Traditional Chinese medicines: An assessment*

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A comparative assessment of traditional Chinese system of medicine and Indian systems of medicine is presented in this paper.

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Whenever and wherever the topic of popularising the Indian traditional systems of medicine, of which Ayurveda and to a lesser extent, Siddha systems are in the forefront, is discussed, they are compared with the success of Traditional Chinese Medicines, even in the Western World. The comments of Lord Walton at a Conference on Alternate Medicines, in London that Ayurveda occupies one of the lower rungs of scientifically validated systems, have surprised many in India, since according to its proponents, its long heritage of over 3000 years and its survival and increased usage bear ample testimony to the benefits the system offers to large numbers of people.

European and U.S. interests in alternate systems of medicine have been manifest in many ways. The Regulatory Agencies in many countries are taking a fresh look on many unconventional therapies, which are gaining popularity. The National Institute of Health, USA has started a Division of Alternate Systems of Medicine, where the systems being investigated include seemingly some occult ones, such as Yin and Yang, Aroma therapy, Shark cartilage therapy, Acupuncture, etc. In addition, the field of Botanical Drugs, which has its basis on medicinal plants, mostly sourced from the tropical countries and China, is also receiving attention as nutraceuticals, drugs, sources of modern drugs, and as leads for the discovery and development of modern drugs. Over the years, plants have always been a source of drugs; Digitalis, Belladona, Morphine, Codeine, Reserpine, Vinca alkaloids, Taxol, Artemesinin, etc. were all derived from plants. The entire development of steroids owed its origin to Dioscorea and Solanum species. Hundreds of plants which are traditionally used in oriental medicine from India, China, Tibet, Vietnam,
Thailand, etc. are, however, still to be validated for their safety and therapeutic utility by modern scientific methods.

Against the above background, it was interesting to look at Traditional Chinese Medicine (TCM) as a system of Medicine with a long history of development and perceived clinical utility. During a recent visit to Singapore, the author had an opportunity to get an overview of TCM as it is practiced there by practitioners and produced and distributed by specialised industrial units and used by large populations in this region. These drugs are used as food and nutritional supplements, for general well being, as palliative therapy for certain diseases and as curative products for specific conditions. The endorsement of the use of TCM by WHO, which decreed that TCM has a place in human healthcare has helped increase their popularity among the general population and for primary healthcare in many countries.

Traditional Chinese Medicines

The source of information presented here is largely from a study of one of the leading TCM companies, Eu Yan Sang, which has a network of over 40 retail and wholesale outlets in Singapore, Malaysia and Hong Kong, in addition to Joint Ventures in Australia and the U.S. The turn-over of the Company in 2000 was over U.S.$ 80 million and the number of products sold for a variety of indications was well over 100 proprietary items with established Brand equity.

In addition, an analysis of an Anthology of raw materials used in TCM revealed a surprising variety of inputs for these drugs from sources which have been classified as Seeds (69), Roots (61), Rhizomes (21), Leaves (11), Flowers (15), Whole plants (22), Bark (14), Branches (12), Minerals and Resins (17), Marine Products (10), Animals (17), Insects (13) and Cryptic sources (12). While there is some commonality between the plants and plant parts used by TCM and traditional medicines from India, Tibet, Vietnam, etc., TCM uses beside these a wide variety of raw materials of animal and mineral sources. Among the minerals used are Glaubers salt, Hepatite, Blue Mica, Magnesite, Calcium sulphate, etc., while the animal sources include Lizards, Antelope Horn, Bat faeces, Earthworm, Deer antler, Deer tail, etc. Scorpion, Centipede, Cockroaches, Hornets Nest, Female Gladfly, etc. are also used. As part of the cryptic sources are included Swallows Nest, Human placenta, Human hair, Human urine sediment and Cordyceps, which is a fungal material originating from a beetle.

It is thus obvious that from their contents point of view, the TCM relies on several exotic sources, belonging to the Plant, Animal, Marine and Mineral kingdoms. The logistics of collection, processing, and quality control are naturally extremely complex, apart from the problem of their availability and use without upsetting the natural ecological and environmental balance.

