient wisdom of India is enshrined. On account of the policy pursued till now in respect of education the learning of Sanskrit did not receive proper encouragement. The quality of knowledge of this language possessed by those who have studied in modern schools and colleges which provide for its teaching leaves much to be desired. In contrast, it will be seen that for a long time and uptill a decade or two ago a good knowledge of Latin and Greek was insisted upon for students going in for the study of science and medicine in the Western countries. This enabled them to study independently the great classics of European Science and Medicine. In the History of Science and Medicine, one would not fail to observe that modern Medicine and Science have evolved naturally from Latin and Greek origins. Both these languages, and the cultures presented through them have been completely exploited during the process, and in that sense, Latin and Greek are today considered to be outworn cultures and the languages-dead languages.

On the same analogy, Sanskrit is said to be a dead language and that, very little could be gained from its intensive

study. This analogy is not only wrong but it is a total misreading of History. Because of breaks in the Indian civilisation due to frequent invasions and the subsequent British conquest there has been no natural evolution of Indian culture, Science or Medicine from the ancient Sanskrit culture. The knowledge laboriously gathered by the ancients of our land is still there to benefit anyone who seeks for it. In this sense Sanskrit is not a dead language. It is very much alive.

If perhaps, a good knowledge of Sanskrit was insisted upon for those who went in for the study of Science and Medicine in the past, progress of these two subjects would have taken a more healthier and significant turn and the contribution of India to the sum total of the knowledge of these subjects would have been valuable indeed.

The present position, however is very intriguing. A knowledge of Sanskrit, according to some, is a condition precedent for the study of Ayurveda. In this view, the study of Ayurveda without a proper knowledge of Sanskrit will become a doubtful proposition. The policy of the Government in regard to the place of Sanskrit in general basic education—particularly to those who desire to take to the study of Sciences and Medicine is yet to be formulated. The other aspect of the question is that if Ayurveda represents a Science and an Art, it can be presented in any language. Science and Art need not necessarily depend on any particular language. The Science has to be applied for practical purposes and the Art practised. Hence, it can be taught in any language.

"If the contribution made by the exponents of Indian Medicine to make

the principles and practice of their system intelligible and understandable to modern minds has been of a negative kind, the view that they are strikingly modern in conception and in some respects much in advance of their contemporary of the present has come from a number of modern medical men of standing, who have made deep and critical study of the subject, viz., Hoernle, Neuburger, Harold Brown, Brijendra Nath Seal, Ray, Pardey Lukis, Srinivasamurti, Mukhopadhyaya, Gan-anath Sen, Jamini Bushan Roy, Lakshmipathi, Deshmukh, Banerji, Agashe and Apte, etc. Their pioneering work has thrown much light on the scientific aspects of these systems. Notwithstanding the lack of interest and inclination on the part of the generality of the practitioners of Western Medicine in these systems, we discern that the number of those who are evincing considerable interest in their scientific aspects is gradually growing. We also discern a welcome change in the outlook among the more thinking section of Vaidyas who are trying to examine their science in the light of modern advances in general and medicine in particular and who feel that there is much in common between the two contemporary systems of our times.

The Lack of Medical Research in India.

In our country medical research has been sadly neglected. This fact has been forcibly brought home by the Health Survey and Development Committee. In their own words: "In western countries medical research is undertaken chiefly in the various departments of universities, medical colleges and teaching hospitals. Research is in fact an almost universal activity in such institutions, and is regarded as a

normal function.Broadly speaking, medical research receives little or no attention in the medical colleges of India.....The outstanding defect at the present time is the almost complete absence of organised medical research in the various departments of the medical colleges. It is true to say that, apart from a few noteworthy exceptions, research in these institutions has been badly neglected." The main reasons for this state of affairs among others are "the inaptitude for or lack of interest in research on the part of the teachers employed" and "no proper facilities exist in India for training the young alert minds of the country in a scientific approach to medical matters."

What has been stated above in respect of research in modern medicine applies to Indian Medicine also with equal force, for Indian Medicine represents today the sum total of valuable medical knowledge accumulated, treasured and conserved throughout the generations past. Divorced of national sentiments and patriotism, both of which are, however, powerful subconscious factors and which cannot be easily, brushed aside, this unexplored field of knowledge should naturally form the primary desideratum on which the future edifice of medicine in India should be raised.

Old and New

We have thus before us old knowledge and the modern scientific advances. You will appreciate my point when I say that the achievements of the past are concrete and the future is yet to unfold itself while the present is a link between the past and the future. How much of the achievements of the past are of real value with which the present can benefit so that a great future can

be built is a matter that has to be properly evaluated; otherwise whatever we may do may appear to be an upstart. The achievements of the past have been repeated *ad nauseum* and not much will be gained by my recounting them here. Suffice it to say that there is in the accumulated wisdom of the past a great deal that has to be fully utilised. As exclaimed by Sir James Jeans in his 'Mysterious Universe', "So at last we are tempted to conjecture today, and yet who knows how many more times the stream of knowledge may turn on itself."

The method of approach to the understanding of nature and her phenomena might have been different between the ancient Indian and the modern Western sciences. In the former case the method adopted was of the meditational and the intuitive type. The authors of various branches of learning in ancient India were the Rishis and Sages of Vedas. These Rishis perfected a method of their own in their scientific endeavours. They dissolved their self in the eternal and tuned their body, mind and brain in perfect union and their mental energy was directed towards the understanding of one supreme ideal. Their method was a truly scientific penance and out of it came a vision, a revelation, unfolding to their view all about what they earnestly sought for. The fact that knowledge of the truth can be gleaned by supra-sensory perception is today coming to be realised in an abundant measure. Speaking on this, Prof. Rhine in his work 'The New Frontiers of the mind', observes that "the mind has certain power for getting knowledge other than through the usual nerve reactions. It is true that the ordinary perceptions are gathered through the nervous system. But extraordinary experiences are achieved without direct contact of the sense organs

and nervous system. Yet, they have exact and immediate value so far as experiences are concerned, the same value as if they have been acquired through the senses." They are not imaginative and poetic flights, but are of practical value as they furnish new knowledge of certain facts. These experiences fall within the range of immediate knowledge as opposed to inferential knowledge. Patanjali and others discovered and laid down the laws of mind which explain such experiences. The objective methods of understanding phenomena, valuable though, have limitations, conveyed as they are by the instruments of mind, i. e. the senses and the nervous system. These channels are as Prof. W. E. Hocking rightly observes, 'Near Minds' and not mind proper. He observes in his 'Mind and Near Mind', "But the extent science or sciences of mind have presented us not the mind itself, but substitutes for mind..... near minds we call them... The several near minds of the scientific psychology have their worth and their actuality; but have life only as organs of mind."

It was possible for the great sages of the past to develop methods by intense meditation and concentration on the subjects of their interest and discover the truth in its entirety. The technique of applying the laws of mind referred to above is called Yoga and the famous Yoga school of Sankya order is that of Patanjali. The Yoga Suthras or rules of Patanjali are well-known. It is acknowledged by those entitled to an opinion that they are an exposition of an exact science of mind and do not comprise religious or any other sort of canons which demand veneration or obedience from moral necessity. The goal of Yoga is to reach a state of intense concentration and detachment

from material surroundings in which the Purusha alone is experienced. This produces a state of bliss in glimpsing that which is eternal.

Aldous Huxley, discussing the process of Yoga in his work 'Ends and Means,' observes that "the Indian ascetics train their bodies systematically until they are able to exercise conscious control over physiological processes that are normally carried out unconsciously. In many cases they go on to produce unusual mental states by the systematic and profound modifications of certain bodily functions such as respiration. There is good evidence to show that such practices may produce very valuable results. It is possible for a man who employs the methods of Yoga to achieve a high degree of non-detachment of the things of this world and at the same time to heighten his consciousness that he can attach himself more completely than the normal man to that which is greater than himself, to the integrating principle of all beings." The fact that the method of Yoga produces unusual states not so far understood has also been noted by Dr. Kini in his presidential address to the 9th annual conference of the Association of Surgeons of India which took place at Bombay last year. He observes: "There are also some unexplained aspects of the control of metabolism by will power—Hata Yoga is an example." Such observations made by modern workers on the Indian method of perceiving truth are many, and we need not go into them in detail. Suffice it to say that by these methods immense ranges of vision by which perception may be extended to any desired degree were developed and such a perception goes beyond the current sensory observations. Thus the fundamental truths which are basic to

Indian Medicine such as Panchabhutha and Tridosha theories have been discovered by the ancient sages by these methods. Many of the ancient observations appear to be justified in the light of modern advances made in fundamental and applied sciences.

"The sciences ancillary to Ayurveda are derived from the Shad-Darsanas. That these Darsanas are not merely metaphysical speculations and they embody knowledge as it was perceived by the seers, will become obvious by the very meaning of the term Darsana, i. e., vision or seeing: or knowledge demonstrable. Those who gave out the Darsanas are the Darsanikas who are those that realised the Truth. They are also called Apthas or authorities. Nyaya Suthra defines Apthas as those who taught what they saw, be they Rishis, Aryas or Milechhas. The term 'authority' usually employed to Apthas should not be confused with the Western idea going back to the middle ages, which is reminiscent of the days when the sterling torch of authority which sought to burn away the tender seeds of science which Galelio planted at the risk of his life. Authority in the context of the Darsanas and the basic theories of Ayurveda refers only to the views of experts. Even today a large majority of the workers of average intelligence look to modern authorities for knowledge where such knowledge happens to be of a specialised nature not generally intelligible to workers of mediocre intelligence.

"Thus the whole range of the achievements of the past, coming as they did from master-minds, are there awaiting to be made use of by modern scientists. The Indian sciences in the past were not exclusively based on the methods of the seers noted above. Other methods

which are strikingly modern in conception were also in use. We find in Charaka a thorough description of these methods, viz., observation, collection and classification of facts, determination of their mutual relations, description of their sequences leading on to generalization of knowledge thus gained, the use of inductive and deductive methods of reasoning, formulation of hypothesis and theories, setting down of principles after due verification and experimentation of hypotheses and theories laid down, etc. Cleared of the accretions of ages the core of Ayurveda represents a science and art which were derived by both the Yoga as well as scientific methods. India today occupies a very advantageous position in that she has extremely valuable material to work upon and which will serve as creative ideas for imaginative and enterprising scientists to work upon.

"Today science has come stay and a nation's fitness to survive will be judged by the criterion of advance it has made in science. It is now axiomatic that no nation can hope to maintain its progress and prosperity for long if it is backward in the cultivation of sciences and their adaptation, to the ends and means of everyday life. We are today faced with the question of how to catch up and overtake the progressive nations of the world. How this is to be achieved effectively and quickly, entirely depends upon India's educational and scientific policy for the future. We have already discussed the methods adopted for the understanding of science in the ancient days. This method of enquiry which we may designate as the meditational, is a valuable heritage of all Indian's and it provides us with a canvas on which we have to paint the modern idealogy of science.

The last 400 years have seen the birth and growth of a new form of scientific enquiry, viz., the experimental method which, as stated above, is not quite new to India. This method is based on the fundamental principle that science can advance only so far as the theories themselves based on experiment are accepted or rejected according as they agree with or are contrary to other experiments designed to check the theory.

"Every new fact of experimentation or observation is generally followed by a period of quite an amount of intensive thinking which gives newer ideas and newer observations. Progress of science based on this new method of enquiry in recent times has been phenomenal. By virtue of its impact on society not only has science changed mental aspects of our life but it has also altered radically the world's conception of nature and her laws. It is remarkable that in spite of the fact that meditational and experimental methods of approach to the understanding of the secrets of nature are entirely different, they have lead to nearly identical views in many aspects of science.

"If there is thus a basic difference in the methods adopted by our ancestors and the modern scientists in the realisation of knowledge, there is also equally basic difference in the methods adopted for the dissemination of the knowledge thus discovered. I am sure that you are acquainted with the age-old GURUKULA system where the central figure was the 'TEACHER', the discoverer of knowledge himself, and Sishyas or students were initiated by him into the secrets of his new knowledge and the technique of the methods of mental research. This system of instruction therefore was personal and the emphasis was laid on the

cultivation of the mental and brain power of the Sishyas. The truth that the discoverer of knowledge makes a better teacher of it was fully understood. In contrast to this, the Western method can be called the Institutional, in which the reputation of a centre of learning is primarily dependent on its material resources such as finance, buildings, equipment and so on particularly in our country to-day and not on the merit of the individual teacher concerned.

"India was, during the past four centuries a mere onlooker when the experimental methods of science were being slowly developed and new realms of knowledge were acquired in the West. During the first half of this period her sons were engaged in their struggle for existence; and in the second half they were slowly adapting themselves to the ways and needs of their new masters. What they developed as the result of this was, as all of you know, a pale imitation of the methods of the accident. The emphasis came to be laid more on the institution than on the personality of the teacher and the methods of instruction is experimental almost to the exclusion of the meditational. From this it will be seen that our cultural heritage was relegated to the background and not given a chance to express itself naturally. I may venture to put forward now the proposition that the future salvation of our country and sciences and scientific development lies in the judicious synthesis of the two methods, viz., the 'Meditational' and the 'Experimental'."

"We cannot ignore the modern approach to problems of science; by doing so, we will be ignoring all that is seen around us. On the contrary, it will be unwise to suppress our great heritage,

for it is part and parcel of our being. It gives us the one means by which we can excel others. The above may be illustrated by the following instances. We all are proud to-day of Ramanujam, Raman, Bose and Ray etc. They were all essentially Indian in outlook. The researches for which they are famous in the world are the result of intense meditation and mental intuition supplemented with modern scientific facts and methods of approach. I have heard it said by those who were acquainted closely with these Seers of Modern India that they go into trance and self-forgetfulness when they were deeply absorbed with their respective scientific problems and out of such meditations have come their great discoveries. These discoveries were clearly foreseen by them intuitively. We see that in spite of the Western education they had, their ancient cultural heritage and expressed itself and gave them the means to excel others. The same holds good in respect of other prominent Indian scientists as Saha, Birbal and others. Each one of them is more than an institution and it is no

wonder that the future cultural and scientific edifice of India will have to be built by the young men trained under them.

"I have taken you through a long discussion on the need for intense research in Indian Medicine and scientific opportunities in India and need I say that apart from whatever steps the Government may take for placing Indian Medicine on proper basis, much will yet remain to be done by its practitioners. The progress of science all over the world was due to the interest taken by the public to foster the same. There is no dearth in our country of philanthropists, who can step in to found Research centres, institute Fellowships etc. Needless to add, it is also the duty of the Government to help all such constructive endeavours as will make the country rapidly regain its initiative in science and catch up with the advances made elsewhere in the world. Let me once again thank you for having given me an opportunity to address you today."

