

Introduction

Since prehistoric times, the plant kingdom has been an inseparable part of the lives of the Chinese people. In their search for food and medicine and through a long period of trial and error, the Chinese have accumulated a vast amount of knowledge and understanding about various plants. They have recognized that some plants can be served as food while others have purgative, analgesic, hemostatic, anti-inflammatory and other functions, and thus can be served as medicine for certain diseases. Some botanicals can be served both as medicine for certain diseases and as food with nutritional value. This is generally considered to be the basis for an old Chinese saying “Food and medicine have the same origin.” The Chinese classical book “Huai Nan Zi Xiu Wu Xun” has some vivid descriptions about the ancient Chinese in their search for food and medicine. For example, the ancient Chinese people were described to “Taste a hundred herbs and encounter 70 toxic materials in a day.” With time, useful plants with no or minimal toxicity were passed down from generation to generation through a process of “natural selection” and eventually developed into various Ben Cao (dispensatories and pharmacopoeias) of different times after a written language was developed.

The written record on herbal medicine in China dates back approximately 3,500 years to the Shang dynasty (ca. 1520-1030 B.C.). While the Egyptians and Babylonians practiced a form of medicine that was probably older, the system of Traditional Chinese Medicine (TCM) is the oldest continuing practice. The earliest treatise devoted primarily to health and medicinal matters, Huang Di Nei Jing (Yellow Emperor’s Classic on Internal medicine), is ascribed to legendary ruler Huangdi, who supposedly lived 5,000 years ago. The first text on medicinal herbs that included natural products of plant, mineral and animal origin, Shen Nong Ben Cao Jing, was thought to have been written in Han Dynasty (100 B.C.-200 A.D.).

The term “Ben Cao” is used generically for dispensatories and pharmacopoeias since the Han dynasty. “Cao” refers to plants, and “Ben Cao” has been used loosely to cover all herbal medicines that include natural products of plant, mineral and animal origin. The Shen Nong Ben Cao Jing recorded and classified the pharmacological properties, functions, indications and directions for usage of 365 natural substances, with 239 being of plant origin, 43 of mineral origin, 65 of animal origin and 18 duplications.

Between the period of the Han Dynasty and 1900 A.D., the number of works dealing exclusively with medical matters exceeded more than 2,600.¹ Until the Tang Dynasty, the medical knowledge had advanced considerably along with the rapid development of economy and productivity. In 659 A.D., a committee of 22 scholars and physicians appointed by the Emperor Kao Zung published Xin Xiu Ben Cao (New Revision of Materia Medica), a manual on the natural products of plant, animal and mineral origins. The work was the first treatise on herbal medicine to have official sanction, and it is generally considered to be the first pharmacopoeia in the world.

The most celebrated compendium on Chinese materia medica, Ben Cao

Gang Mu (Compendium of Materia Medica) by Li Shi Zhen (1518-1593 A.D.), was published in 1596 A.D. during the Ming dynasty (1368-1644). Ben Cao Gang Mu consists of 52 volumes, documenting 1892 medicinal herbs and 11,096 herbal formulas. Each natural substance is described in detail with regard to appearance, properties, collection methods, preparation and use. The book took 30 years to complete and is not only an encyclopedic dispensatory, but also a comprehensive work on natural history in botany, zoology and mineralogy that is worthy of comparison with the best scientific work of the Renaissance period in Western countries.² Another impressive classic on Chinese herbs is the “Zhi Wu Ming Shi Tu Kao” (Materia Medica with illustrations), which was published in 1848 A.D. This work consists of 38 volumes with detailed descriptions as well as elaborate drawings of the botany of 1,714 medicinal plants.

There are about 300 to 400 existing Ben Cao from various times up to the nineteenth century, and each has made its own contribution to the system of Traditional Chinese Medicine (TCM). However, China saw profound advancement of herbal medicine after 1949, especially after Chairman Mao’s pronouncement that “Chinese medicine is a great national treasure; we must strive to improve and elevate its status” in the 1950s. The Ministry of Health issued the edict in 1955 urging intensification of studies on traditional medicine. Consequently, numerous universities, colleges, technical schools and research institutes of TCM were established at national, provincial and local levels. As a result of this increase in TCM studies, several editions of pharmacopoeia of the People’s Republic of China have been published (the latest is the 2000 edition, part I of II is devoted exclusively to TCM while part II of II to Western medicine). The Dictionary of Materia Medica was published in 1975 and included 5,767 herbs with approximately 5,000 of plant origin. The Comprehensive Dictionary of Chinese Materia Medica was published in 1995 and included 8,484 herbs.

