DISCUSSION
DISCUSSION

Ayurveda, Life, Health and Longevity

(Roberte Svobod, 1992 : 34-115, 218-260)

Materialistic philosophies have existed in ancient world, but only since Descartes and Newton has materialism gained acceptance as an accurate model of reality. Though modern science is convinced, that the body is nothing more than an engineered machine still believes that history, culture and personality have no effect. Those of us who enjoy the benefit of living in a modern civilization also suffer from all its disadvantages. Pollution of air, water and food by chemical and radiation, pollution of our minds by noise and information overload, pollution of our humanness by automation, are the emerging problems of modern era.

In the remote parts of the world, where civilization has not yet infiltrated, human beings live longer, and in good health. Centenarians credit a variety of factors for their longevity such as good food, hard work and brandy. Civilization is quite a recent development in human history, where in societies become more complex. Human race has only lately learned how to live together in concentration. We have not yet evolved an innate instinctual ability to adapt to the artificial environment which we have created for ourselves.

Another, reality-forming ideas that shape our world is the idea of progress. Time related Linear progress, the belief that the old should be progressively replaced by the new one. We need a totally different perspective on life and health that can suggest to us ways in which to proceed. (Robert Svoboda, 1992 : 1-10)
Ayurveda, the ancient medical system of India is one such perspective. The Ayurvedic paradigm shows how interaction of body, mind and spirit can be predicted, balanced and improved to enable us to live gracefully, harmoniously. Ayurveda has donated number of drugs which are of herbal origin. Ayurveda seems to be the potential source of new therapies. Greatest treasures, however are theories of health and disease which are remarkably compatible with the modern life exposed by "post-modern" medical thinkers. Translation of Ayurvedic wisdom into a form that presents an organically completely comprehensible and accurate image is difficult. Many practising allopaths agree, ostensibly not because traditional medicine is not "scientific", but practically because elimination of alternative medicinal system would reduce their competition.

Most of the vedic healing verses appear in the Atharva Veda. Over one hundred of its hymns are devoted to conditions as varied as fever, leprosy, dropsy, heart disease, wounds headache, parasites, rhumatism etc. Charms, plant and human contrivances were all used therapeutically in vedic times. One treatment for jaundice, for example requests the body's yellowness to flow out of the patient into yellow birds, turmeric roots and other yellow objects.

Basic Principles

Inspite of rapid advancement in the field of modern medicine a number of disadvantages like drug toxicity have crept in. Hence, scientists from modern medicine have started re-emphasising that drugs should be such, that they are effective but at the same time
should be safe. Hence there is a tendency on the part of investigate
to turn towards Ayurvedic Medicines in general, and herbals in
particular with an aim of obtaining safer and effective
medicine. But this is possible if these medicines are subjected to
scientific scrutiny in a systematic fashion.

As a science of life, Ayurveda is applicable to every living
thing. While the modern science has limited the definition of life
to embodied beings, the vedic science recognizes that many more
beings in the universe possess life than most of us realise. Earth
behaves like a living organism. According to the law of microcosm
and macrocosm everything that exists in the vast external universe,
the macrocosm, also appears in the internal cosmos of human body.
The microcosmic universe of 50-100 million cells, when healthy, is
harmonious, self perpetuating and self correcting. Charak says, man
is the epitome of the universe. The knowledge of Ayurveda is an
integral part of the universal reality and manifests with each
manifestation of the universe. The Rishis, who were seers of the
vedas, spent their lives contemplating the beauty of simultaneous
absoluteness and relativity of existance.

Embodied life is defined as the functioning as one unit in one
place, at one time, of the five Great Elements, the five cognitive
senses, plus the five active senses, the thinking mind, the ego
and the intellect and the individual soul, a fragment of the cosmic
purusha. All the principles that compose the universe thus appear
in an embodied being.

The cells of our body likewise commonly think and communicate
chemically, their consciousness is more automatic and less
independent than is your overall consciousness. The quality of your awareness depends upon the functioning within your consciousness of sattva, rajas and tamas which work by mutual suppression, the one which is strongest at any one instant expresses itself and suppresses the others.

Healthy thoughts create health, dark hopeless thoughts make our body lose hope and surrender to disease. Medicine and religion differ only in their field of activity. Ayurveda is a good way to begin the study of spirituality. Physical health makes mental and spiritual health easier to attain. (Robert Svoboda, 1992 : 44)

The rule that governs the interaction between the environment and the organism is the Law of like and unlike.