Samanvayavadi Vaidyak Parishad, Nagpur.

Review of the Parishad issued by Dr. S. L. Kashikar, General Secretary of the Parishad as follows.

"The foundation of a permanent Body which is unique in character and purpose has been well and truly laid this evening and the honour goes to the workers to Nagpur," said Dr. Pranjivan Mehta, President of the Samanvayavadi Vaidyak Conference in his concluding address. The Conference was held on 23rd, 24th, 25th Oct. in the University Hall and Binzani City College Hall Nagpur. About 350 Medicos belonging to Ayurved, Allopathy, Homeopathy, Unani, Biochemistry and Yogtherapy attended the conference from all parts of C. P. and Berar. Shri Yada v a ji Trikamji of Bombay, Shri Nana Saheb Puranik of Panvel, Dr. B. C. Lagu, President of the Board of Indian Medicine, Bombay, Kaviraj Pratap Sinha of the Benares University and Dr. Pathak, Principal of the Ayurvedic College, Hindu University, Benares were some of the notable guests who were present at the conference from other provinces.

His Excellency Shri Mangal Das Pakwasa, Governor of C. P. and Berar graced the occasion by delivering the inaugural address at the conference and Pt. Kunjilalji Dube, Vice Chancellor, Nagpur University welcomed the guests as Chairman of the Reception Committee. The Hon'ble Dr. W. S. Barlingey Minister for Public Health and Medicine was the spirit behind this conference. It was at his inspiration that the idea was conceived to hold a conference of Medicos belonging to different systems prevalent in the country with the defi-

nite purpose of setting in motion the task of integrating, harmonising, coordinating and co-relating all knowledge regarding the science of human life in order to bring into being a National System of Medicine which would be suitable to render every sort of help to the National Government in India for the maintainance of the health of the people and for the cure of deceases.

The idea was so well received that with great enthusiasum and zeal the conference decided to lay the foundation of a permanent Body to be known as the Bharatiya Vaidyak Samanvaya Samiti. On the spur of the movement donations amounting Rs. 3700 were offered by several members of the medical profession towards the beginning of the work of this Samiti. A number of resolutions were passed calling upon the Government and Universities in the country to introduce comparative studies in different pathies in the medical schools and colleges to open chairs in the Universities to institute post graduate courses and research scholarships as a special effort to find out the truth and common ground on the basis of objective tests from the different systems of medicines and to introduce preference in the medical service to those who have studied more than one system of medicine. The Conference by another resolution also called upon the members of the medical profession to whatever system he may belong to develop fraternity, fellowship and mutual understanding and to try to learn each others point of view with sympathy and good faith.

Dr. Pranjivan Mehta, the President of the Conference and Dr. Pathak, President of the Symposium deserve all the credit for steering the ship of the conference through very difficult waters and under trying circumstances. Their sincerety of purpose, erudition comparative study, wide experience, based on personal work and the most amiable nature did not fail to make a mark on the minds of all who were present at the Conference. On hearing them the conviction came to the mind of a number of persons that the ancient Indian Science of Life namely the Ayurveda has a bright future or the capacity to make fresh contributions to the treasure of the knowledge of the world abroad. It can be said without exaggeration that during the period of the past two years C. P. and Berar has given birth to schemes and institutions which could and would attract the attention of the whole of India such as the Jana-pada Scheme of C. P. Govt., The National Council of Physical Education and Recreation India, The All India Physical Education and Samanvayavadi Vaidyak Parishad and

Bharatiya Vaidyak Samanvaya Samiti. The office bearers who are to bear the torch of Samanvaya and carry on the work hereafter are elected as follows.

1. Dr. M. R. Cholkar, President.
2. Pt. Changanani. } Vice
3. Pt. Sunderlalji Shukla, } President.
4. Pranacharya Hirlekar Shastri, Working Chairman.
5. Dr. S. L. Kashikar, General Secretary.
6. Vaidya Laxmikant Puranik, Jt. Secretary.

The office of this Samiti shall remain at Nagpur. The first concern of the Samiti will be to start a Magazine to propagate Samanvaya of all the systems that are prevalent in this Country. Suggestions towards this will be welcome by the organisers of this idea.

(१) डॉ. श्री. ल. काशीकार

(२) वै. ह. ना. देशपांडे

Nagpur, D/-31.10-48-

Editorial

Streptomycin and B. C. G. Vaccine.

Elsewhere in this issue we have extracted (1) an article on Streptomycin by Ritchie Calder, and (2) B. C. G. Vaccine (Bacillus Calmette-Guerine) extracted from that Encyclopaedic and authoritative book 'Pulmonary Tuberculosis' by Maurice Fishberg, M. D. Chief of the Tuberculosis service, Montifiore Hospital. Thanks to the sensation monging News Papers, Magazines and Digests, the generality of the public and a large section of the medical profession were lead to believe that Tuberculosis has been mastered at last and a drug that can cure the scourge by its administration has been found. As Ritchie Calder points out "The hopes of millions of T.B. sufferers" were raised "all-over the world and made them feel that they only had to go round to the nearest drug Store or chemist shop and they would be cured." He adds, "That the fact that the doctor while humanely anxious to do something to a dying child, probably knew no more about the drug than he had read in the headlines was not considered relevant,—he was a qualified practitioner!" The truth, on the other hand appears to be altogether different. While it is true that in the experiments carried with drug in the laboratories it destroyed the Tubercle Bacillus *in vitro* (in test tubes) but its behaviour *in vivo* made, Scientists and Doctors appeal for caution. The morphology of the micro-bacterium and its pathology has made it very difficult for any drug to penetrate firstly, the avascular joint-cell system and secondly the lipoidal capsule that surrounds the organism makes it difficult for any drug, however, powerful its bactericidal action *in vitro* may be to

be equally effective *in vivo*. It has shown by a number of authorities entitled to opinion in Britain, America and France that "even when the germ itself is killed, the fatty-casing itself is poisonous and sets up Tubercular lesions so that even in death it is deadly. To be effective, therefore, a drug might have not only to kill the germ but neutralize its poisons. Again the behaviour and cycle of the disease are quite different (as studied in laboratories in experimental animals) in mice from what they are in (spontaneous Tuberculosis) humans."

It is seen from the literature available that the risks involved in the use of streptomycin are really serious and far outweighs whatever virtue it may possess and warnings to this effect from that the Drug wrongly handled and and wantonly used will prove to be as dangerous as its virtue, and benefits only in a small range of Tuberculous conditions. Work in the direction of evaluating the usefulness or otherwise of Streptomycin is still going on all-over the world and in the mean-while, authoritative workers abroad and some Provincial in Indian Governments, notably the Government of Central Provinces and Berar are appealing to the public for caution.

This brings us to the wisdom or the lack of it in approaching the problem of Tuberculosis from the bacteriological standpoint of view, and for its treatment to bank upon bactericidal drugs to destroy the parasite in order to effect a cure. The consensus of authoritative opinion is sharply veering round the problem of fortifying the soil to deal effectively the morbid

factors of tuberculosis win the battle. Situated as it is and developing as it does, modern medicine has still no conception, as to what constitutes the totality of the living human organism—Body, Mind and Soul. It is true that it has amassed vast knowledge of details which have not so far been synthesised so as to give a whole picture of the man and his relation to his environment and in particular to other forms of living organisms (e.g.) bacteria. It is also true that modern medicine is beginning to glimpse into what is known spoken of nowadays as psycho-somatic concept of life (i.e.) body mind relationship. To those who have studied Indian Medicine the entire problem of prevention and cure of Tuberculosis, resolves itself as a disturbance of the body soil and its inability to keep pace with and adapt itself to the rapidly changing circumstances of life the stress and strain—physical, psychological, economic and other milieu. It is essentially a break down phenomenon due to the Ketabolic process predominating, incidentally supplying the specific environment, or may we say the appropriate culture media for the bacilli (which has been already there) and confess a specific to the particular morbidity. It is such as those who have benefitted by a comparative study of the Indian and Western systems of Medicine who should naturally be critical whenever a claim is made for the cure of tubercular disease with drugs. It is extremely regrettable to note that these are the very people who vie with the practitioners of Western medicine who have no knowledge of Indian Medicine whosoever in the indiscriminate use of such drugs. Apart from all other considerations the infliction of Streptomycin which is an extremely costly drug on the economically down-trodden and poverty stricken

tuberculous patients of India, to say the least is a doubtful virtue. We invite their particular attention to the article on the subject, referred to already.

In the case of B. C. G. Vaccine the reverse seems to be the case. While the governments are cautioning the public in the use of Streptomycin—they are propagating the use of B. C. G. Vaccine in the prevention of the spread of Tuberculosis. When one remembers that the problem of immunity against tuberculosis is intimately related to the balance are otherwise of the constitutional factors, it is surprising that efforts are being made to revive an obsolete method the vaccination against the disease. A time there was when vaccination against Tuberculosis was considered to be a desirable measure but was given up after giving it a fairly large trials. The position, as so ably reviewed by Maurice Fishberg extracted elsewhere in this issue, does not seem to have changed within the last one decade. The reasons he has adduced for discouraging the use of such measures as B. C. G. Vaccine in the prevention of Tuberculosis and the dangers involved in active immunization holds good even today. To be able to assess its value it will be necessary to vaccinate, as Fishberg says, one half of the population of the Country or at least of a large City while the other half is left to natural immunization as controls. This, in the estimate of Fishberg would require at least 50 years. It is doubtful if such a course is possible and feasible. With the claims for B. C. G. Vaccine not being properly established, it is unwise to embark on mass vaccination of the type proposed by the Government and re-enact the notorious Lubeck adventure which costed the lives of thousands of innocent and otherwise healthy children.

The Reception Committee of The 18th L.I.M. Conference AND All-India National Medical Conference

"Nandakuti"

Besant Avenue, Adyar,

Dated 24th January, '49

I am glad to announce that the Executive Committee of the L.I.M. Association has in its meeting held on 19-1-'49 resolved to conduct the 18th (Annual) L.I.M. Conference at Madras on the 27th and 28th of February 1949. In pursuance of resolution No. XI of the First All India National Medical Conference which took place at New Delhi on the 23rd and 24th October, 1948 under the presidency of Dr. Y. Suryanarayana Rao, a special session of the Conference too will take place simultaneously on these dates. To make these two Conferences a success, a Reception Committee has been formed with Dr. Jammi V. Bhadrinarayana, L.I.M. as its Chairman and the undersigned as the Secretary. Drs. R. Krishnamurthi, L.I.M. and N. Sankunni Menon, L.I.M. have been elected as Joint Secretary and Treasurer respectively.

Dr. T.L. Kanta Rao, L.I.M. has been elected to preside over the L.I.M. Conference and the president of the National Medical Association-India. Dr. Y. Suryanarayana Rao, L.I.M., F.A.I.M. will preside over the special sessions of the National Medical Conference.

This Conference will be the second of its kind after the dawn of Swaraj. In the pre-swaraj days, our Conferences were mainly concerned in putting up strenuous fight for the around progress of:

1. Our Almamater the Government School (now College) of Indian Medicine and all the ideals, to achieve which it was found in 1925.
2. To advance the progress and prospects of the L.I.Ms. in all directions.

Though these struggles went a long way in solving at least some of our hardships there remains yet a great deal to be done. The advent of Swaraj, we believe, should also be followed by Swaraj in Science and Culture etc., and on this depends the future development of not only L.I.Ms. but also medical Science as a whole. Much remains therefore to be done with the hearty co-operation of every one of you. It becomes necessary, therefore, for every L.I.M. to make the Conference a success by helping it financially and otherwise. We therefore look to you to contribute liberally to enable us to organise and conduct the Conference in a fitting manner.

The occasion is particularly significant as the National Medical Conference will also be meeting on the same dates at Madras to consider the findings and recommendations of the Government of India Ministry of Health Committee on Indigenous Systems of Medicine (Chopra Committee) which, it is understood, will be released to the public shortly and offer our considered opinion on the same. This makes it all the more necessary that you should be present at the Conferences.

Rs. 10/ has been fixed for the Reception Committee membership and Rs 5/ as the delegate's fee. Your contributions may be kindly sent to the undersigned as early as possible.

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- (iii) to purchase such materials and appliances as may be required by the members and to arrange for stocking and distribution to members,
- (iv) to provide an Institute or Clinic to meet the professional needs of members and to tender expert advice to them,
- (v) to open branches or depots for the sale of medicines, raw-materials appliances to the members.
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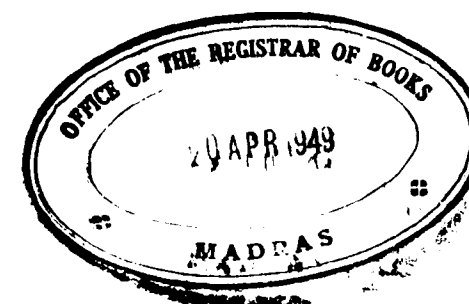
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CHOPRA COMMITTEE'S PROPOSALS

Medical Relief in India

Role of indigenous Systems

"There is urgent necessity for inaugurating research in Indian medicine so that it may, in an abundant measure, contribute to the corpus of medical science and art. By research, Indian medicine, which has been static for many centuries, will once again make its contribution to the welfare of the people of this country and of the world", says the Report of the Committee on Indigenous Systems of Medicine which has been published recently. The Committee was appointed by the Government of India in December, 1946, under the chairmanship of Col. R. N. Chopra.

Medical relief afforded by Western medicine in India at present is extremely inadequate, says the Report. Indian medicine, in spite of its static condition, is still largely practised in India. There is demand for it on the part of large and varied sections of the population. It helps to fill big gaps in the present State-sponsored and State-maintained systems of Western medicine.

The following is a brief summary of the Committee's more important conclusions:

The Committee are of the opinion that, while Indian medicine can take much of practical value from Western medicine, especially in the fields of surgery, obstetrics, structural physiology, pathology, and diagnostic methods and appliances, the latter can also learn much from the philosophic background of the Indian system, its comprehensiveness,

the importance it attaches to the soil factor and dietary, its generalisation of principles, and the knowledge of truth gained by the use of supra-sensory perception.

The Committee do not believe that there can be separate systems of Western or Indian medicine. Science is universal and medical science is no exception. The so-called "systems" merely represent different aspects and approaches to medical science as practised in different ages and in different parts of the world. The aim is the maintenance of health, and prevention and cure of disease. Anything of value emerging from these should be integrated and utilised for the benefit of humanity without reservation.