In the past decades, Chinese researchers have published an immense amount of modern scientific research work on TCM in both domestic and international journals, and these activities have aroused much interest and spurred further studies by the international medical community. Much work has been done on the botany, pharmacognosy, chemistry, pharmacology and biotechnology of herbal drugs. Most of the scientific research on the herbal drugs either validated the TCM practices, showed agreement with the TCM theory, or led to new clinical indications of Chinese herbs. A few examples are given below to illustrate the remarkable achievements in this area.

In a recent study³ of the effects of three Chinese herbs on the alteration of a human subject’s pulse, *Panax ginseng*, *Panax quinquefolium* roots and *Ganoderma lucidum* were shown to have a specific effect on the Fourier components of the pulse in radial artery pulse examination. The result was in agreement with TCM descriptions.

Another area that TCM has demonstrated value is in the area of reducing the side effects resulting from cancer treatments. For example, Liu and Wu⁴ studied 32 cases of postoperative osteogenic sarcoma treated by a combination of chemotherapy and Chinese medicinal herbs and compared them with 26 similar cases as control group. The drugs used in chemo-

therapy consisted of two regimens, DDP and high-dose MTX plus VCR. The results showed that the side effects of chemotherapy in the control group were consistent with the literature, while the group treated with Chinese medicinal herbs suffered less toxic effects. The difference between the two groups was statistically significant. The medicinal herbs used to reduce the side effects induced by DDP included *Pinellia ternata*, *Amomum cardamomum*, *Bambusa textilis* and *Citrus reticulata*.; while the herbs used to alleviate the adverse effects of high-dose MTX plus VCR included *Gypsum*, *Anemarrhena asphodeloides*, *Rehmannia glutinosa*, *Ophiopogon japonicus* and *Scrophularia ningpoensis*.

Many Chinese herbal formulas boost the immune function, the natural defense system of our body. A famous example in this regard is the *Shi-quan-da-bu-tang*, SQT⁵, which has been shown to work as a potent biological response modifier. SQT, a classical herbal formula, was formulated by Taiping Hui-Min Ju (Public Welfare Pharmacy Bureau) in the Chinese Song Dynasty in 1200AD. It is prepared by combining a mixture of 10 medicinal herbs that are designed to tone the blood and vital energy and strengthen health and immunity. This potent and popular prescription has traditionally been used against anemia, anorexia, extreme exhaustion, fatigue, kidney and spleen insufficiency, and general weakness, particularly after illness. Recently, SQT has been selected as an effective, potent biological response modifier among the 116 Chinese herbal formularies evaluated with respect to restore immunity in cancer patients, potentiate the therapeutic effect, and ameliorate adverse toxicity of anticancer agents.

During the past eight years, animal models and clinical studies have revealed that SQT demonstrates extremely low toxicity (LD50>15g/kg op murine), self-regulatory and synergistic actions of its components in immunomodulatory and immunopotentiating effects (by stimulating hemopoietic factors and interleukins production in association with NK cells, etc.), potentiates therapeutic activity in chemotherapy (mitomycin, cisplatin, cyclophosphamide and fluorouracil) and radiotherapy, inhibits the recurrence of malignancies, prolongs survival, and ameliorates and/or prevents adverse toxicities of many anticancer drugs.

To accompany the many remarkable achievements in TCM is the action taken by the U.S. government. The National Institute of Health established an Office of Alternative Medicine in 1992 and is currently sponsoring nine pilot projects on research involving the use of acupuncture or Chinese herbal medicines⁶, with five being of Chinese herbal medicine. There clearly are differences in concept between TCM and Western medicine. A principle difference is that TCM clearly prefers the use of combination of herbs, and Western medicine often looks for the "magic bullet" and, often, a well-defined single chemical agent is used. The Chinese medicine is based on the principle that every formula consists of an emperor herb, the main beneficial component; the ministers, which support the emperor herb in its action; the assistants, which provide complementary action; the harmonizers, which help hold the blend together; and a directional herb, which supports the function of the meridians. An excellent

illustration of these different categories of herbs is given by Dweck⁷. For whatever reason, a combination of herbs and plant extracts tend to have less toxic effects than a single chemical agent that occurs naturally in the same plants.