Charak explains that

The like is the cause of the increase of all things at all times and the unlike is the cause of their decrease. In the context of treatment of the body like cause increases and unlike causes decreases, of the body's constituents. Like combines and unlike differentiates. Like is that which agrees while unlike disagrees.

Like increases like is a simple principle and our body becomes warm when we lie in warm sunlight

FOOD

The life of all living beings require food, every human being seeks food, become complexion, clarity, good voice, long life, understanding, happiness, satisfaction, growth, strength and intelligence, are all established in food. Whatever is beneficial for worldly happiness, whatever pertains to the vedic sacrifices and whatever action leads to spiritual salvation is said to be
established in food. (Chraka)

Selected food items ensure good effects on the health of the eater. It depends mainly on eight aspects: its natural quality, preparation, combination, amount, the climate, the season, the rules of eating and the eater. In Ayurveda, more weightage is given for food and many items are avoided in certain disorders. Every action is a result of potency. Although there are four pairs of strong potencies including heavy and light, the most important is hot and cold. Hot food enhances the fire (energy) available to the body, while cold food reduces it. Generally sour, salty and pungent substances are hot and sweet and bitter and astringent substances are cold.

Most of the medicines are advocated to be taken with cow's milk and cow ghee. These two substances are useful to improve health. Milk is regarded as the best of those substances that make you feel alive. It is the only common food in the world. Cow's milk is sweet, cool, unctuous, slow to digest. Cow's ghee is the best substance to cure both Vata and Pitta. It is cool and promotes memory, intelligence, the digestive fire, semen, ojas and fat. It removes toxicity from system and cures insanity.

Like modern medicine, consultation with dietician is carried out and accordingly diet is prescribed and planned for every patient. Still no weightage is given to diet except in hypertension, (salt restriction) or in diabetic (avoid sugar enhancing food or consuming total sweet free diet.) cases, in modern medicine
There are a number of indications for a single preparation like for suwarnamakshikadi wati, effective in correcting valvular disorders, anaemias, mental disorders, painful condition, fatigue, lack of vigour, epilepsy, liver disorders etc. These observations are written by competent persons. There is lack of control or self control. There is no corroborative evidence compared to this, in modern medicine, Ultra Sonography can prove a disorder and after treatment, the recovery also can be observed on repeating Ultra Sonography. Such proofs are not available for these preparations. Therefore it is difficult to apply such a therapy to whole population on experience of Ayurvedic practitioner. Therefore for such high claims, they should plan scientific studies to prove its efficacy in each disorder. There must be proper control group for comparison. If such data is available then only such preparations would be accepted.

The Ayurvedic science is based on the concept of Panchamahabhuta. Which is now outdated in light of modern physicochemical science.

Therapeutic Concepts in Ayurveda

Charak a great teacher in Ayurveda, taught and Buddha's physician Jivika demonstrated, that there is no substance existing, in the world which has no medicinal value. This is true, provided we know how to use it. Ayurvedic Medicine's basic drug source is plant kingdom. Plants have played an important part in health of Indian society. Inspite of the rampage of polyethylene and stearofoams, still millions of people use natural plant products in their daily life.
In the ancient era plants were used in folk medicine, in respiratory disease and for inflammation. Very commonly Tobacco plant was accepted into folk medicine for its local purifying, dehydrating and anodyne qualities. Ayurveda is concerned with the properties of herbs. While some eminent scholar in this field insist on the use of the herbs growing in one's locality for one's medicine, the innate constitution of the region must also be considered.

Trustworthy, people collected the plant in the appropriate season, after fasting and worshipping God. While collecting a plant, plant collector must apologize for killing it. Most Ayurvedic pharmaceutical companies hire members of a special herb collecting caste. These people have knowledge about when a plant becomes ready for picking. Branches are best taken when they have sap, in India during rains or spring. Roots are best taken in hot season or winter before sap develope. Best time for bark, bulb tuber and latex is autumn. Flower and fruits are collected when they appear.

Charak mentions that plants, should be stored in a house whose door faces east or north and having a single window. Use clean containers, sealed against the effects of fire, water, moisture, smoke, dust, and mice and other quadrupeds.

Ayurvedic pharmacy was a well advanced branch. Crude drugs are rarely administered. Various formulations from simple distillation to powder etc. to elaborate pharmaceutical preparations like pills of different sizes (wati, guti, modaka) and medicated oils are available. In liquid formulations a wide range is present, such as fresh juice, decoction, hot water and cold water infusion,
decoction in rice water etc. General principles for shelf life have been established by the ancient scientist.