Processing of Traditional Chinese Medicines

It is claimed that all TCMs are processed according to the procedures
available from Chinese Medical Classics. These classic texts, having been published between the 2nd and 19th Century A.D., are of much more recent vintage compared to Ayurvedic texts. Quite a few of them have been classified and titled according to certain therapeutic concepts, such as Theory on Cold-induced Diseases (Han 2nd Century), Formulas Worth Thousands of Gold (7th Century), Imperial Formulas from Tai Ping Ena (11th Century), Art of Treatment and Understanding Childhood Diseases (12th Century), Formulas to Aid Living (13th Century), Important Formulas for Longevity (16th Century), Collection of Analysed Herbal Formulas (17th Century), Systematic Differentiation of Heat-induced Diseases (18th Century), Treatments in Externally Applied Medicines (18th Century) and Fu Quing-Zhu's Classic on Women's Health (19th Century).

The preparations developed, based on the medical classics generally contain multiple ingredients of plants, animals and mineral origin with their number ranging from 5 to 20 in each. With such large number of components, there are bound to be problems in their standardisation and quality control, both at the raw material and the finished product stages. In recent times, there have been criticisms of the quality of TCM available in the market both for their claims of efficacy, as well as their safety. Terms such as the ‘Chinese Drug Fever’ are being increasingly used in the media.

The Chinese State Pharmaceutical Administration in 1996 launched the system of Quality registration, including regular inspection by the Agency, which covers as many as 2125 products from 192 companies in 30 provinces. GMP management in the production facilities have been emphasised to ensure that the products reaching the markets are properly produced and quality controlled. Even within China, under orders issued by the State Council of China, illegal street markets for TCM have been stopped. More control is being exercised on the collection, classification, commercial identification, storage and quality standards of raw materials used in manufacture. Even though as many as 3000 plants are mentioned as useful for the production of TCMs, the most commonly used, number around 500, of which, half are to-day available from cultivated sources. China is emphasising the need for protection of its endangered plant and animal species and preserving her Biological Diversity. Modern methods of breeding including cell and tissue engineering, genetic technologies and fermentation processes are being developed with the help of academic laboratories. So also basic research to understand the mechanisms for their action as well as to identify the active principles in selected plants are on-going in many research institutions. These attempts are outside the efforts carried out to develop new drugs by modern methods, based on the reports on TCMs, both in the classic texts as well as from experience with patients. An example is the discovery and development of the sesquiterpene lactone, Artemesinin, isolated from the Chinese Qingho (Wormwood) as an anti-malarial drug. The classic Chinese texts have reported this plant to be effective for ‘fever at
night and cold feeling in the morning”, which, as we know, are the symptoms of malaria for which very few drugs have been discovered in the last thirty years. Perhaps many more such discoveries could come out of the efforts of Scientists, who are familiar with both systems of medicines.

**Indications for TCM**

Going by the product portfolio of one of the leading TCM companies, it is clear that the major indications for which these drugs are used are for chronic conditions, degenerative diseases and food and environment-related problems. Some of the examples are cough and cold remedies, children’s minor ailments, pre- and post-maternity care, fatigue, indigestion, constipation, non-specific fevers (puo’s), headache, dizziness, hangover, etc. There have been claims that some of the TCMs are useful as anti-hypertensives, but it would appear that none of them has been subjected to controlled clinical trials. While individual plants and their constituents are being tested for their pharmacological activities, there are hardly any attempts to validate the efficacy of these finished drugs using established animal models.

**Lessons from TCM**

Are there lessons to be learnt by the Indian Systems of Medicine from the experience and practice of TCM? Purely judging from the commercial success of TCM in many countries, it would appear that the products of this system of medicine have been better packaged, presented and marketed to meet the increasing demand for alternative therapies, all around the world. Looking at the increasing interest in TCM in the Western market and their double digit growth it has been witnessing for the last several years, products from the Chinese system are more successful than products from the Indian Systems of Medicine. However, if one studies the history of usage and their rationale, the Indian System of Ayurveda and its products have a richer heritage, better documentation and are better validated through clinical experience than TCMs. It, therefore, stands to reason that more attention needs to be paid to further the cause of Indian Systems of Medicine as an Alternative or Complementary System to Modern medicine, even for the Western markets. As in the case of TCMs, the stress should be to market Ayurvedic medicines of the quality and nature prescribed by the Ayurvedic texts and practitioners, rather than converting them to modern drugs, thereby sacrificing the practice and principles unique to the system.