Such a unified system will give our people the benefits of all the advances that Western medicine has made and will provide them with a system more in keeping with their habits, tastes and requirements and which from its comparatively cheaper medicines will be more suitable to their economic circumstances.

Integration of Indian and Western Systems

The Committee are of opinion that the integration of Indian and Western systems of medicine leading to synthesis is not only possible but practicable, and recommends that immediate steps should be taken in this direction.

The first step will be an integration of the courses of study by arranging curricula in such a way that whatever is weak in one system is supplemented and strengthened by the strong points of the other system or systems. The second step will be the teaching of each subject by the same teacher, instead of by separate teachers as now, giving the students a unified view of the Indian and Western medicine. The final step will be in the field of research where experts of Indian and Western medicine will work side by side, checking and verifying the various hypotheses and theories, either rejecting or harmonising them. If the theories are such as could neither be rejected nor reconciled, they are to be used as parallel hypotheses.

Just as Western medicine is being taught in the colleges of Indian medicine, Chairs of Indian Medicine should be established in the colleges teaching Western medicine.

To facilitate the integration of teaching and studies the following steps should be taken simultaneously: (i) improvement in the basic education of the entrants; (ii) compilation of unified text-books giving integrated versions of Indian and Western medicines; and (iii) training of special teachers for integrated studies.

The first source of supply of teachers for integrated studies will be from the present schools and colleges of Indian medicine. Promising graduates of both systems with proper training will form the second source of supply to the future colleges, provided good prospects are offered to them. The students should have a working knowledge of Sanskrit or Arabic for Indian medicine and sound knowledge of English and

basic modern sciences—chemistry, physics, and biology—before starting professional studies.

One objection raised against integration is that it will give rise to mental confusion in the student, but if the teachers and the taught are of the right type this should not occur. The other objection is that the integrated studies cannot be completed in the time specified for the course. If the syllabus is properly worked out and a lot of unnecessary details eliminated, as is now being proposed in America and has also been recommended by the Health Survey and Development Committee, there should be no difficulty in completing the integrated course within the specified period.

The conception of education to be given to a medical practitioner must be considerably altered and enlarged so that he not only has knowledge of technical subjects, but also a general background of sociological subjects. In other words, he should have the fullest opportunities for the development of scientific and humanistic talents to enable him to be a friend, philosopher, and guide to his patients.

The curriculum of studies should be so arranged as to give the student adequate knowledge of Indian medicine with essentials of modern Western medicine, particularly in those branches where Indian medicine is deficient, to make him fitted for modern conditions of practice.

The course of training should extend to five years. A short-term course of three years should be conducted for an interim period, till an adequate medical

personnel is trained to work in the rural areas. A curriculum of studies, which should be uniform all over the country, has been worked and the syllabus given in the Report.

The Government should set up a Board of experts for editing and publishing classical texts and compiling the right kind of text-books, harmonising ancient and modern knowledge, first in Hindi in the case of Ayurveda and Urdu in the case of Unani, and later to translate them into provincial and regional languages.

Teaching institutions should be adequately subsidised by the State and maintained at a certain standard. There should be at least one well-equipped and adequately staffed institution in each Province and State in which the teachers should be adequately paid so that they do not have to resort to private practice. Those institutions which do not come up to the standard should not be allowed to carry on with the work of instruction. Such institutions should, if possible, be grouped together into one good institution or used for relief purposes. All teaching institutions should also be centres for carrying out research in which both students and teachers should participate.

The permanent increase in the number of trained medical personnel will take a long time and, even if they are available at a distant date, these persons will settle by preference in towns and cities only, in spite of monetary inducements to settle in villages. The pressing problem of immediate rural medical relief will thus remain unsolved. The Committee, therefore, suggest that use should be made of the existing practitioners of Indian medicine by giving them necessary training in public health and other essential subjects.

According to figures collected by the Committee there are more than 2,00,000 indigenous practitioners in India and out of these it should be possible to get 25,000 to come forward for this training course during the next five years. In addition to this, there are about 4,000 institutionally qualified practitioners. This number should be sufficient to man the the primary village dispensaries so urgently needed. The following suggestions have been made: (i) a six-month course in the elements of public health, minor surgery, obstetrics, etc., be given to them; (ii) registered practitioners, who wish to take the course, be given a subvention at Rs. 30 per month; (iii) graduates of schools and colleges of Indian medicine, who wish to participate in the scheme, be allowed to sit for the examination without taking the course; and (iv) those who pass the examination should be taken in the scheme of rural medical relief.

There should be common all-India standards of professional and technical education for health personnel and a stable continuous long-range health policy. To implement the scheme of providing the rural medical personnel suitable text-books should be written by an expert committee and made available in all provincial and regional languages.

A medical practitioner, trained according to the Committee's scheme, is to be put in charge of a rural dispensary to serve a population of 3,000 to 3,500 which will be the primary unit of medical relief. The secondary unit will be in charge of an institutionally qualified person with headquarters in a big village giving relief to a population of 10,000. This unit shall also supervise the work of primary units. The Panchayat Unit is to be a mobile unit with emergency equipment and nursing staff and serve a population of 50,000.

There should be adequate provision for in-patients in the taluk, district, and presidency towns. These hospitals should provide relief in all the branches of medicine, be well-equipped, and manned by both practitioners of Indian and Western medicine, the latter doing surgical and obstetrical work and the former treating mainly with Indian medicine. This bilateral arrangement will be only for a short time—until the synthesis has been effected.

State Control

The Committee consider that the time has come for the Government to deal with the matter of control of medical education and practice in a comprehensive manner and that the Government should set up a special committee to go into the matter so that an all-India system of control is evolved and, if possible, one single Register for all recognised systems by a comprehensive Act of the Central Government.

If the problems of health and medical relief are to be tackled on a national footing, the State should take in its purview all the recognised systems in the country and legislate comprehensively for all, instead of by piecemeal provincial legislation.

In legislating for the control of recognised systems of medicine, the following fundamentals should be kept in view: (i) adequate provision for the supervision of medical education of all the recognised systems, and of their teaching and treating institutions; (ii) registration of practitioners of the recognised systems; (iii) disciplinary control over practice; and (iv) setting up a consultative and advisory body on matters relating to public health and medical relief.

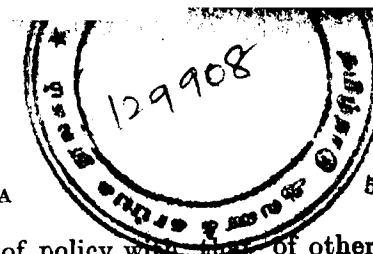
To implement these proposals the committee recommend the formation of a statutory body which may be called the National Medical Board. This Board should consist of two autonomous sections—the Indian Medical Council and the Council of Indian Medicine—one dealing with Western medicine and the other with Indian medicine. The provincial and regional branches should be affiliated to the Board which will also be an appellate authority over disciplinary actions on practitioners and institutions taken by provincial branches.

Registration should be made compulsory for all practitioners in order to eliminate quacks and prevent the credulous public from being exploited. The Register of practitioners of Indian medicine should be separate from that of the practitioners of Western medicine for the present. Later, when the standard of education in the colleges of Indian medicine improves and the non-institutionally qualified fade out, the question may be reviewed and the desirability of having one Register considered.

In the case of those who have no recognised academic qualifications, including well-known Vaidyas and Hakims, no distinction should be made in the Register between the institutionally qualified and non-institutionally qualified. There should, however, be separate electorates for each of them for representation in the Councils.

Planning of Research

The Committee is convinced that there is a wealth of medical knowledge and experience in Indian medicine which needs proper investigation. It should be the purpose of painstaking research



to salvage and collect this knowledge and experience and make it available to the country. The approach to research should be more in accord with the systems themselves, i.e., not only through observation and experimentation in the laboratory, but also through meditative and intuitional means as practised by ancient savants.

Research, the Report says, should have a two-fold aim: (i) to clear Indian medicine of centuries of accretions of doubtful value and make its science and art intelligible to the modern mind and (ii) to work for a synthesis of the Indian and Western medicines so as to evolve a unified system of medical relief and education, suitable for conditions of life in India.

Research should be conducted under the following categories: (1) Research in the fundamental doctrines of Ayurveda and Unani Tibb. (ii) Research in the ancient literature on medicine. (iii) Clinical Research (iv) Drug Research—Pharmacological, Pharmaceutical, and Botanical; (v) Research on nutrition and dietetics; and (vi) Research on psychological aspects of medicine.

A Central Council of Research in Indian Medicine should be set up immediately whose functions will be analogous to those of the Central Medical Research Organisation. The Council should consist of (i) eminent practitioners of Indian medicine; (ii) representatives of scientific bodies, dealing with Indian medicine; and (iii) representatives of educational institutions where research in Indian medicine is being carried on.

The functions of this Council should be (i) the formulation of policy of research in Indian medicine: (ii) the co-

ordination of policy with that of other medical bodies and other research activities: (iii) the organisation and general control and supervision over the Central Research Institute in Indian medicine which is to be established; (iv) stimulation of research in Indian medicine in the Universities and educational institutions; (v) laying down of rules for the appointment of Directors and superior staff; (vi) appointment of the staff; (vii) appointment of Advisory Committees for research in special subjects; and (viii) allocation of funds and grants-in-aid for research work in the Central Research Institute and in other centres.

The progress of work in the various departments of this institute should be published in a journal.

In the Central Research Institute, provision should be made for post-graduate courses and training of research workers: research fellowship of the value of Rs. 150 per month should be established tenable for three years in the first instance to be extended to five years in special cases.

Drugs and Medicinal Preparations

There is great difficulty in correctly identifying many of the medicinal plants used in Indian medicine. This work should be taken up in all the provincial and regional centres and co-ordinated under the direction of the proposed Central Research Institute. The identification of medicinal plants will be helped to a great extent if a herbarium of properly identified and preserved specimens of all known medicinal plants is established. Such collections already exist in the Forest Research Institute, School of Tropical Medicine, Calcutta, and Drug Research Laboratory, Kashmir.

For the extension of medical relief on rational lines, it is necessary not only to study medicinal plants, but also to cultivate them for obtaining authentic and regular supplies. To do this successfully, a careful survey of these plants is necessary in order to determine suitable localities for their cultivation.

As the existing literature on the subject is scattered and not easily comprehensible to students and practitioners, a proper text-book on *Materia Medica* should be compiled giving all the necessary particulars of different drugs by collecting and sifting all available information.

It is not possible to prepare an Ayurvedic Pharmacopoeia on the lines of Western pharmacopoeias in the absence of the necessary data required for this purpose in connection with drugs.

The Central Research Institute should appoint an Expert Committee to collect data and consolidate it in the form of two lists—one of single important drugs and the other of important compound preparations. This will form the basis of a Pharmacopoeial List of Indian medicine. It should give all the information, regarding the character, method of preparation, dosage, and modes of administration with various vehicles.

As there is great difficulty in securing a supply of genuine drugs for the manu-

facture of standard preparations, it is necessary that (a) collection and distribution of crude drugs be carried out under a Government licence and (b) those who sell crude drugs in the market be licensed and controlled.

A small committee consisting of the representatives of the Industry, Vaidyas, Hakims and a few modern pharmacists should be appointed to examine the requirements of the country in respect of indigenous drugs and finished preparations and suggest how best the control may be exercised.

Certain minimum standards should be laid down regarding the minimum staff, equipment and accommodation necessary for the efficient working of commercial manufacturing firms.

In respect of procuring excisable and poisonous drugs such as opium, ganja alcohol, arsenic, etc., the facilities available to manufacturing firms of Western medicine should be made available to firms preparing Indian medicines.

Course for Pharmacists

Well-trained pharmacists in Indian medicine are essential for making available reliable preparations to the public and the Committee envisaged above should recommend ways and means to start a suitable course for training pharmacists.

The profession of pharmacy relating to Indian medicine should be controlled

by proper registration on the lines of similar legislation enacted for the profession of pharmacy of Western medicine.

The many proposals made by the Committee would naturally involve additional expenditure to the Central and Provincial Governments and the State. The Committee are unable to make detailed recommendations in this regard, but urge that, in the existing health condition of rural India, medical relief should receive a high priority in Provincial budgets.

A liberal Government grant should be given to selected existing educational institutions, for adequate accommodation, equipment and staff. A sum of Rs. 2 to 2½ lakhs as capital expenditure and Rs. 1 to 1½ lakhs are recurring

expenditure should be given to each institution selected for the purpose by a committee to be appointed for the purpose. The total cost will be Rs. 20 to 25 lakhs and the recurring expenditure Rs. 10 to 15 lakhs annually divided among Provinces and States.

The Committee toured all the Provinces and States, and met a large number of practitioners and institutional representatives of the various indigenous and modern systems of medicine in India, and also visited several Indian medical institutions and hospitals run by Government, States and private agencies in the country. The various questionnaires issued by the Committee elicited generous response from all parts of the country.



Vastikarma

By

AYURVEDACHARY M. VISWASWARA SASTRI H. P. I. M.

PROFESSOR COLLEGE OF INDIAN MEDICINE MADRAS.

(Continued from Vol. II, No II.)

As has been already explained the ancient works on Ayurveda devoted several chapters to explain the usefulness and practical application of Vasti Karma in different diseases. Vagbhata, the latest of authors on Ayurveda, has devoted two chapters in Kalpasthana, one dealing with the different diseases and the other explaining the methods of treatments for the various complications that may arise due to improper application of Vasti. I furnish below certain formulae for being tried by physicians in the diseases as indicated.

(1) *Sarva Rogahara Vasti* :—Take Bala, Gudoochi, Triphala, Rasna, Dasamoolam (each one palam) Madana fruits ... 8, Goat's flesh ... 50 Palams.

Add 4 (four) times of water, reduce it to $\frac{1}{2}$ and filter. To that Kashayam, the kalkam of the following drugs namely, Yavani, Madanaphala, Bilva, Kushta, Vacha, Shatapushpa, Musta and Pippali together with Guda (Jaggery) Honey Ghee, Thilam and lavanam are added in prescribed quantities, mixed well, poured into a Vasti Yentra and administered. As regards the quantity of Kalka, Sneha etc, to be added to the Kashaya, general principles enunciated should be adopted. For instance, when a prescription does not tell the quantity of Sneha to be added, it should be $\frac{1}{2}$ of the quantity of Quatha in Vata diseases, $\frac{1}{8}$ in Kapha diseases and $\frac{1}{6}$ in Pitta diseases as well as in health. Similarly Kalkam should be two palams while being administered to a healthy person. At the

time of administration, the fluid should be warm. This Vasti is said to be good for all the healthy persons as it is both Jeevanam and Brhmanam and acts as tonic. It can also be used in all diseases generally.