They are prepared by traditional technology. A point to note is that Ayurvedic medicines have mainly relied on a combination of drug, rather than on a single drug. Administration of drugs in combination may either enhance or antagonize the response of its individual components. This is called, Samayoga or Sarvakarmaja (synergism) or dwandwakarmaja (antagonism). For facilitation of drugs at its site of action, certain combinations are prescribed e.g. Piper longum has affinity for liver, while catechu has affinity for skin. Compound formulations are also made to improve the palatability making oral administration easy. Injection is a common route of drug administration in modern medicine. For some drugs like pentothal sodium and NE intravenous route is the only choice. In acute conditions I.V. route is employed. It is totally absent in Ayurvedic medicine. Therefore, for acute illnesses and immediate effect, apparently no therapy is available in Ayurveda. Probably they made use of sub-lingual route, that is Chatan (linctus). Which is one way for quick onset of action of some drugs.

Drug development is an on going process in modern medicines, achieved by changing chemical structure, synthesising new analog of compounds. These are extensively screened by pharmaceutical companies. Thus there are many life saving drugs, like steroids plasma expanders, ACE inhibitors or digitalis derivatives available in allopathy which have proved their efficacy.
For chronic conditions and palliative treatment of many subacute conditions, Ayurvedic medicines are beneficial.

**ANIMAL PRODUCTS**

In Ayurveda, animal products like dung, urine, and milk are also used, which can be collected without slaughtering. Byproducts used are honey, musk and deer antler. Folk remedies, use fresh spider's web to treat chills it is used also as a dressing for wounds. Cow milk is a common byproduct. For certain conditions it is collected after the delivery of the cow, as it is less likely to aggravate Kapha. Dung and urine should be collected only from healthy animals.

Rarely animal products, after killing them are used, e.g. flesh, organs, horns, feathers and hooves should be from strong, healthy, full grown animals and birds. The most famous animal derived Ayurvedic medicine is musk, which is the secretion of the umbilical glands of the musk deer.

Preparing an Ayurvedic medicine is a job of an expert cook. One must have mastered the art of mixing various substances together. They make judicious use of processing methods (Samskara). They prepare by this, coherently acting tasty products.

The principles of Ayurvedic pharmacy differ from those of modern Allopathic medicine. They resemble those of Chinese medicine. They are prepared in such a manner that, they will enhance positive qualities and eliminate negative ones. While medicines prepared by pure chemical substances.

Original substance must be fresh. All herbs should be juicy and full of sap. Since sap is the plant's Rasa and has an innate affinity for the patients Rasa, it helps to purify.
Most preparations including pills and jams remain potent for a year provided it does not contain minerals. Powders used within two months, oil and ghee four months.

Medicinal wine and bhasmas improve with age.

There are five commonly used processes called juice, paste, decoction, hot fusion and cold fusion.

**EXPRESSED JUICE** (swarasa)

The plant is crushed and juice extracted through a clean cloth.

**PUTA POKA**

Puta Poka is also considered as a kind of juice. To prepare it, a two finger-thick layer of mud is applied over a paste of drug wrapped in leaves of banyan or banana tree.

**PASTE AND POWDER**

Crushing the plant with liquid produces a paste, without liquid a powder. Powders used for combinations of various drugs are extensively used in Ayurveda eg. Triphala.

**DECOCTION**

One part of fresh herb added to 16 parts by weight by water and the mixture boiled down to one fourth.

Clay pots are best for preparing decoctions. If not available copper pot can be used. For Kapha Pitta type of personality - silver or bronze pots are used and for Vata - gold or iron pots, are advantageous.

**HOT INFUSION**

One part of plant to eight to ten parts of hot water. Keep it at least for half an hour. This method is good for delicate plant parts that cannot undergo boiling.
COLD INFUSION

One part of plant is added to six parts of water and kept for 72 hours or over night and squeezed and strained the next morning. It is good for delicate plants used for Pitta condition.

MINERALS

Minerals are part of the Ayurvedic medicine. These are considered separately from plants and animal substances. Their introduction in Ayurveda has changed direction of the Ayurvedic system.

Extensive purification and preparation methods are necessary to make such substances fit for their use in medicine.

Later Minerals displaced plants because incinerated minerals make good medicines. Other reason, could be that they get better with age, so no expiry date and collection problems. Taste is neutral and they are less cumbersome to administer than herbs.