Another major difference is that, in TCM, the emphasis is on promoting or strengthening wellness, not just remedying the disease after it occurs. Chinese medicine is a blend of philosophy and healing, both spiritual and physical. TCM has undoubtedly been influenced by ancient philosophies, especially Taoism. For example, Taoist concepts of yang sheng (nourishing life) teach to preserve health by strengthening the natural healing power of the body, which is an integral part of TCM. Since ancient times, an elixir of immortality has been intensely sought by the ancient rulers and the aristocracy as well as wealthy people. Thus, the priority has been given to promoting and preserving health rather than treating and curing illness, and many Chinese herbs were found to possess health-promoting properties and were believed to prolong life. For example, He Shou Wu is an herb used to promote longevity and prevent gray hair. Ginseng is believed to revitalize the mind and the body and to prolong life.

Even though our knowledge, understanding and insight of TCM is thousands of years old, it has an important role to play in the wake of recent “back to nature” trends in modern times. The fear of old age and death has always spurred mankind to use the secret powers of nature to slow down the natural aging process, and this will surely continue. The Western world has rediscovered ancient Chinese homeopathy and medicinal plants. Chinese healing methods – whether acupuncture or herbal medicines— are in the foreground of both medical and cosmetic personal care today. The concept of Taoist’s Yang Shen Zhi Dao doctrines of nourishing life and principles of preserving health still have a valid meaning to modern consumers who demand more than simple cosmetics by wanting treatment and protection. Needless to say, TCM, a system of herbal medicine that has continually stood the test of time, is a great treasure house, wherein lie many medicinal plants that are likely to provide many health benefits in treatment and protection.

This book mainly deals with Chinese herbal plants that have been used for centuries as health remedies and beauty aids in China as well as in many other Asian countries. During the past 2000 years, TCM has been disseminated to many countries around the world and has become an important part of world medicine.

Communication of Chinese medicine and pharmacology to India and Vietnam took place as early as Han Dynasty (before 24 A.D.).⁸ It is realized that the traditional Indian system of medicine is a unique system of its own, and there are similarities between the two systems of herbal medicine and many herbal plants have been used in both systems.^{9,10}

This book describes 70 Chinese herbal plants that are commonly used in TCM and are considered to be of cosmetic importance. They are organized alphabetically according to their English names. For each medicinal plant, its English name, Chinese name, Latin name, family, parts used, collection,

botanical description, habitat, TCM indications, TCM functions, source of earliest record, chemical constituents, pharmacology and cosmetic evaluation are presented. Synonyms of the English name and the botanical Latin name are also provided when appropriate.

References:

1. Unschuld PU. *Medicine in China, A History of Pharmaceutics*. University of California Press, Berkeley (1986).
2. Way EL Liu YQ Chen CF. Perspective and overview of Chinese traditional medicine and contemporary pharmacology. *Progress in Drug Research* 1996, Vol.47 (E. Jucker, Ed.), 131-164.
3. Wang WK Chen HL Hsu TL Wang YY. Alteration of pulse in human subjects by three Chinese herbs. *Am J Chin Med*, 1994, 22(2), 197-203.
4. Liu JQ Wu DW. 32 cases of postoperative osteogenic sarcoma treated by chemotherapy combined with Chinese medicinal herbs. *Zhong Xi Yi Jie He Za Zhi*, 1993 Mar, 13(3), 150-152.
5. Zee-Cheng RK. Shi-quan-dabu-tang (ten significant tonic decoction), SQT. A potent Chinese biological response modifier in cancer immunotherapy, potentiation and detoxification of anticancer drugs. *Methods Find Exp Clin Pharmacol*, 1992 Nov, 14(9), 725-736.
6. Naeser MA. The practice of Chinese medicine: The treatment of diseases with acupuncture and Chinese herbs. (Book Review), *New Eng J Med* 1995, 333(4), 262-263.
7. Dweck AC. Botanicals-Research of Actives. *Cos & Toil* 1997, 111 (1), 45-57.
8. Dai Y Luo XY. Functional food in China. *Nutrition Reviews*, 54(11), S21-S23.
9. Jain SK. Ethnobotany and research on medicinal plants in India. *Ciba Found Symp*, 1994, 185, 153-164; discussion 164-168.
10. Dweck AC. Indian Plants. The medicinal plants of the Indian region. *Cosmet & Toil* 1997, 112(8): 37-52.