2 *Vatahara Vasti* :—Take the Kashayam of Dasamoola and goat's flesh duly prepared and add the Kalkam as suggested in the above formula and also any three of the four Snehas to it. This should be administered as Nirooha Vasti and this is said to be useful in reducing Vata.

3 *Vasti for Deepana*, (appetite) Mamsabala (Mascular strength and Netrabala) (Good sight)

Prepare the Kashayam of Bala. Pato-lam, Laghupanchamoolam, Poothee Karanjam, Eranda moola and Yava, taken in equal quantities. Take one Prastham of the above Kashaya, $\frac{1}{2}$ Prastham of the decoction of goat's flesh. mix both together and boil again till the quantity is reduced to one prastham. Then add the filtered Kashaya to the Kalkam of Priyangu Pippali and Musta, Thaila, (Gingelly Oil), Ghee, Honey and Saindhavam and use as Vasti.

Vasti for Vata Sleshma diseases :—Take Erandamoolam and Palasa, each 3 Palams, Laghupanchamoolam, Rasna, Bala, Gudoochi, Aswagandha, Punarnava, Aswagandha, Devadaru. each one palam and Madana fruits eight in number. Add these to 8 Pras-

thams of water, reduce it to $\frac{1}{8}$, filter and then add the kalkam of Vacha, Shata Pushpa, Hapusha, Priyangu, Yasthimadhu, Pippali, Kutajabeejam, Musta and Rasanjanam each 180 grains, honey, gingelly oil and cow's urine. This should be administered as Vasti. It relieves pain in calves, thighs, legs, groins, back, trunk, chest, and anus. Heaviness, constipation, Gulma Ashmari, Anthra Vriddhi, Grahani Arshas and all diseases of Vata-Kapha Origin. The main action of Vasti is Lekhanam and and Deepanam.

Pitta Rogahara Vasti

Take Yashtimadhu, Lodhra, Abhaya Chandanam, Kamalapushpam, Uthpala pushpam, in equal quantities and prepare Kashayam in cow's milk and administer as Vasti adding Sharkara (Sugar) and honey. The fluid should be cold to touch (Suseetham). It is said to be jeevaneeyam (general tonic) also.

Vasti for Mamdagni :—Take Koshatiki, Aragwadha, Devadaru, Moorva, Trikantaka, Kutaja, Arka, Patha, Kulutham, and Brhati. Prepare Kashayam according to Paribhasha. Take 20 palams of the above Kashayam, and add the Kalkam of Sarshapa, Ela, Madhanaphala and Kushta, each one Karsha, Honey, Thailam prepared with Madhanaphalam, Yavaksharam, Gingelly Oil and ghee each 2 Palams; mix all these well and administer as Nirooha Vasti. This is useful in Kapha rogas, Agnimandya and to those patients who have no liking for food.

There is a variety of Nirooha Vastitis known as Mrudu Vasti. This Variety of Vasties contain, Sneha predominantly and they are intended for persons of delicate constitution. They are explained below : (1) *Vatahara Prasrutha*

Vasti: Cow's milk 4 palams, honey, gingelly oil and ghee each 2 palams, mix and churn well together and administer as Vasti. This is not only Vata hara but also increases strength (Bala) and Varna (complexion)

(2) *Panchatikta Vasti*: Take 2 Palams each of the Kashayams of Patola, Nimba, Bhoonimba, Rasna and Saptachada, cow's ghee and the Kalkam of Sarshapa, mix well and give as Vasti. This is useful in Netrabhishyanda (Conjunctivities) Krimiroga, Kushta and Prameha.

(3) *Vasti to Relieve constipation and flatulence* :—

Take 2 Palams each of Gomootra, Thila, Dadhimamda (Supernatant fluid of curd) and Amla Kanjikam, mix with it the kalkam of Sarshapa and then administer as Vasti. This is Malavatanulomanam and Bhedanam.

(4) *Vajeekara Vasti* :—Take 2 Palams each of Ksheerini Kashaya Ikshu Swarasa, Prushni Parni Kashaya, Rasna Kashaya, Vidariswarasa, Honey and ghee. Mix Pippali Kalkam in it and inject into the anus as Vasti.

Some formulae which have been tried by famous physicians and found useful by them are called *Siddha Vastis*. These are certain in their action, free from reaction (after-effects) or troubles or complications and generally bring about Balam and Pushti. They can safely be administered. The most famous of the Siddha Vastis is Madhu Thailika Vasti. Its formula is as follow

Take Honey, and Gingelly Oil in equal quantities. To them add Sindham, one Karsham, Shata Pushpa; Kalkam 2 Karshas. Mix all these in

Erandamoola Kashayam and give as Nirooha Vasti. This is Rasayanam and relieves Prameha, Arsha, Krimi, Gulma and Antra-Vridhhi. If Yashti madhuka Kalkam is also added to the above, it is said to be good for eyes and in Rakta Pitta.

(5) *Yapana Vasti*: Take the kalkam of Musta. Mix it in honey, Gingelly Oil, Mamsarasa and Ghee and administer as Vasti. This is called Yapana Vasti because this can work like retention enema. In this, medicine goes into the Koshtam and there is no harm even if it is not duly expelled. This relieves pain in the anus, lower abdomen, sex-organs, testicles, thighs and calves.

Another formula for Yapana Vasti is to mix 2 Palams each of cow's ghee, honey, Vasa and Thaila and administer as Vasti.

Yukta Madha Vasti: The Kashayam of Eranda moolam, honey, gingelly oil, Saindhavalavana and the Kalkam of Vacha, Pippali and Madanaphala. This is called Yukta Madha because it can be used to any person without any restriction who can go about his usual work as driving a car etc.

Another vasti of this kind is that in which the Kashayam of Erandamoolam and the kalkam of Yashti Madhuka, Vacha, Shatapushpa, Hingu, Sindhava Devadaru, Athivisha and Rasna is mixed and used.

Panchamoola Siddha Vasti is also a tried prescription. In this Maha Panchamoola kashayam, Thailam, Madhu, Saindhava and the Kalkam of Pippali and Yashtimadhuka are mixed and used. All these are called Dosha hara Vastis.

Dwi panchamoola Vasti:—Dasamoola, Triphala, Madanaphala and Bilva are taken in equal quantities and Kashayam is prepared. The filtered Kashaya, the kalkam of Patha, Kutaja Beeja, Musta and Madanaphala with gomoothra, Honey, Thailam (Gingelly Oil), Yavaksharam and Saindhavalavanam are mixed and used. This is useful in all Kapha rogas, Pandu, Visoochi, Shukra bandha, Vata vibandha, and Atopam (Tympanitis).

Mustadi Vasti:—Take Musta, Patha, Gudoochi, Erandamoolam, Bala, Rasna, Punarnava, Manjishta, Aragwadha, Useceram, Pootheekaramjam, Vibheethaki Katukarohini and Laghu panchamoolam each one Palam, Madana fruits 8, prepare Kashayam of these in 4 Prasthams of water reducing it to $\frac{1}{4}$. Filter the Kashaya, add to it 2 Prasthams of cow's milk and decoction of goat's flesh to the extent of $\frac{1}{4}$ the quantity of the above fluid, ghee, honey and Saindhavam and the Kalkam of Yashti Madhuka, Shatapushpa, Shyamatrivruth, Kutaja beejam and Rasanjanam. Mix all these well and use as Vasti after it is duly warmed. This will increase the strength of Agni, Shukram, etc., relieves pain and acts as Rasayanam.

Vatahara Nirooha Vasti:—Prepare Kashayam of the flesh of small animals and Dasamoola, filter and add the Kalkam of Hapusha, Shatapushpa and Musta with Mahasneham (All the four snehas) and use. It is said to be very good in increasing semen.

Vajeekarana Nirooha Vasti:—Take the flesh of pea-cock, Laghu panchamoolam, each one palam, eight prasthams of milk and 8 Prasthams of water and prepare Kashayam reducing it to the quantity of the milk added. To that Ghee, honey and the kalkam of Vidari,

Pippali, Yashtimadhuka, Shatapushpa and Madana phalam and a little Saindhavam may be added. This is very good in increasing general strength and semen. Similar vastis may be given with the mamsam of Tittiri birds, Vishkara birds and of other big and small animals as well as fish and Jala charas. While using the fish, milk should be avoided.

Rasayana Vasti:—Take the meat of Godha Nakula (Mongoose), Marjala (Cat) (Shalyaka) Vumdu (Bandicoot) each 10 palams. Maha panchamoola 10 Palams and make Kashayam in milk and add to it the Kalkam of Madana Phala, Pippali along with Saindhava and Sowarchalavanam, Sugar, Gingelly Oil, Honey and Cow's Ghee. Mix all these well and use as Vasti. This is said to bring about immediate strength to the system. As regards the diet during the administration of this Vasti treatment, milk boiled with Kapikatchu and Ikshra may be used with rice or other forms of food which is easily digestible.

Sneha Vasti:—A few formulas of Sneha Vasti are given below which may be used without much dietetic and other restrictions.

Dasamoola, Bala, Rasna, Aswagandha, Punarnava, Gudoochi, Eranda, Bhootheka, Bhrngi, Vasa, Rohisham, Shatavari, Sahachara, Kakanasa, each one palam.

Yava, Masha, Athasi, Badaribeeja, Kulutha, each 2 Palams.

These should be added to one dronams of water and reduced to $\frac{1}{4}$. The filtered Kashaya, 4 Prasthams of Thilam and the Kalkam of Jeevaneeya guna (each one palam) are added and Thailam pre-

pared. This thailam may be used for Anuvasana Vasti for all Vata diseases.

(2) Similarly the mamsarasa (Fat extracted from the muscles of Anoopam Jamtha boiled with Jeevaneeya guna dravyas) may be used in the same purpose.

(3) Shatapushpa—Chiribilva and Amla Kanjikam—These three are used in the preparation of Thailam which can be used for Anuvasana Vasti for the same purpose.

(4) Cow's Ghee heated by adding well fried (Agnivarna) pieces of sindhu lavana (Rock Salt) can be used as Anuvasana Vasti in Vata diseases.

(5) Jeevanthi—Madana Phalam, Meda-Hapusha — Yashtimadhukam — Bala—Shatapushpa—Rishabhakam—Pippali—Kakanasa—Satavari — Kapi kacchu — Ksheera Kakoli—Karkataka srungi—Kachoram and Vacha. Take all these in equal quantities, make into a soft Kalkam and add that to Thailam and Ghritam which should be 4 times the quantity of the Kalkam and Cow's milk which should be 4 times to Sneha. Prepare Thailam and use for Anuvasana Vasti. This is Brmhanam—Vatapittaharam, increases strength, semen and Agni, cures the diseases relating to Shukram and Shonitham. This Vasti is also named as Puthriyam meaning that it is good in sterility and aids conception.

Saindhavam — Madana Phalam — Kushtam—Shatapushpa—Vacha—Bhokadamba—Hribera—Yashtimadhuka—Bhrngi — Devadaru — Katphalam — Vidangam—Athivisha — Renuka—Shariba (Krishna) Neelini—Prisniparni—Bilvam Ajamodam — Pippali — Danthi—Rasna, Take all these in equal quantities, prepare

Kalkam and Kashayam of them. Prepare Thailam by adding Erandathailam or Gingelly Oil and use as Anuvasana Vasti. This is useful in Anthra Vriddhi—Udavartham -- Gulmam—Arsas—Pleeha Vriddhi Meha—Amavata—Anaha and Ashmari.

This can be given in Kapaha rogas also.

(7) Thailam prepared with either Maha pamchamoola, Bilvadi gana or other Kapa hara drugs and Madana Phala with Amla Kamjikam (eight times) will be useful for Anuvasana Vasti in in Kapa rogas.

Principles to be observed in the use of Vasti

(1) When Mrudu Vasti is given and if it does not come out a theekshna Vasti may be given for its expulsion. If a theekshna Vasti does not come out and remains in the Koshtam irritating the place, a Mrudu Vasti which is Snighdha, Madhura and Seethala may be given.

Nature of Theekshna and Mrudu Vastis

Theekshna Vasti generally contains gomootra, Peelu, chitraka, Lavana, Kshara and Sarshapa which cause first stimulation and then irritation to Koshtam.

Mrudu Vasti contains mostly Ghrita Ksheera etc., which soothe and nourishes the Koshtam.

The Vasti medicine should be seetha (cold) to touch in ushna diseases while to those suffering from excessive cold the vasti medicine should be warm (Sukho-shna).

In diseases requiring shodhanam, a Brmhana should never be given. Similarly it is contraindicated in fatty individuals and to those suffering from Kushtam and Meham. Shodhana Vasti should not be given to persons who are weak, emaciated, who are prone to faintings and in whom there is excessive Dosha requiring removal by other forms of Shodhana.

Hence when a Vasti is to be given, the Physician should carefully see that the drugs used in the Vasti are indicated for use in that particular disease and also the Balam, Kalam, Rogam, Dosham and Prakrithi of the patient.

Vastivyapat.

Ayurvedic texts describe in detail the Various complications that may arise due to improper application of Vasti under Vasti Vyapat and the treatment of such complications is named Vasti—Vyapat—Siddhi. The improper application of Vasti mentioned above may be due to the administration of a vasti medicine when there is no indication for it or when there is contraindication for the same. In addition, the strength of the medicine, the matra or the quantity of it, and excessive or insufficient administration of Vasti also have a great bearing on the production of these complications.

They are dealt with below:

(1) When a Vasti which is seetha (Cold) alpasneha and alpa lavana or thick in consistancy is administered to a person who is not duly prepared for Vasti by proper Sneham and Swedanam or to a person whose Koshtam is (Rooksha Kroora Koshta) it leads to the obstruction of Vatam, Mootram and pureesham, pain at the umbilicus and lower portion of the abdomen, burning sensation, heaviness at the heart, swelling at the anus

itching sensation, loss of appetite, due to Hinayogam, and improper action of the Vasti in not being able to expel the doshas and by disturbing them. In such cases, the remedy is to give Kashayams like Bootheeka Pippalyadi Bilva, Dhankadi recommended in Athisara with Madhupradesha. The Kashayam should be warm at the time of use. Application of Phalavarti, Sweda karma and Rechanam in due time are also indicated. Decoctions of Bilva moola, Trivruth, Devadaru, Yava, Kolam, and Kulutham mixed with Sura etc., may be used as vasti.