PREPARING MINERAL MEDICINES

Mineral should be pure and should not contain other impurities.

Purification with various substances - after very hot heating. Agents used for purification are seasome oil, cow's urine, butter milk, sour rice gruel, decoction of hulga etc.

Then they are killed, to make chemically unreactive by converting them into oxide and sulphide.

Bhasmas: Bhasma's are not soluble, particles must be very fine for action. It is said that a well made Bhasma enters the system faster and has a longer duration of action than herbal preparation. Bhasma's are traditionally stored in such a way that they can
continue to take on oxygen. Therefore these preparation are prepared by ancient methods and using ancient equipments.

AYURVEDIC PREPARATION

There are various forms of medicine such as pills or wati, solutions, powders etc.

While preparing pills or wati, they make use of human power and therefore compression pressure does not play a role, as while preparing an allopathic tablet for which we make use of machines. Secondly further coating is never done such as sugar coating or enteric coating, film coating etc. No addition of any inert fillers, apart from medicines is acceptable in Ayurveda pharmacy.

There is no scope for use of synthetic substances. Powders can compound powders, but particle size is different from that in modern medicine. In modern medicine powders are now adays mainly used for external purpose while in Ayurveda commonly for internal use.

Antibiotics manufacture is a big branch of modern pharmacy and they are synthetic or and microbial in origin or by modern D.N.A. recombinant technology certain drugs are synthesised. This concept of antibiosis and symbiosis are not come across

Number of factors are different while preparing tablets in allopathy, such as, compressed pressure and mechanical preparation. Along with drugs other ingredients are also producing some iatrogenic effects.

Biological or physiochemical standardization or submission of data batch to batch for approval of medicine is binding on modern pharmaceutical company while such binding on ayurvedic Medicine is lacking, because there are no methods of standardisation.
anaemia :- Pandurog :- (Charak Chikitsa)

Among the symptoms of Anaemia precursor symptoms are palpitation, dryness of skin, weakness, pica i.e. eating earth.

Signs and symptoms of anaemia have been lucidly described in Ayurveda texts like

Ringing in the ear, dyspepsia, weakness, anorexia, confusion vertigo, pain, fever, breathlessness, lethargy, loss of hair, mental changes, nervous excitability, intolerance to cold drowsiness, excessive salivation, depression, skeletal muscle spasam (muscle cramps), oedema of lower eyelid, (like hypo-proteinaemia). (Ref. Page 340).

Treatment

1) Antianaemic formula - by Yogratnakar Milk kept in pot of iron - given for 7 days

2) Suwarnmakshik, shilajit Honey, Vavdinga, Loha Bhasma, pure Ghee. Rasasindoor - all are taken in proper proportion -> By administering this preparation for 15 days anaemia recovers and patients set back to normal.

3) Lohabhasma, Til, Dry Ginger, Pepper and Pimpali all ingredients in equal quantities - total of all 5 ingredients quantity --> 5 times to it Suwarnamakshik Triturate all together in honey and prepare tablets. This has been administered along with butter milk. This preparation is useful for long standing anaemia. (Yoga Ratnakar).
OUTCOME OF EXPERIMENTAL EVALUATION OF SUVERNAMAKSHIKADI-VATI

1) Pentobarbitone sleeping time

This study was carried out using different doses of test compound ranging from 10 mg / 100 gms to 1280 mg / 100 gms. Acute and chronic studies were performed. Results show that as compared to control group there is a significant increase in pentobarbitone sleeping time in doses 40, 160, 640mg/100gm. The change in pentobarbitone sleeping time could be because of suppression of enzyme activity of the liver by the test compound, because pentobarbitone is a barbiturate which is mainly metabolised by liver.

Therefore, further studies were carried out, to see the effect on enzyme induction. In this study phenobarbitone was used as enzyme inducer and along with phenobarbitone the test compound was administered over a period of six days, 7th day pentobarbitone sleeping time changes were tabulated. The results of this study indicate that as compared to control group there is a significant increase in pentobarbitone sleeping time in drug treated groups, receiving 10, 40 and 160 mg/100gms of test compound, while with 640 mg/gms of test compound the increase in pentobarbitone sleeping time is not significant as compared to control. Therefore it appears that, there is increase in pentobarbitone sleeping time, this could be because of some changes in enzyme activity of the liver or other mechanism which are modifying the changes in duration of sleeping time by pentobarbitone. It appears that suvannamakshikadi-vati has definite activity on liver enzyme system and it is a microsomal enzyme inhibitor. Effect
of suvarnamakshikadi-vati on pentobarbitone: pentobarbitone sleeping time was increased by suvarnamakshikadi-vati especially when given in dose of 40,160,640 mg/100gm. This indicates that probably it produces microsomal enzyme inhibition, which could inhibit the metabolism of pentobarbitone and hence an increase in pentobarbitone sleeping time. Probably suvarnamakshikadi-vati is a microsomal enzyme inhibitor.