(2) If the Vasti is given which is alpa veerya, to a person in whom there is excessive Dosha, Rookshatva (Kroora, Koshtam,) the medicines injected will first get obstructed by the Doshas which in turn obstruct the Vata margam. By this, Vata will become prathiloma and causes adhmanam (Flatulence) pain in the marma areas Vidaha in Gudam and Koshtam, pain in the scrotum and groin, tightness in the chest and pain all over the body. When these symptoms appear, the patient should be given Snehabhyamgam and Swedanam. Application of Vasti is also indicated. Bilvadi kashayam said above may be used for Nirooha Vasti adding Peelu, Sarshapa, and gomootram to the Kashayam. Then an Anuvasana Vasti with a Thailam prepared with Saraladaru and Devadaru is good

(3) When a Vasti is given either in a large quantity or with insufficient Sneham and lavanam or with little

Mrudu Oushadha or if the patient obstructs the Vegam of the Vasti when it moves to go out, the patient gets certain complications as Moorcha (fainting) Hrilasa (Nausea, thirst, burning sensation etc.

When Moorcha occurs sprinkling of cold water on the face and fanning till the patient recovers is good. The Patient's back, sides and abdomen should be mildly massaged downwards. If the vasti medicine does not return in time, the patient may even be frightened. Moving the patient for a few seconds, sometimes bring about normal consciousness. By this the Prana and Udana Vayus are obstructed and the Apana Vata is pushed down into its own way. The Apana Vayu so pushed down will expel the Vasti medicine. Oral administration of the Kalkam of Kushtam and Kramuka with Amla fluid (Sour) like Kanjikam, is also good. It has Ushna Veerya, Theekshna guna and Saratwa. By these properties, it causes Anulomanam for the Vasti. As an alternative gomootram, Trivruth and Pathya Kalkam may be mixed well and given orally.

When the medicine is in Pakva-shaya, Swedanam and Nirooha Vasti with Dasamoola kashayam will be useful. When the above Vasti does not act the following Vasti is recommended.

Take Yava, Kola and Kulutha make Kashayam with gomootram and use for Vasti or

Take Amrita, tender leaves of bamboo Pootheekaranja, twak; taleesa patram, Shati, Devadaru, Rohisha truna and add gomootra to them prepare Kashayam and use it for Vasti mixings Thailam, Gudam and Sindhavam and the Thailam of Virechana dravyas.

If the symptoms relating to chest as pain, tightness etc., occur, the dosha may be taken to be present in uras and a vasti with Bilvadi gana and Pancha moola Kashayam may be given to relieve it.

Similarly if the symptoms relating to head as heaviness, pain etc., are found dosha may be taken to be present in the head and lepam with Sarshapa seeds is recommend for the head.

(4) When the dosha is less and Koshtam Mrudu, if a vasti with excessive ushna, Theekshna, Amla and guru (Ghaana) dravyas is used or if sweda Karma is done in excess, the patient will suffer from Athiyoga and symptoms like pain in the abdomen will develop. In such cases treatment as indicated in Athiyogam of Virechanams should be adopted.

(5) If a Vasti with Kshara, Amla, ushna, theekshna gunas and lavana rasa are used to a patient suffering from excessive pitta, it will cause Daham and irritation in the anal area and Haemorrhage as well as other discharges of different colours and even pitta may ooze out. If too much of blood is lost, patient becomes unconscious and there Raktapitta chikitsa should be done. Yavagu with Sharkara is good. Masha yoosham, *Dadhi Sura* etc., are also indicated.

The above are the complications pertaining to Nirooha vasti. The complications relating to Anuvasana Vasti are given below:—

(1) If an Anuvasana Vasti which is seetha (Cold) to touch or alpam is given in Vata roga or when an Athyushna Vasti (excessively hot) is given in pitta or a Mrudu Vasti in Kapha roga or a Vasti which is not sufficiently strong to act properly is given after over heating or in excessive constipation, the medicinal fluid that enters the Koshtam will be obstructed by the contents of Koshta and cause sthambha, Adhmana, jwara, etc. In such cases a Nirooha

Vasti with Gomootra, Panchamoola, Rasna, Soweera. Sura, Kola, Kulutha, and yava containing Snigdha, Amla and lavana properties may be given for the expulsion of the medicine. An Anuvasana Vasti with a Thailam prepared with Rasna and daru-nisa may be given after food in evenings.

(2) When Vasti is obstructed by pitta in Koshtam, it causes Thirst, burning sensation, Moham, Jwaram etc., and a Vasti with Madhura and Thikta Rasas will alleviate the condition.

(3) When Vasti is obstructed by sleshma in Koshtam, drowsiness, fever with cold, heaviness, loss of taste, Moorchha and glani are caused and a vasti prepared with Kashaya, Dravyas, Thikta, Katu, dravyas, sura, gomootram, Madanaphalam, Thailam and Amla dravyas will expel the retained Vasti and gives relief.

(4) When Vasti is obstructed by food, chardi, Moorchha, Anaha glani, soola, Nidra, and other Ama symptoms will be seen.

To relieve this condition, Ahara Pachanam should be done by the administration of Kwathams and choornams containing Katu and lavana rasams. A mild purgative is also recommended. Amaharana is the object of the treatment.

5 When Anuvasana Vasti is obstructed by Pureesha, obstruction to Mootra, Malam and Vatam is caused together with Guruthvam in the abdomen, Adhmanam and Hridgraha. To relieve this condition, sneham, swedam, Nirooha Vasti with Shyama and Bilvadi gana and Anuvasana Vasti with the same drugs are recommended. All the treatment should be directed to-

wards the relief of udanatha. Once it is relieved, the fluid comes out.

6 If Anuvasana Vasti is given on empty stomach and when there is swelling in the anus or when the patient is on liquid diet, the sneham enters into the Srotas and goes upwards towards the upper part of the body. For the easy return of the fluid a Vasti with gomootram, Kwadhams of Shyama Trivruth, Yava, Kola and Kulutha with Thailam may be given.

7 Thailam used in Vasti should always be a pakvasneha (medicated oil) if by mistake an apakva sneha (Raw Oil) is used, that gives a sort of coating to the intestine and causes thirst, moha Kandu and sophia. For a theekshna Vasti with a thailam prepared in Arka patra swarasam should be used.

8 Before giving Vasti the level of the fluid should be brought to the tip of the nozzle so that no air is injected into the Kostam. If by mistake air is injected either at the commencement of the Vasti or if the whole of the fluid in the Vasti is pressed into the Koshtam when also some air may likely to get in

it causes pain in the abdomen. Then Abhyamgam and Swedam are to be adopted. The food should be comprised of Vatahara constituents.

9 If Vasti is pressed suddenly and quickly or if the Vasti netra is suddenly raised upwards, Vata getting vitiated, causes pain in the Kati, guda, jamgha, uru, and lower abdomen. Then Vatahara foods, swedam, Abhyamgam and Vasti are indicated.

(10) During Vasti Karma (process of injection of fluid into the rectum, if the Vasti yatantra is suddenly dropped down Vata getting vitiated causes pain in the chest and head and weakness in the thighs. To relieve this condition a Vasti with Bilvadi gana, Madana Phala Shyama Trivruth etc., and gomootram should be used. If much of fluid is injected and if it does not come out Theekshana Vasti and Virechanam are recommended.

The above are some of the complications and it is necessary for a physician to know them.

"The Science and The Art of Indian Medicine"

BY

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"Remember Three Things"

H.E. Sri C. Rajagopalachari, Governor of West Bengal and Governor-General-designate, was given a farewell ovation by members of the Bangiya Ayurveda Mahasabha at Government House, Calcutta, to-day, (17-6-48).

Replying to their address, Mr. Rajagopalachari referred to the "superstition and prejudice even among the modern medical practitioners" and said ;

"Truth and Science are one. There can be no competition between truth and truth, but only between truth and error. I would, therefore, entreat you to remember three things, one is to demand and not to oppose high standard of education and equipment and careful selection in admitting students to your colleges for courses in medicine. The other is to include modern scientific knowledge alongside of our traditional Ayurveda in your institutions so that Truth may run in a single course and prejudice and ignorance vanish to the minimum point. Thirdly, scientific research should be encouraged and there should be no opposition but full co-operation in this between the Western doctors and the learned Kabirajas.

A.P.I., ("The Hindu" 19th June 1948.)

The Thesis

Many and varied have been the objections that have been raised, from time to time, against the recognition and encouragement by the State of the indigenous systems of medicine like the Ayurveda, the Siddha and the Unani; these objections have always been challenged by exponents of these systems as well as by others interested in their promotion; the resulting controversy has sometimes been mild and sometimes wild; some of the objections are trivial while others are vital; and round none has the fire of controversy raged so fiercely as on the central question whether these Indian systems of medicine are scientific or not. The object of this memorandum is to view things from a scientific standpoint and stimulate scientific discussion on a subject which, it is clear, can now be neither ignored nor shelved.

It is perhaps just as well that I state at the very outset the conclusions, which I have formed from such study of the Indian systems as I have been able to make, so that it may be known beforehand what it is that I am striving to elaborate in this Memorandum. I have studied these systems from the two standpoints from which every system

of medicine has to be judged; viz., (1) as a Science and (2) as an Art; and my conclusions may be briefly summed up as under :

(1) *As a Science*.—The Indian systems are undoubtedly scientific; their general principle and theories (both in subjects of preliminary scientific study like Physics, Physiology and the like, as also in the subject of Medical Science proper, like Pathology, Medicine and so on) are quite rational and scientific.

(2) *As an Art*.—As practised at present, Indian systems are not self-sufficient. If we divide Medical Science broadly into two sections, viz., Medicine and Surgery, the Indian systems are in the main, self-sufficient in Medicine, while in Surgery they are not.

In both Science and Art, there are points which Indian and European systems can well learn from each other with immense profit to both; that they may so fraternise and learn is a consummation devoutly to be wished, not only in the best interests of science but also of what is even more important than science itself, viz., suffering humanity.

Such is my thesis, which I now proceed to develop, under the following headings :

(1) Scientific methodology.—Pratyaksha and Anumana.

(2) Subjects of preliminary scientific study—the Panchabhuta Theory.

(3) Physiology and Anatomy—the Thri-dhatu Theory.

(4) Aetiology and Pathology—the Thri-dosha Theory.

(5) Pharmacology—the Rasa-Guna-Veerya-Vipaka-Prabhava Theory.

(6) Diagnosis and treatment—Application of Thridosha Theory.

(7) Indian systems judged from the standpoint of Art.

Scientific Methodology.

The Ayurveda, the Siddha and the Unani—their Mutual Relationship.

As stated at the outset, it is round the question whether or not the Indian systems have any scientific methodology at all that there has been a good deal of controversy. If we are to return any precise and definite answer to this question, we must first be clear as to what we exactly mean by "science" and "scientific method"; for, in the past, a good deal of confusion has been caused by failure to settle this preliminary point and discussions have been carried on with little mutual understanding on the part of the controversialists. Hence it becomes necessary to inquire whether the European and the Indian methods of investigation have any common foundations or Criteria of belief, to which both of them can appeal to test the validity of any fact or proposition that is at issue; to this end I propose first to lay down in broad outline the essentials of scientific method as pursued by both the Western and the Hindu scientists, and then proceed to show that both have common foundations and a common platform where both can profitably meet and learn from each other.

Regarding the methodology followed in the Unani system, I regret I cannot speak from first-hand knowledge, for I know neither Arabic, Persian nor even Urdu, and it would be unwise in so important a matter to rely solely on translations. I have, however, the high authority of the renowned Janab Hakim Ajmal Khan Bahadur of Delhi to say that Arabic medicine was founded on Ayurveda¹. As regards the Siddha system, its fundamental bases such as

¹ Vide the publication entitled "The Scheme of the Ayurvedic and Unani Tibbi College, Delhi", and appendix A attached thereto.

* By Courtesy of the Govt. of Madras.

the Thri-dhatu Physiology and the Thri dosha Pathology are common ground between it and Ayurveda. Hence it is submitted that though in the following discussion of the scientific bases and methodology of the Indian systems, it is Ayurveda that is mostly referred to, yet we may take it that, so far as the present topic is concerned, what applies to Ayurveda applies generally to the Siddha and the Unani systems as well.

The Essentials of the Western Scientific Method.

Some people are in the habit of talking of the scientific method as though it were extraordinarily recondite, knowable only to the elect and the very high in intellect. While this is certainly true of the higher reaches of science, yet there is nothing extraordinarily mystic about the general conception of the scientific method which even the novice cannot appreciate if he wants to; its essential characteristic is a particular intellectual attitude towards any problem that may come up for solution, whether it be a problem in mathematics, physics, economics, aesthetics, education, law, medicine, engineering, state-craft, handicraft, or any other branch of knowledge. Many people in the world may be applying the scientific method in their daily round of duty without their being aware of it. "We may get a good lesson in scientific method from a lawyer sifting evidence or from a statesman framing a constructive bill".¹ "The man who classifies facts of any kind whatever, who sees their mutual relations and describes their sequences is applying the scientific method and is a man of science."² What science demands

from its votaries is a severe discipline in the habitual use of the keen eye, the sharpened intellect and the trained mind. The all-observing keen eye of the scientist helps him to observe widely and collect together as many facts as he can gather. This is often a very laborious process. The sharpened intellect, playing upon the facts so gathered, carefully analyses and catalogues them under certain categories. These categories, viewed from a synthetic standpoint, suggest certain generalizations which include all the facts or phenomena so far observed. The trained mind brooding upon these generalizations evolves a hypothesis, or may be, more than one hypothesis, in explanation of, and based on, these observed facts or phenomena. Now, every such hypothesis is merely a claim waiting to be verified; but the claim may or may not be accepted. Experiments are undertaken to test the validity of these hypotheses. All those which are not verified or found valid by experiments are rejected. That hypothesis alone which is shown by experiments to work best, becomes the accepted theory, which, be it noted, is nothing more than the best working hypothesis, among perhaps several that may have been advanced; moreover, its acceptance is merely tentative or provisional, contingent not only on the continued occurrence of verifactory phenomena but also on similar non-occurrence of contrary ones; for, there is really no finality in science; and the scientific method is essentially a hypothetical or experimental method of trial and error. "It treats all 'facts' as data to be tested, all 'principles' as working hypothesis to be confirmed, all 'truths' as claims to be verified. All allegations, therefore, must be tested, and are valued according to the scientific consequences to which they lead. In all this, a vivid

imagination is a most precious gift provided it is strictly controlled by rigid logic and crucial experimentation. At the outset, therefore, scientific method is content with provisional conclusions that are not greatly trusted; and to the end, it is recognized that the human mind does not respond to the infinite gradations of logical probability, but declares itself satisfied and certain, as soon as the evidence for a belief seems to it adequate. After that, the question is humanly settled unless and until something occurs to reopen it. For, there is no absolute *chose jugée* in science'. Science then is merely "criticised, systematised and generalized knowledge; that is to say, the student of science takes more pains than the man in the street does to get at the facts, he is not content with sporadic knowledge but will have as large a body of facts as he can get; he systematises these data and his inference from them, and sums up in a generalisation or formula. In all this, he observes certain logical processes, certain orders of inference, and we call this, "the scientific method."