Atomic absorption spectro-photometry

The test compound preparation suvarnamakshikadi-wati contains a number of ingredients. Out of these, the majority are bhasmas. After reviewing the monograph of each ingredient from Ayurvedic or medical books, it appeared that most of the contents are inorganic material and therefore an analysis of the inorganic components was carried out by using Atomic absorption spectrophotometer. It appears that suvarnamakshikadi-vati contains Nickel, Cadmium, Copper and Iron, in different concentrations. Out of these four elements, Iron and Copper are present in abundant quantity. Hence further studies were carried out to study the effect of the material as the Copper is useful element in the enzymatic reactions in liver and the Iron is useful in anaemia.

Hepatoprotective study

\( \text{CCl}_4 \) was used as a hepatotoxic agent and acute hepatoprotective study was carried out. Results of this study shows that \( \text{CCl}_4 \), when given intraperitoneally with liquid Paraffin, in control group, produces significant increase in Serum-Alkaline phosphatase, Serum-Bilirubin, and Serum-Alkaline transferase. Similar results were seen by histopathological examination.
In control group there was no change in any of the parameter i.e. liver volume, weight and S. belirubin, A-transferase, A-phosphate. In other animals groups which received CCl₄ and orally test compound in doses 40, 160 and 640 mg/100 gms, there was improvement in levels of S-belirubin S-ALP, S-ALT as compare to only CCl₄ group, but these levels did not come to normal probably, chronic administration of the test compound would be useful in producing these changes. At the same time, results of histopathological assessment are in agreement with biochemical parameters.

Therefore from our study it appears that test compound may be useful adjuvant, in the hepatic disorders. Also this preparation may be useful in recovery from the weakness due to liver and other disorders.

**Anaemia**

Our test compound preparation, Suvarnamakshikadi-wati contains, Iron as a major inorganic constituent, as there is Suvarnmakshik Bhasma and also Loha Bhasma. At the same time, our study of vitro analysis confirms the presence of Iron in large quantity. We assessed its utility in Anaemia. In our study, anaemia was induced by blood loss over a period of 1 week (the initial basal haemoglobin which was normal in all groups of animal)HB, had fallen significantly in all animals. Then to control animals only gum tragacanth was administered and other group of animals received 640 mg/100 gms of suvarnamakshikadi-wati over a period of one month. Every week Hb was measured. It was increased in study group from day 15th (2nd week) and day 28th and
35th days readings it appears from results, that as compared to control group there was significant increase in haemoglobin level and that had come to basal levels within a month.

Therefore our results indicate that suvunamakshikadi-wati is useful in Iron deficiency anaemia and may be used in various anaemias, also in diseases in which there is associated anaemias. Therefore we can recommand use of this compound preparation on scientific basis for Iron deficiency anaemias.

CVS

The effect of suvarnamakshikadi-wati on blood pressure was studied in healthy dogs. This was studied on 5 dogs.

Our study indicates that orally as well as I.V. administration of test compound produces fall in blood pressure. This is also observed with hydroalcoholic extract of test compound. Hence in elderly when there is risk of rise in blood pressure this slight decrease in blood pressure may be useful, to control hypertension and associated weakness and anaemia. But this may prove to be a side effect for youngers and one should keep it in mind while using the compound preparation.
Some of the pharmacological activities which could not observed during our experiments were as follows

**Analgesic Activity**

The compound preparation Suvarnamakshikadi wati was evaluated for analgesic activity by using two methods and different doses of test compound. It appears from the results that there is no significant increase or decrease in pain threshold, in any of the groups of animals receiving different doses of test compound. Therefore it does not have analgesic or hyperalgesic or pro-algesic property.

Similarly study was also carried out with known opioid and the results show that test compound is not antagonising or also not having any synergistic or additive effect after co-administration with morphine.

Therefore it can been safely given with any analgesic preparation as no interaction with analgesic compound is likely to occur.