"Of such modes of inference there are no more than there were in the days of Aristotle, who recognized three (a) from particular to particular (analogical reasoning), (b) from particular to general (inductive reasoning), (c) from general to particular (deductive reasoning). Let us take a few examples.

(a) *Analogical Reasoning*:—The geologist tells us the story of the making of the earth and describes what happened millions of years ago, and in many cases he relies on analogical reasoning.

(b) *Inductive Reasoning*.—This is argument from particulars to the uni-

versal, and science is full of illustrations. Galileo had smooth inclined planes made and then, by rolling balls down them and measuring the time and squares of descent, he discovered inductively that the space fallen is always as the square or the time of falling.

"The inductive method may almost be called Baconian; for Bacon was the first to show that the sound way of studying Nature was to work up from particulars to principles. He called his method the 'new instrument'—the *Novum Organum*. It was founded on the principle that things, which are always present, absent, or varying together, are causally connected.

(c) *Deductive Reasoning*.—This is argument from the universal to particulars, the kind of inference which enables the long arm of science to reach, back through the ages that are past, and forward into those which are to come. By deductions, Neptune was discovered before it was seen. By deduction, given three good observations of a passing comet, we can predict its return to a night."

Comparison with the Hindu Scientific Method.

According to Hindu Methodologists, the process of 'ascertainment of truth' depends on the correct understanding of our sources of valid knowledge (i.e., *pramanas* or proofs) which are as follows: (1) *Prathyaksha* or direct observation and perception, (2) *Anumana* or logical inferential reasoning of the nature of induction and deduction and (3) *Shabda* (*Aphavachanam*) or competent testimony of 'knowers of the Vedas,' or the revealed scriptures generally.

¹ *Introduction to Science* by Thomson—Home University Library, page 58.

² Karl Pearson—*Grammar of Science* (3rd edition) Part 1, page 12.

¹ Professor Schiller in *Psychic Research Quarterly*—Volume 1, page 12-13.

¹ *Introduction to science*—Thomson, Page 58-61 (Home University Library.)

[This is according to the Sankhya school of thought. It is only right to add that the Nyaya (logic) adds a fourth source of valid knowledge namely Upamana (or analogy or comparison) while the Mimamsa (exegetics) has two more still, namely, Arthapatti and Asambhava (Presumption and Privation); but I proceed here on the view that the threefold Sankhya division includes, in itself, both the fourfold Nyaya and sixfold Mimamsa divisions.]

If we now compare the inductive (Baconian) and deductive methods of the West with the scientific method of Anumana, as practised by the Hindus, we find a striking similarity; for, what is Anumana? 'Anumana (inference) is the process of ascertaining, not by perception or direct observation, but through the instrumentality or medium of a mark, that a thing possesses a certain character. Inference is therefore based on the establishment of an invariable concomitance (Vyapatti) between the mark and the character inferred.'¹ But how is this Vyapti or invariable concomitance to be ascertained? This is done exactly as it is done by Western scientists, that is to say, by means of observations and experiments, thoroughly checked and tested by the canons of strict scientific Logic. "The observation of agreement in presence (Anvaya) as well as agreement in absence (Vyatireka) between two phenomena, with the non-observation of the contrary (Vyabhi-charadarshanam) is the foundation of our knowledge of Vyapti. Obviously, mere observation of their agreement in presence and their agreement in absence is no help in the matter. Take a concrete example. The ass is customarily employed to bring the fuel with which fire is lighted. In a hundred cases you

have observed the ass among the antecedents of smoke. In a hundred cases you may have observed that when there is no ass there is no smoke. This is no warrant for concluding a relation of cause and effect between an ass and smoke. It may be that you happen to have never observed smoke without an antecedent ass, or an ass without smoke following. Even this is of no avail. It is not agreement (unbroken and uniform though it be) in presence or in absence or in both, that can settle the matter. There is one and only one way of ascertaining the causal relation. Suppose A with certain accompaniments is found to precede B immediately. Now, if A disappearing, B disappears, even though all other antecedents remain and there is no other change in the case, then and then only can the causal relation be ascertained. But this does not establish the unconditionality of the concomitance which is essential to a Vyapti. We, have therefore, to examine the cases carefully to see if there is any determining condition (Upadhi, i.e., some hidden or undetected but really operative or indispensable accompaniment) which conditions the relation between the supposed sign or mark (Gamaka) and the supposed signate (thing signified) (Gamyaka). Every one of the accompanying circumstances (of course the likely ones) may be taken successively, and it may be shown that the concomitance continues even when the suspected Upadhi (Shankitopadhi) is absent, and therefore it cannot be the Upadhi. And this is to be fortified by the observation of uniform and interrupted agreement in absence (Vyatireka) between the two concomitant phenomena. In this way, when we have disproved all suspected Upadhis, we conclude by establishing the Vyapti. It is true that we may still go on doubting; but doubt has a certain limit for the 'experimenter' and the

thinking person (Pareekshaka, Prekshavan). When doubt overthrows the foundation of all rational practice or leads to a stoppage or arrest of all practical activity, it stands *ipso facto* condemned, and must be abandoned. Thus it is that Vyapti is ascertained. In this way we observe innumerable instances of Vyapti. Now, by means of repeated observations of this kind (Bhuyo Darshana) we have established the principle of the Uniformity of Nature (Swabhava pratibandha) and also of Causality (Karyakaranabhava); and these two principles thus ascertained may be made use of in their turn as the basis of an argumentation or deduction (Tarka, Uha) to confirm a particular Vyapti in a particular case. Tarka or Uha, then, is the verification and vindication of particular inductions by the application of the general principles of uniformity of Nature and of Causality, principles which are themselves based on repeated observation and the ascertainment of innumerable particular inductions of uniformity or causality. Thus Tarka also helps in dispelling doubt."¹ Students of Western scientific methods cannot fail to notice the close resemblance between the above methods and those designated by Mill as 'The Joint Method' and 'The Method of Residues'; if, further, we consider also Mill's 'Methods of Concomitant Variations' and compare the Western Method with what the Hindus call the 'Panchakarani', the resemblances become even more striking; the Panchakarani is illustrated thus: "The following changes being observed, everything else remaining constant, the relation of cause and effect is rigorously established. First step—the 'cause' and 'effect' phenomena are both unperceived. Second step—then the 'cause' phenomenon is perceived.

Third step—then, in immediate succession, the 'effect' phenomenon is perceived. Fourth step—then the 'cause' Phenomenon is sublated or disappears. Fifth step—then, in immediate succession, the 'effect' phenomenon disappears. Throughout, of course, it is assumed that the other circumstances remain the same (at least the relevant or material circumstances)."² The student of the Physical Sciences cannot fail to notice its general resemblance to the Baconian Inductive principle that, if things are, in experience, found to be present, absent or varying together, they are, in all probability, causally connected; only, what the one following Mill, would call 'the Law of Agreement, difference and concomitant variation,' the other would call the Panchakarani, because the conclusion is reached by Pancha (or five) steps. "This Panchakarani, the Joint Method of difference, has some advantages over J. S. Mill's method of difference, or what is identical therewith, the earlier Buddhist Method; and the form of the canon, bringing out in prominent relief the unconditionality and the immediateness of the antecedence, is as superior from a theoretical point of view to J. S. Mill's canon, and is as much more consonant than the latter, to the practice of every experimenter, as the Hindu analysis of Anumana as a Formal-Material Deductive Inductive inference is more comprehensive and more scientific than Aristotle's or Mill's Analysis of the Syllogism (or mediate inference); for the Hindu inference (Anumana) is neither merely formal nor merely material, but a combined Formal-Material Deductive-Inductive process. It is neither the Aristotelian Syllogism (Formal-Deductive process), nor Mill's Induction (Material-inductive process), but the real inference which must combine formal validity

¹ See—*The Positive Science of the Hindus* (1915 edition), page 250.

¹ See—*The Positive Sciences of the Hindus* (1915 edition), pages 256—57, 276-77.

² Ibid pages 258—59.

with material truth, inductive generalization with deductive particularization."¹ Such then is the Hindu scientific method. I see much of common ground between the two systems of scientific methodology; the Hindu method of Pratyaksha (or direct perception) has its analogue in the observational method of our Western brethren; so too, as has been discussed before, the method of Anumana has its analogue in the Western methods of Logical Inferential Reasoning of the Nature of Analogy, Deduction and Induction (Baconian Method). He who goes through the works of the master-minds among both Eastern and Western scientists, finds that there is a striking resemblance in their intellectual attitude towards problems that presented themselves before them; it is an attitude characterized by accurate observation (Darshana and Bhuyodarshana), precise description, correct classification, patient experimentation (Pareeksha), rigid reasoning (Yukti Yuktam), careful verification (Nirnaya), institution where necessary of crucial test (Vinigamaka), and above all, that supreme faculty of analytico-synthetical imagination (Buddhi) that can see the one connecting law running through the whole range of a mass of apparently unconnected phenomena and enable the Newtons of all times to take their gigantic leaps 'from the falling apple to the falling moon'. "An isolated fact", says Henri Poincare, "can be observed by all eyes—by those of the ordinary person as well as of the wise. But it is the true physicist alone who may see the bond which unites several facts among which the relationship is made, though obscure. The story of Newton's apple is probably not true. But it is symbolical. So, let us think of it as true. Well, we must believe that many before Newton had seen apples

¹ See—*The Positive Sciences of the Hindus*, Pages 290-1.

fall, but they made no deduction. Facts are sterile until there are minds capable of choosing between them and discerning those which conceal something and recognizing that which is concealed—minds which, under the bare fact, see the 'soul' of the fact. Now the methods by which thinkers, both in the East and in the West, have tried to see, 'under the bare fact, the soul of the fact' are fundamentally similar, although one calls it by the name of Anumana, while the other labels it as the method of Deduction and Induction (Baconian); that is only a difference in name—not in essence.

The Limitations of All Scientific Methods.

Then again there is fundamental agreement as regards the essential limitations of these scientific methods; both agree that Pratyaksha (or direct observations and appearances) frequently deceive us. The use of such a term like the 'ultra-microscope', for example, must remind us that the range of our senses is distinctly limited, even when aided by instruments of marvellous power and precision. We have 'light' whose brightness is too high for range of perception of our eye. So in the midst of the most intense 'light' we may be in utter darkness. We have 'sounds' whose vibrations are beyond the range of perception of our ear; and so, in the midst of the most powerful 'sounds' we may be stone-deaf. It is therefore a well-recognized fact both in the East and the West, that, for the ascertainment of truth, direct perception does not take us very far. Hence, people have everywhere turned to experimental and hypothetical methods of logical inferential reasoning, with a view to add to, or correct the knowledge gained by direct perception. Thus, the sense-impressions regarding, the fixity of the earth, and movement of the sun round

it are corrected by an elaborate process of reasoning which leads to the conclusion that it is really the sun that is relatively fixed and the earth that moves round it; so too, the very familiar optical illusions of our everyday life such as the apparent increase in the size of the sun and moon when at the horizon than when at the zenith, the apparent rising and setting of the stars, and such other phenomena, are other instances of how the senses deceive us, and how often things are not really what they seem. Both are also agreed that all the three scientific methods so far discussed, viz., Analogy, Induction and Deduction are themselves not free from possible errors. The method of analogy that has done so much to illumine many dark abysses, specially in Geology, and Biology may be vitiated by some vital differences between the two sets of conditions compared. "Logical inferential reasoning, in both its aspects (induction and deduction) can never get rid of doubt as to the absolute truth and soundness of its conclusions, as the late Lord Balfour showed in his *Defence of Philosophical Doubt*. Deduction depends on the validity of its premises, axioms, and postulates, and on the perfect subtleness and strength of the reasoning powers. Induction, unless we have an infinite number of facts and an infinite mental capacity to comprehend all such facts, cannot also give us the exact truth. An inductive conclusion, though based on a million instances, becomes wrong if one single instance to the contrary is clearly proved to exist, and a higher law which would explain and include the single contrary instance also has to be searched for".

It is essential that these limitations of the scientific method must be specially emphasized, as extravagant expectations still continue to be enter-

tained regarding its possible achievements; and that, not only by the public at large, but, as was pointed out by Prof. Schiller, by professed logicians also. "The public still believes" he says, "that mathematical demonstration is the *ne plus ultra* of cogency, though modern mathematicians are under no such illusion. They understand that it has only the hypothetical certainty of a coherent system of resummptions and the practical value of a well-chosen one"¹ Different minds are differently constituted, some being influenced more by the first of these two considerations, while others are more influenced by the second. To some people—the Pragmatists, for example—the most satisfactory testimony for truth is not so much its logical consistency as its utility and practical application to reality. "Truth is what works" is their great manthram. To some minds, however, the most satisfactory testimony for truth is its logical consistency; they accept that proposition as the best which, to them, has the logical certainty of a coherent system of assumptions. This will perhaps explain in some measure why, ever since the dawn of history, there have been sects in medicine as in every other science and there have been bitter quarrels among them. "The quarrels of doctors" says Osler, "make a pretty chapter in the history of medicine. Each generation seems to have had its own. The Coans and the Cnidians, the Arabians and the Galenists, the Brunonians and the Broussonians, the Homeopaths and the Regulars, have in different centuries rent the robe of Æsculapius." Can we not do better than add one more quarrel to this dismal list? Wherever knowledge is imperfect, as it undoubtedly is in medicine, differences of views are inevitable.

(To be Continued)

¹ *Psychic Research Quarterly*. Volume 1, page 9.

Care Of The Old

By

DR. AHMED HUSSAIN, I. I. M.

*Adopted from Al-Khanoon of Boo All Ibne Seena
Translated and Edited*

The period of life after the 60th year until death is oldage according to Unani view point. During this period attention is to be paid to the following:- I. *General upkeep* II. *Diet*, III. *Use of Alcohol*, IV. *Removal of Obstructions* V. *Massage*, and VI. *Exercise*.

1. *General up keep of the old.* To maintain health in oldage, food and drink that create moistness and are heat producing (energy giving) are to be used. Old persons should remain in bed for longer hours.

Diuretics are to be given to old people frequently. Balgham-khabham-formation in their stomach is to be corrected and removed by way of kidneys and when it has formed, it is to be removed by way of intestines. The alimentary tract in old people should be kept soft-constipation to be avoided.

Massage with oil on the abdomen is also helpful to regulate the bowels. The force and duration of massage should be moderate. If massage does not agree WALKING can be resorted to. If walk creates exhaustion, a ride on horse back may be tried. In very weak old people, massage can be given morning and evening.

Old people should always use Sweet smelling scents and must use them constantly. The scent should be moderate in its temperament; not smelling strong.

After a sound sleep and rest, massage is to be done with oil. After massage, a ride on horse back or walk is helpful. Bath to be taken after sufficient rest.

II. *Diet*:-Old people should take small quantities of food several times a day, in view of their impaired digestive powers. Early in the day bread soaked in honey is to be given. Later after bath, some food that has laxative effect is to be given. For the rest of the day the usual food can be given but in early evening he should have a food that forms GOOD QUALITY CHYLE when taken in very small quantity.

Food varieties according to Unani are three and each variety has three degrees as under:-

- | | |
|-------------------------|---|
| 1. Nutrition value | (i) High
(ii) Moderate
(iii) Low |
| 2. Quality of Chyle | (i) Good
(ii) Moderate
(iii) Low |
| 3. Quantity requirement | (i) Large
(ii) Moderate
(iii) Small |

The food administered to old people should be-(i) High in Nutrition Value, (ii) Producing Good Quality of Chyle, (iii) Quantity required of that food being small.

When presence of Balghami (Khapham) matter is established liquifying diet and drugs are to be used (a mild variety of resolvents of abnormal matter). When the body is cleared off of this matter, moistness creating food is to be given.

Milk—Such old people whose digestion is good can continue to take camel's milk if it does not produce (after taking) heaviness or distention or pain. Milk is highly Nutritious and a moistness producing food.

Among various milks goat's and ass's milk are best suited in this age. Particularly the ass's milk because it does not contain much curdling matter particularly when honey salt or both are added and taken.

When goat's milk is given, the grazing ground of goat should also be considered. The grazing ground should not contain vegetation which is bitter, sour, highly saltish, pungent or acrid.

Fruits and Vegetables:-Carrot, 'Karafs' etc. prepared in olive oil helps in maintaining alimentary tract soft if given to old people before food. Garlic can also be taken if the person is used to it. It is helpful in this age. **Ginger Preserve** (Murabba or other heat producing preserved fruits with correctives are to be taken in small quantities with a view to help digestion. The heat produced by these should be such as would not produce dryness. **Figs** (Anjirs) and **Allu-Bukhara** boiled to softness with honey and water and given before food helps to clean the alimentary tract. **Pancreas** (goat's) boiled in salt and water and fried in olive oil with spices is very helpful in creating appetite and a laxative effect. **Chicken Soup** containing suitable vegetables and spices keeps old people in VIM.

If bowels move once in three days in the old, no laxative or purgative is to be given but the motion should be soft. Pancreas gums that swell after absorbing moisture and only such vegetables that are known increase secretions of the intestines are to be used in diet.

Enema with suitable oil is indicated in old people, because, this removes constipation and softens the intestines. Irritating or stimulating enemas are to be avoided in old people for it causes dryness in the system.

For removal of abnormal matter in the adults and old **Fasad-venesection** should be avoided. Purgatives are the last thing to be used in this age.

III. *Alcohol*. Old red alcohol is the best in the old, because it is both diuretic and energy giving. New and white alcohol is not to be taken except when they have taken Turkish Bath, or after food and when thirsty. This kind of alcohol at this time acts as only water.

IV. *Removal of obstructions in old People*. This term refers to impaired functions of excretion e. g., constipation, difficulty in micturition, want of perspiration, loss of appetite due to impaired functions of the liver etc.

By the use of alcohol or alcoholic drinks old people develop obstructions of normal functions as above. If use of alcohol becomes essential for them then use of black pepper, garlic and onions along with or in food helps in early stages to counter of ill effects.

"**Asanasia**" or "**Amroosia**" are two of the compound preparations used for maintaining good health in old age. After the use of these prepara-

tions, moistness creating food is to be given.

Old people can take alcohol prepared by fermenting honey. This alcohol does not cause obstructions or antritis.

V. *Massage in Old Age.* Massage in the old should be light in force and short in duration. If certain parts be tender to pressure, those parts should not be massaged.

Massage is to be done several times a day with rough cloth or hand, after massage Turkish bath is also good.

VI. *Exercise for the Old.*—Bodily constitution of old people is varied. They are subject to a variety of disorders and used to various forms of exercises. One kind of exercise cannot be prescribed to all old people. Whatever exercise they are used to they should have that exercise to such moderation that are suited to them at this age. If a particular organ of their body is not in sound condition, the exercise should be such

that will naturally help the weakened organs, as well as the whole body.

If a person is suffering with giddiness or epilepsy the exercise should be such as would not disturb the part. He should not do an exercise in which he would have to lower his head, suspend it or be upside down (with a view to increase blood circulation to this part). Exercise in such cases is to be walking, running, or horse riding, i.e. exercise using the lower half of the body.

If there be any disorder in the legs the exercise to be preferred is that requiring effort of upper part of the body as weight lifting, throwing weight etc.

If the complaint be in spleen or liver which is not a contraindication for exercise, suitable exercises are to be adopted in which one can use limbs while lying flat on face or back without causing discomfort to the organs.

If the complaint be in the chest or above, suitable exercise of the lower limbs alone are to be done.

PLAGUE - A COMPARATIVE STUDY

By

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It is notorious, what a great havoc is made by this fell disease PLAGUE all over the world. This fell disease seems to date back to the very olden times and has been variously named as; MAHAMARI, JANAPADA-VIDHWAMSANI, MARATHA, AGNIROHINI, KSHUDRAROGAM, AND TAON in Arabic literature.

The word 'PLAGUE' was used by ancient writers for every kind of epidemic disease causing a great mortality. In the Hindu system of Medicine, the word MAHAMARI, meaning of 'GREAT-KILLER', is commonly used for every serious type of epidemic disease.

After constant investigations the word PLAGUE has been applied to a specific acute infectious febrile disease, usually attended by swelling of the lymphatic glands in the groin and other parts of the body and also complicated by carbuncles, pneumonia, and often Petechiae.

General History

This type of disease is said to have prevailed in Syria in 300 B.C. and can be traced in Europe in Emperor Justinian's time in about 544 A.D. It has prevailed in Europe, as late as the 17th century, when it seems no less than 45 epidemics of plague were prevalent. It prevailed in the 14th

Century in China, and other Asiatic countries. It was occasionally epidemic later on in Egypt and prevailed in Arabian and Syrian coasts. It broke out in Copenhagen in 1712, at Marseilles in 1720 and at Moscow in 1771. In 1813, it broke out at Malta, and at Gozo. It devastated the ranks of the Russian Army in Bulgaria in 1828-29. It broke out in Hongkong and in many other parts of the world during 1894.

In India plague is said to have broken out in the reign of JALLALUDDIN KHILJI in 1391 A.D. During the Moghul period it broke out several times, from the reign of AKBAR to the reign of AURANGZEBE. It depopulated many big cities in the Deccan and Central India. Mutamid-Khan in his Iqbal-namah-i-jahangari says, that for 8 years plague devastated the cities of LAHORE and DELHI. In 1685, during the reign of Aurangzebe padusha the disease appeared again. History shows that plague broke out in the army of Aurangzebe, which he lead against SHIVAJI and he was compelled to leave Deccan for that reason. In 1896 A.D. plague was serious in Bombay and throughout the whole of INDIA, and in Bengal in 1898 A.D. Since then it has not totally disappeared from India. Particularly in Deccan (NIZAM'S DOMINIONS), no year passes without an attacked by this fell disease upto now.

Causes and Symptoms

One of the most important results obtained during the year 1905 is the establishment, by the English Plague Commission working in Bombay, of the fact, on definite experimental evidence, that fleas (*P. Cheopis*) actually can transmit plague from rat (*M. Rattus*) to rat. The results of SIMOND (1891) GANTHIER and RAYABAND (1902) are thus completely confirmed. Learned physicians and surgeons, ancient as well as modern, have tried all the means at their command to trace the original causes of this great disease. The ancients laid stress on the superhuman causes, the modern tried to shift the emphasis on the natural. According to the modern theory, it is due to a specific Bacilli called 'BACILLUS-PESTIS'. Some attribute that the plague-bacillus gains entrance into the body through the abraded skin, and after gaining entrance through the skin that it passed up the lymphatics and gives raise to swellings of the glands.

The disease may also be said to be due to the vitiation of the atmosphere, as naturally every epidemic like Malaria, Choleraek will be connected with the atmosphere and plague is considered as the serious of all such epidemics. Also posionous gases from the earth, dead-bodies in the process of decomposition, evil vapours, and smokes, soiled water and foods, rotten mossesek do account for prevalence of the epidemic. The incubation period of plague is from 2 to 5 days. The disease brings with it lassitude, weakness, headache, vertigo and shivering, soon followed by febrile reaction. Sometimes in this stage the patient is in a peculiar condition with staggering gait and tremulous speech or he is seized with indefinite fear and restlessness or

there may be nausea or diarrhoea. The fever is generally high, the temperature ranging from 102 to 104 degrees, or in the worst cases even 107 degrees. The pulse varies from 100 to 130 beats per minute. The tongue is at first moist and white, but later becomes dry and brown and a typhoid condition may supervene with delirium and coma. There will be sores in the lips and gums, failing pulse and cold extremities. Urine will be scanty, acid in reaction, high coloured and contain usually albumin and sometimes suppression may also occur.

The Report of the Indian Plague Commission states, typical cases after a period of incubation of from two to seven days begin suddenly with prostration, head-ache, dizziness, and sometimes vomiting and diarrhoea after a few hours, or after one or two days a chill develops followed by high fever with noisy delirium passing into coma: on the second to the fourth day buboes, most frequently inguinal, develop. In non-fatal cases they more frequently suppurate and resolve. There may be carbunculous boils and petechia; convalescence begins from the sixth to the tenth day. The signs may be thus summarised as follows:

The temperature of the body becomes very high though not always; the patient feels much heat in his body and experiences a great amount of uneasiness, excitement and is sometimes unconscious. The pulse beats as in pneumonia and the beats are from 100 to 130 per minute. It is full dicrotic and afterwards becomes thready. Respiration becomes difficult, the number of respirations varying from 40 to 60 per minute. The mucous-membrane of the whole air passage becomes inflamed. The respiration becomes

slow, deep and sighing in character, and sometimes stertorous. In some cases there is slight cough and afterwards the patient feels pressure and pain in the chest. Sometimes the perspiration gives a very foul odour. The urine becomes high-coloured and is generally scanty and contains albumin. In some cases the liver becomes enlarged and the abdomen is distended and there is tympanitis (a hollow sound). There is nausea often times and the appetite disappears. There is pain in the upper part of the abdomen. The colour of the vomitted matter is yellowish or blackish or sometimes the matter is accompanied by blood. There is oftentimes excessive thirst, the tongue and the mouth becoming dry. Sometimes there is a swelling of the gums. There is head ache and giddiness, the patient does not get sleep and in some cases may remain unconscious. Eyes become watery and red and appear half-closed. The patient has a vacant look and lustre of the eyes fades away, in some cases the patient cannot hear properly and complaints of pain in the ears. There is an appearance of watery mucus from the nose, generally in the pneumonic variety. In the begining the tongue becomes coated white and rugged but moist. Later on the tongue becomes flabby, rugged, raw and dry. The patient cannot speak properly on account of exhaustion. Face becomes anxious, fearful, then pale, distorted, and hideous. The stools are dark and gummy and sometimes of different colours and foul-smelling and sometimes containing mucus. There may be constipation or diarrhoea. Sometimes stools contain blood. The body becomes unnerved. The patient becomes furious and sometimes there is delirium. Some patients get small boils carbuncles, or reddish petechia, on the body which however soon subside. There may be pain in the hands and legs followed by

cramps. This condition is sometimes followed by delirium and collapse. Sometimes the disease may turn fatal without the patient getting high fever. It is therefore very necessary that the plague patient should be properly attended to from the very beginning.

After one, two or three days of fever the local signs show themselves in the formation of glandular swellings in the groins, axilla, neck etc., and in the case of women sometimes on the breasts. Mostly it is the inguinal glands group that is swollen and are affected. The intensity of the disease is measurable by the particular part where the bubo appears. It does not appear exactly in the armpit and thighpit but a little below. The size of the bubo may range from the size of a wheat to that of a betel-nut. If it is at the arm-pit the burning pain, excitements, twitching, unconsciousness and seriousness are greater. Dr. Frazer makes these important remarks relating to the subject :- Distribution of buboes according to locality and sex-buboes appear to occur more frequently on the right than on the left side. Relatively to other buboes, axillary buboes are more frequent in women than in men, groin buboes are relatively more frequent in men than in women and cervical-buboes relatively to other buboes, occur about as frequently in men as in women. The glandular enlargements, however, are not restricted to the superficial glands, for deeply-seated glands such as the mediastinal, bronchial, mesantric, iliac and pelvic may likewise be affected; and it has not infrequently been found that the iliac and pelvic glands are enlarged in association with superficial glands at the groin, so as to form with them a continuous bubo. Nor does the mere production of these enlargements represent the extent of involvement of the lymphatic system.

THE AYURVEDIC VIEW :-

Under the Ayurvedic system there are four principal DHATHUS or so called humours in the body:- (1) Rakta or blood, (2) Vata or black-bile, (3) Pitta or yellow-bile, (4) Kapha or Phlegm. The colour of blood is red, of Vata black, Pitta yellow, and Kapha white. Disease is the result of one or more of them being out of balance. Such-diseases as plague etc., are ultimately connected with moral and religious causes as reflected in the LAW of KARMA.

Plague may be divided into four varieties, which are principally recognised by the colour of the Bubo. The colour of the Bubo may be either red yellow blue or black. The reddish kind is the least fatal. The yellowish is about equally harmful. The bluish is more serious, while the black kind is the most serious in its effects.

Further views expressed by recent investigators :-

Dr. Frazer further stated that, lymphangitis has occasionally been observed, which involves both the superficial and deep vessels. It most frequently affects the lower extremities, sometimes causing swelling of the entire limb from the groin to the foot, and when it occurs, the prognosis of the case is rendered specially grave.

Buboes may gradually undergo resolution, or they may suppurate. In the former case, they may disappear in from a week to a fortnight; in the later case, progress is usually very slow; sloughing may occur, and a large open sore may be formed exposing muscles and blood vessels and weakening the patient by profuse discharge. Death is in this

manner occasionally produced long after the immediate dangers of plague have disappeared.