**Anticonvulsant Activity**

Evaluation of compound preparation was carried out for its anticonvulsant property by using two standard models. It appears from the results, that compound preparation has failed in blocking or abolishing convulsions either induced by chemical substance or by MES. Even though it is reducing the intensity of convulsions, it dose not completely block clonic convulsions or also causes no blockade of tonic hind limb extension. Hence, the compound preparation is not able to protect from convulsions. Therefore cannot be used as antiepileptic, as it is devoid of antiepileptic property. Suvarnamakshikadi wati is presently used by
Ayurvedic physicians. Ingredients are also very commonly used in a variety of Ayurvedic pharmaceutical preparations. Individual ingredients, according to Ayurvedic observations, possesses plenty of actions. Ayurvedic texts, claims that, a single ingredient like Abhrak is said to be an Amrut according to Ayurveda and there is no single disease, which can not be cured by Abhrak. Basically it appears that the choice of the variety of the particular ingredient is important and its origin and amount to be administered helps a lot to cure disease.

This particular tablet is claimed to be affective in a number of disorders such as

1. Heart trouble  
2. Chest pain  
3. Hypertension  
4. Diabetes Mellitus  
5. Paralysis  
6. Anaemia  
7. Rajayakshma (T.B.)  
8. Breathlessness originated by vata pitta (Bronchoconstriction)  

9. Tachycardia  
10. Psychosis (Confusion)  
11. Depression  
12. Weakness  
13. Karshya (leanness, wasting)  
14. Dryness of mouth  
15. Disease of valves of heart

Doses Recommended are- 3 tabs - twice in a day to be taken with milk or water. Timings on empty stomach at 8 a.m. and 6.0 p.m. clock

If we go through the list of indications, some of these symptoms are found in anaemia itself as can be seen in Ayurvedic references as well as from modern medical studies (symptoms of anaemia).

The treatment with this preparations is likely to reduce the symptoms which are secondary to anaemia.

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Results of Acute Toxicity study

In acute toxicity study, results show that there was no death in 24 hours after single dose administration, further 7 days observations, no death in this period in any of the groups of animals, receiving test compound. Maximum possible dose administered was 2560 mg/100 gms. Therefore from the results it appears that test compound $LD_{50} > 2560$ mg/100gms. It appears to be absolutely safe, since such an enormous dose failed to produce any death in the animals.

Sub-chronic toxicity study

When the test compound, Suvarnamakshikadi wati was administered daily orally, over a period of one month, it appears from observations in various groups that the compound is not producing any obvious toxic effect and also there was no single death with dose 2560 mg/100 gms as well. Therefore drug appears to be safe for chronic use, we suggest that drug can be safely administered in chronic illnesses, for a long period.

Effect on General behaviour study

Drug treatment with suvarnamakshikadi- wati did not alter the sleeping pattern of the experimental animals. The animals did not exhibit any change in body movement, eating and water drinking pattern and their usual exploratory behavior. There was no evidence of catalepsy or other CNS effects.

This indicates that suvarnamakshikadi-wati is not an hypnotic or sedative by itself. It did not produce any convulsions, muscle twitching or abnormal postures. NO significant change in sleeping score by test compound.
Also during this observation of over a 4 hours. There is no significant change in respiration.
- No abnormal body movements.
- No convulsions, no salivation or lacrimation.

Therefore it appears test compound is not producing any acute adverse effect over a period of 4 hours after single dose administration.

Chemical Extraction of suv rnamakshikadi-wati

In this procedure original compound powder 500 gms was subjected to sequential extraction. Following are yields from different solvents.

- Yield of 40-60 Petroleum ether extract - 20 mg
- Yield of 60-80 Petroleum ether - 10 mg
- Yield with Chloroform - 30 mg
- Yield with Alcohol - 1 gm

Therefore from the sequential extractions it appears that test compound contains mostly material which is not soluble in these solvents. The content of organic material thus appear to be very small, and is in a range of .004-.2%.

50% hydro alcoholic extract. 500 gms of test compound was soaked in 1 : 1 solution of Alcohol : water 2 liter for 2 days. Supernatant was taken and evaporated. Yield obtained was 70 gms, which was used for cardiovascular studies. This extraction procedure produced an yield of 14%.