W. HUNTER in 1906 studied the anatomy of Buboes, their site, number etc. as follows :-

Date of onset :—Buboes may be one of the earliest signs of plague. Many appear within forty eight hours of the onset of fever, and the majority are well marked before the fourth or fifth day of the illness.

Their Growth :—This is usually slow; a rapid increase is of grave prognosis, according to LOWSON, buboes vary in size from a Hazel-Nut to a man's fist.

Situation :—Femoral-bubo, left or right, is the commonest form, about 30% of each variety. Next comes axillary bubo, from 13 to 17%. then inguinal, about 2.5 to 3.5 %; and right and left cervical, about 2 per cent. In the case of the femoral or inguinal bubo, the swelling may extend to the iliac and lumbar regions. The Haemorrhagic and oedematous infiltration may extend considerably upwards or downwards. In the axillia, the glands and surrounding connective tissue form a soft oedematous mass of varying size, the oedema and haemorrhage extending for considerable distances.

Double Buboes :—Femoral. occur in about $\frac{1}{2}$ per cent. of the cases. They point, in the author's opinion, to the conclusion that plague is at initio, a septicaemic disease. General lymphatic enlargement also occurs in plague not only in the bubonic but in other types, pointing to the view that plague exerts a special action on the general lymphatic system.

The author considers that, B. PESTIS multiplies in the blood stream and primarily attacks the lymphatic system. Here, swelling, Oedema and haemorrhagic extravasation take place, accompanied by periglandular oedema and haemorrhage, which become diffuse. This would lead one to the conclusion that buboes are not dependant on lesions in the skin in the immediate neighbourhood, for, widespread haemorrhagic extravasations are quite as common as buboes.

The author considers that, the obvious objection that buboes occur in definite regions, can be met by the following considerations :—

(1) Many cases of plague are not bubonic, although the glands are enlarged

(2) Different types of the disease prevail in different epidemics; in one bubonic, in another, the Septicaemic type;

(3) The epidemic may begin as bubonic and become septicaemic in character, and vice-versa; (4) Cervical, submaxillary, and parotid buboes may occur, be a source of entry, be much enlarged and contain numerous bacilli. The persistent absence of anything like acute lymphangitis is strong evidence against the skin inoculation theory of plague. The author regards the view of the cutaneous infection in plague as an exaggerated one. In 1910 Mr. B. K. Rao reported of two cases of plague with unusual symptoms, resembling those of cholera, and in one of which plague bacilli were isolated from the faeces.

(Incomplete)

(Differential Diagnosis as per modern and Indian systems follows in the next issue of the journal)

शंभोर्लवणत्रयंकल्पनं नाम पञ्चमोऽध्यायः ॥

BY
Dr. M. VENKATARAGHAVAN H.P.I.M.,
College of Indian Medicine
Madras.

शिवस्य शक्त्या संयोगादण्डस्योत्पत्तिरीरिता ।
अधोऽधोगमनं तस्य परिणामादिकं तथा ॥ १ ॥
अण्डेऽस्मिन् शङ्करस्यांशो भूयिष्ठः खलु वर्तते ।
तथापिः शक्ते संयोगात् त्रैगुण्यमपि दृश्यते ॥ २ ॥
गुणस्वरूपधैरुध्यात् भूगर्भस्थित वाहिना ।
ऋतुस्वभावसेवेन कालादीनां निमित्ततः ॥ ३ ॥
रजस्तमसस्यापि तारतम्यादि मेदतः ।
विकाराः संप्रजायेरन्नण्डरूपगुणादिषु ॥ ४ ॥
आदौ तत्क्षार भूयिष्ठं श्वेतवर्णमलीयसं ।
शंभोः सत्वस्य सत्वेऽपि गुणतो राजसं भवेत् ॥ ५ ॥
ततस्तन्नील वर्णस्यात् प्राचुर्यात्तमसस्तथा ।
रजोऽनुबन्धतस्तस्मिन् क्षारत्वं चापि वर्तते ॥ ६ ॥
ततो रजोगुणस्यैव प्राचुर्याद्याति रक्तताम् ।
तमोऽनुबन्धादत्रापि क्षारत्वं मपि दृश्यते ॥ ७ ॥
ततस्तदग्निनायुक्तं रजसोभिभवेन च ।
शैथिल्यात्तमसः किञ्चित् श्वेतं सत्वगुणाधिकम् ॥ ८ ॥
अल्पत्वात्तत्र सत्वस्य प्राचुर्याद्रजस्तथा ।
अण्डंतत् क्षारवत् किञ्चित् पीतवर्णं च जायते ॥ ९ ॥
वर्धनात्तमसश्चाथ तेषां चान्योन्य मूर्च्छनात् ।
अण्डस्याच्छिखिपिच्छाभं अनिश्रेयगुणादिकम् ॥ १० ॥
ततः सत्वं स्ववीर्येण कुर्याज्जित्वा रजस्तमः ।
शुद्धस्फटिकसङ्काशमण्डं तुहिन मोहनम् ॥ ११ ॥
तच्चन्द्रलवणं प्राहुः मुनयः पद्मिनीत्यापि ।
तस्याश्च लवणत्रय्या निर्माणान्तरमुच्यते ॥ १२ ॥
गृहीत्वा पद्मिनीं काले डोलायन्ते विपाचयेत् ।
सोषके मृण्मये पात्रे काञ्चिकेन समन्विते ॥ १३ ॥
संषेप्य केवलं शुक्तिं काञ्चिकेन यथाविधि ।
दत्त्वा कवचमण्डस्य द्रष्टुर्कर्मापुटेपचेत् ॥ १४ ॥
ततः संजाये चुन्नं तत् ग्राह्यं चाप्रमादतः ।
अनेनैवप्रकारेण पुटे वारत्रयं पचेत् ॥ १५ ॥
सकुक्कुटाण्डचुन्नं तदण्डचुन्नं सुषेधितम् ।
अमृतेन पुटेदग्धं स्यादन्यालवणत्रयी ॥ १६ ॥

शंभोर्लवणत्रयंकल्पनं नाम पञ्चमोऽध्यायः ॥

33

पूर्वोक्त लवणत्रय्या यद्यत् सिध्यत्ययन्नतः ।
तत्सर्वमनयाप्यारा लभ्यते नात्र संशयः ॥ १७ ॥
यदत्र वर्णितं मया पटुत्रय प्रकल्पन-
द्वयं जगद्धित प्रदाय कल्पवृक्षकल्पकम् ।
सुसिद्धसंप्रदायिभिर्धनुक्तमस्ति गूढत
स्तदेव हि स्फुटीकृतं गुरुप्रकाश कांक्षिणा ॥ १८ ॥

अथाण्डचुन्नस्य निर्माणक्रमोनाम षष्ठोऽध्यायः

(तथारनालप्रकल्पन विधानं च)

अण्डचुन्नस्यानिर्माण मारनाल प्रकल्पनं ।
प्रतिष्ठातं मायापूर्वं अत्रैव प्रतिपाद्यते ॥ १ ॥
ज्वीरस्वरसेपुते प्रस्थद्वयमितेभिषक् ।
अशीति गुजामानेन द्वौक्षारौ साधुयोजयेत् ॥ २ ॥
कुक्कुटाण्डानि पञ्चापि क्षित्वातस्मिन् रसेभिषक् ।
आतपेशोषयेत् संयक् वारान्सत्पाप्रमत्तधीः ॥ ३ ॥
उद्धृत्य तस्मादण्डानि शोषयेत्तद्वत् पुनः ।
संषेप्य लवणं तज्जं किञ्चित्सौवीर संयुतम् ॥ ४ ॥
एकवारं पुटे पक्वं जायते चुन्नमुत्तमं ।
इदमेवोपयोक्तव्यं द्वितीये लवणत्रये ॥ ५ ॥
पृथिव्या लवणमण्डं यदन्यदण्डंतु कौक्कुटं ।
अनयोश्चुन्नयोर्योगात् द्वितीयं लवणत्रयम् ॥ ६ ॥

अथकाञ्चिक निर्माणक्रमः ॥

शाल्यं मृण्मयेपात्रे निक्षिपेत्तत्तवारिणि ।
घर्मेनिघाय सायाह्ने पूरयेत्तत्पुनस्तथा ॥ १ ॥
द्वितीयेद्वनि तत्सर्वं अन्यस्मिन्पूरयेत्तद्यदे ।
संशोष्य पूर्ववत् घर्मे पूरयेदुष्णवारिणा ॥ २ ॥
ग्रान् प्रतिदिनं ह्येनं नवं भाण्डन्तु मृण्मयं ।
प्रक्षाल्य चोपयुक्तं तदातपेशोषयेत्पुनः ॥ ३ ॥
इत्थं षण्मासपर्यन्तं आवृत्तं काञ्चिकं भवेत् ।
उपरिस्थं जलं ग्राह्यं अद्यः किट्टं परित्यजेत् ॥ ४ ॥
इत्थं श्री मु. व. वेङ्कटराघव विरचितं
लवणत्रयी नाम क्रोडपत्रं साण्डयुन्नारनालप्रकल्पनं समाप्तम् ॥
अनेन तुष्टिमायान्तु पण्डिता गुणदर्शिनः ।
मात्सर्यं दण्डचित्तानां कालाद्भवतु सन्मतिः ॥

Report of the Committee on Indigenous Systems of Medicine Govt. of India.

We welcome the report of the Committee on Indigenous Systems of Medicine (Chopra Committee Report). It is a well documented and authoritative report, which was unanimously accepted by the members of the Committee. The Members of the Committee were taken various provinces and they have represented various shades of opinion. The Chairman of the Committee Col. Sir R. N. Chopra had a distinguished career in the Indian Medical Service and was a seasoned Research Scholar. As such, the opinions put forth in the body of the report and its recommendations are of considerable value and most important and opportune at the present moment.

The report has discussed, in its various chapters, the present day needs regarding Medical Education and Medical Relief. The report is neither refractory or out lawdiah neither conservative and orthodox nor liberal and hetrodox. It has balanced the Medical needs of the country so well, that it has not condemned every thing that was new, nor commended all things that were old. It has struck a via media so that the ancient saying of Charaka, that, which ever is useful for the patient should be adopted by the physician, is well concerned. It is with that idea, that the committee has recommended a synthesised and integrated system of Medicine by which, a Medical student will have in his curriculum of studies, both Indian and Western System of Medicine which are of proven value. In this chapter a large number of opinions from various committees and authoritative persons were quoted to prove, that not only such synthesis is feasible and practicable but highly useful. The report shows means and ways by which a gradual integration may be effected.

The most important need of the country is proper medical aid to the teeming millions of India in the villages. The Health Survey and Development Committee (Bhore Committee) were not able to suggest immediately any means by which there could be organised medical relief in the villages. Whereas Chopra Committee have made definite recommendations about the village Vaidya Scheme. We are happy to note that both in the synthesis and village Vaidya Scheme our province has scored well. The Scheme of synthesis is already worked in the college of Indian Medicine, Madras; and the village Vaidya Scheme is in some stage with the Govt. of Madras.

The most important of the recommendations is naturally the scheme of Research in Indian Medicine. Though this subject is recommended to be taken up by the central Govt. we are glad to note the Committee have also recommended that every Medical Educational Institution should be a place of Research. If the provincial Govt. take up this recommendation then they can put up their schemes of Research to be worked out in the Educational Institution of Medicine. We hope the Madras Govt. which have been postponing the Research Institute will start as soon as possible. There are enough directions in the report to be followed either by the provincial Govt. or by the central Govt.

We also feel happy that two members of our association Dr. C. Dwaraganath and V. Narayanaswami have rendered their best help to the committee in drafting the report and their services very handsomely acknowledged by the committee.

JOURNAL OF INDIAN MEDICINE.

The Editor-Journal of Indian Medicine has pleasure in giving the following Report on the issue of Journal of Indian Medicine.

1. Started on its working from March 1947.
2. Period of Issue—Quarterly—July, October, January and April.
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Y. KONDAL RAO,
Editor.

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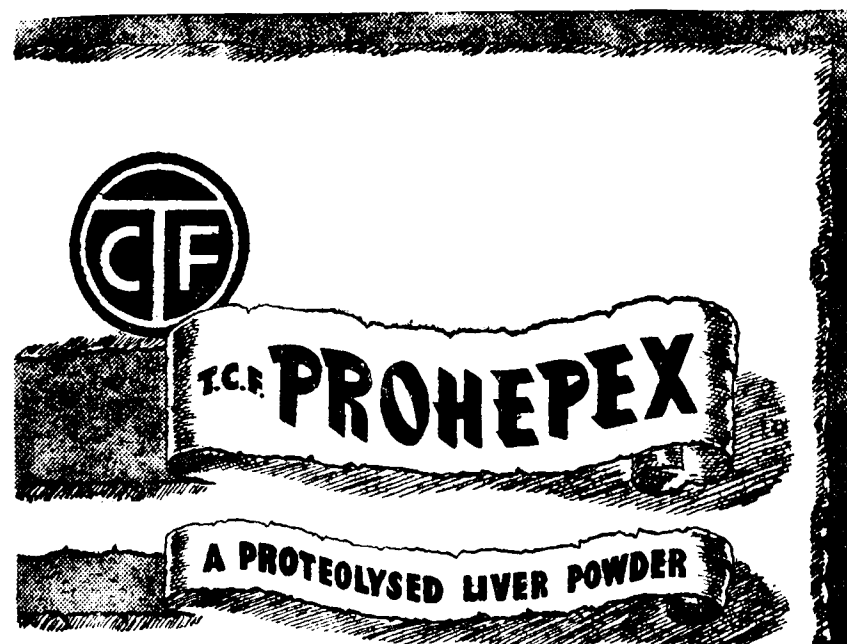
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1. The Capital of the Society shall, for the present; be Rs. 1,00,000 made up of 20,000 Shares of Rs. 5 each. The value of each Share shall be paid in one lump on allotment.

2. The objects of the Society:—

- (i) to manufacture Indian Medicines of high quality under expert supervision and direction,
- (ii) to supply the needs of the members in respect of prepared medicines, raw-materials and appliances required by them,
- (iii) to purchase such materials and appliances as may be required by the members and to arrange for stocking and distribution to members,
- (iv) to provide an Institute or Clinic to meet the professional needs of members and to tender expert advice to them,
- (v) to open branches or depots for the sale of medicines, raw-materials appliances to the members.
- (vi) to do such other acts as may be conducive to the promotion of Indian Medicine and the general objects of the Society.

3. Membership is open only to Registered Practitioners of Indian Medicine and other qualified Practitioners of Indian Medicine.

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