The doshas, described in Ayurveda namely, Vayu, Pitta and Kapha constitute the tripod on which Ayurveda stands. To understand its theory of Vata kapha and Pitta perfectly and correctly, is by
itself long and arduous study. The subject is an ancient and complicated one and therefore has no one can prescribe a field. It is impossible to explain within the compass of a few pages. There is no single person or direction viewed for this subject, as this has been defined by different persons in different ways, but the basic principles to which they all point to, are the same. As expounded by one of the foremost Ayurvedists, Dr. Gananathsen Saraswati, who said "the theory of Vayu, Pitta and Kapha begin where modern physiology ends, for it endeavours to explain all the physiological processes as also the principles which guide them.

The theory of Vayu, Pitta and Kapha was a great discovery, which unfortunately has been neglected by Western scholar, judging by the wrong mercantary translations, rendering these terms as wind, Bile and Phlegm. The proper explanation of this theory may take up the treatise by itself, but let me observe here in passing that the word Vayu does not imply wind in Ayurvedic literature, but comprehends all the phenomena which come under the functions of central and sympathetic nervous systems.

Pitta does not essentially mean Bile, but signifies the functions of thermogenesis or heat production or metabolism comprehending in its scope the process of digestion, caloration of blood and formation of various secretions and excretions which are either the means or the ends of tissue combustion.

Kapha does not mean phlegm but is used primarily to imply the functions of thermotaxis or heat regulations and secondarily the formation of the various preservative fluids, e.g. mucus.
The Greek and Roman physicians expounded humoural theory by borrowing ideas from Ayurveda, but failed to grasp the true meaning of the theory. The truth and value of the Ayurveda theory can be verified. It offers sensible explanation of certain otherwise inexplicable facts like the causation and amelioration of diseases and their symptoms. To be more explicit, these principles known as Vayu, Pitta and Kapha occur in two forms
1. An invisible or essential form, which mainly guide the physiological processes pertaining to them naturally.
2. A crude or visible form, products (as secretions or excretions) of those processes induced by these essential forms.

Ayurvedic classification of properties of drugs

In Ayurveda, drugs (vegetable, mineral and Animal) are broadly described and classified under five properties viz.
1. Rasa or the taste : Six kinds, sweet, sour, salt, pungent bitter, astringent. The sweet increases the activity of Kapha in the body.

The Sour and Salt increases activity of- Pitta and Kapha
The Pungent increases activity of- Pitta and Vayu.

The bitter and astringent increases activity of- Vayu only

1. Rasas

Other than those which increases the activity of a particular dosha would provide detrimental to the activity of that dosha. Thus sweet, Bitter or Astringent would reduce Pitta Pungent, Bitter and Astringent would reduce Kapha.
2. Gunas

The attributes of various substances are divided into 5 classes namely, heavy unctuous, keen and sharp, dry and light each representing the attributes of the earth, water, fire, air and ether substances respectively.

These are further divided into large number of attributes like sharp, Hard, Thick, Cold, hot Mild, Soft etc. The drugs carrying the attributes of water and earth substances increases the activity of Kapha. Fire substances of Pitta and air and ether substances of Vayu.

3. Veerya

It is the potency of drug. It is either heating or cooling. The heating is dominant in Pitta, cooling is common factor in Vayu and Kapha.

4. Vipaka

It is the consequence of change or action which the drug undergoes in the human organism. It is of three kinds i.e. sweet, sour, pungent. As a general rule the sweet and salt rasas are changed in the course of Vipaka into sweet the sour remains sour and the pungent bitter and astringent are transformed into pungent sweet, strengthens Kapha, the sour Pitta and pungent Vayu.

5. Prabhava

It is the dominating influence or the active force of drug. There may be two herbs similar in all four properties but might show different results owing to its fifth quality of prabhava.

Prabhava may be interpreted as the manifest action. Overall, it is very difficult to translate the fine properties of drugs in
terms of the physicochemical or biological properties or actions, as we speak of in modern medicine. This has lead to a frustrating experience for many workers. The practical way out of this is to screen the drugs as they are for pharmacological actions and therapeutic utility and accept or reject them accordingly. The present study is one such exercise.
LIKE INCREASES LIKE AND VISHESHANE DECREASES DISLIKE

In Ayurvedic Science basic thinking and practising is based on certain principles. While using any material or drug, one thought is given to "like thing increases like" and opposite to this "dislike thing vanishes by specific reduction of a particular property"

After examination of an individual, if it appears that out of all dhatus considered in Ayurveda, predominantly Mansa Dhatu is inadequate, then in such a condition extract of Mansa will work to improve muscle tissue. Similarly Shell Calf (mother of pearl), Shringa Bhasma, Egg shell Bhasma etc. are helpful in improving bones.

Oil, Ghee and Wheat are all heavy and fatty ingredients, which improve fat. Shatavary (Asparagus recemosus) Milk and Sugar are supposed to be helpful in improving Dhatu like Rasa, i.e. Blood, and musculature as all are galactogens. Loha Bhasma and Mandur Bhasma are useful to improve components of blood, therefore overall improvement in haemopoietic system takes place.

Udida, Ashwagandha, Sugar milk act indirectly, all Rasas are improved by use of these. This will lead to improvement of Shukradhatu. There is no direct action on Shukradhatu, but indirectly as the overall health is improved which in improves Shukradhatu.

Almond and Akrod improve, Nervous functions and Intelligent Quotient (I.Q.), may be proved use of these two.

From above examples, these are claimed to work in combinations. There is no experimental proof for it. or sufficient
data is not available, for accepting it. All these overall appear to be tonic and basically if health is good, they will keep away diseases, but there is lack of adequate scientific data to support to all above examples.

If we come to second thought of Ayurveda, while dislike is decerased. Ghee sugar and amala (phylanthus amblion) having properties, such as light and soft, are very useful in suppressing Pitta by acting against Pitta and net effect is reduction in Pitta. Kulith are dry, light acting opposite to Kapha and hence useful in suppressesing Kapha. Oil, Ghee, Wheat - fatty items produce opposite effect on Vata - So Vata is reduced by use of them.

Suvarnamakshikadiwati

This is a compound Ayurvedic preparation, containing seven ingredients. This is prescribed in Ayurveda for a number of indications. We have tried to screen this preparation for its pharmacological actions in animals. It is very difficult to prove by experimental techniques, the different claimed pharmacological actions and correlate them with clinical indication.

It appears that in anaemia or diseases likely to produce anaemia, we can support its efficacy. At the same time, hepatoprotective effect can be correlated, still there are a number of disadvantages as same results cannot be extrapolated to clinical conditions so as to get repeated consistent results. We could point out some side affects, in case of this preparation. A fall in B.P. which could be beneficial in the elderly hypertensives, in others one should keep in mind this action on normotensive. As regards fabulous indications like cure of Valvular disorders it is
difficult to comment on isolated case reports with inadequate proof by newly available techniques. Here we suggest that clinical trials should be undertaken for those indications in which experimental data for extrapolation is not available. For this a well designed long term study keeping adequate records and observations on large number of patients are essential using well equipped hospital settings.

One very specific indication is Asthenia (Manodaurbalya). It is psychic condition, for which there is no suitable animal experimental model. Other methods available are also inadequate to correlate with clinical symptoms, as similar changes cannot be reproduced in animals. In such situations study on many patients by questionnaire or individual interviews is the only alternative. By carrying out such a clinical study, one may get an idea to whether there is a relief from particular symptom. Probably in such mental disorders, person is not healthy, his food intake and other activities are also impaired which leads to more weakness and that may be improving indirectly by administering such preparations.

In clinical studies also, there are drawbacks such as placebo effect, we see in many clinical drug trials that there are placebo reactors. Therefore false positive and false negative reporting is likely to be there.

To overcome, this or to reduce this error in study, Multi Centric clinical trials on thousands of individuals should be carried out, e.g. for the use of Aspirin in myocardial infarction, number of centers had undertaken clinical trials on number of subjects. Same thing is true in case of streptokinase. Such trials for Ayurvedic formulations should be planned along the line of
allopathy, for their clinical trials.

Observations by a competent person, establishment of a diagnosis. Use of proper control, (self control or before and after readings) are essential with sufficient number of persons in each group. Symptomatic improvements by virtue of improvement is general condition for anaemia or improved causative condition by drug should be differentiated.

The concept of Panchmahabutha is outdated in the light of modern physics. Our basic physiology functions from atom or subatomic particles, then cellular function, tissue and then body as whole and therefore the concept of Panchamahabhuta is outdated. Drug as a molecule and molecular interactions is our basic concept of drug action and we do not accept these Panchamahabhuta theory as origin of body. People are trying to interpret in terms of modern Physics and Chemistry but they have not succeeded in doing so. 'Given substance produces an effect that is an observation, that is by experience. This the empirical approach, most prevalent in present day studies.

Dietary supplementation in the form of milk or cow ghee, help in two ways improving general condition of the patient and by providing necessary proteins to help to develop the immune mechanism. Dietetic instructions also have a useful as placebo effect which is very powerful.