

Brief Introduction of Traditional Chinese Medicine(TCM) and Possible Measures to Protect the Endangered Species of TCM

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ABSTRACT

Recently the endangered species of wild fauna and flora used in TCM have been held under a spotlight by CITES-implementing countries. USA and other western countries have suspected Oriental countries might not keep the regulation of CITES effectively for the continuous use of endangered species such as tiger bone, rhino horn, bear gallbladder and others. However, most of Oriental countries have tried to keep CITES truly. The misunderstanding of culture and thought in Oriental countries can be one of important factors. Thus, for effective implementation of CITES, we have to keep communication with western countries especially in the principles of TCM or others and vice versa. In addition, TCM using countries and counterpart countries should prevent illegal trade of endangered species in TCM and also try to develop natural or synthesized substitutes for endangered species.

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We have to continue to develop methods to artificially propagate endangered species, while trying to alleviate the ethical problems entailed by breeding in captivity. In south Korea we also have to make known our implementation of CITES such as reinforced law for prohibition of using CITES items, public awareness by training program, brochure and surveys to other countries.

Key Word : CITES, TCM, Illegal trade

INTRODUCTION

Oriental medicine is a traditional medicine developed over the centuries on the basis of the theories of Yin & Yang and the five elements originating from cosmogony¹⁴⁾. Traditional Chinese Medicine (TCM) has influenced other East Asian countries to develop their own indigenous medicines, for example, TKM (Traditional Korean Medicine) in Korea and Kampo in Japan. The W.H.O. has recognized the role of TCM in the well-being of people and approximately \$14 billion dollars are spent annually on alternative medicine^{12,13)}.

Although the role of TCM for the health of the world cannot be under-estimated, western people, based on poor information about TCM, used to think TCM was a type of shamanism and a useless medicine compared to modern western medicine. We are trying to conserve the endangered species of TCM. In TCM we consider the human body to be a miniature of the cosmic Yin and Yang, and we believe that diseases are often caused by disharmony between Yin and Yang, and therefore we have to restore the balance between Yin and Yang for health. This is why we prescribe the

taking of boiled solutions or powders derived from natural herbs for health. With this therapy, TCM has contributed to the health of the world for centuries.

Recently the endangered species of wild fauna and flora used in TCM have been held under a spotlight by CITES-implementing countries. Today we have a problem : how can we effectively conserve the endangered species from which we derive such items as tiger bone, rhino horn, bear gallbladder and others used in TCM? This question must be successfully resolved, of course. A Korean proverb states : if you want to successfully defeat your enemy, you must know his situation thoroughly in advance. Likewise, we have to know the principles of TCM and respect the cultures of countries using TCM, and correctly understand what TCM practitioners require.

Thus, I want to briefly introduce the principles of TCM, and, on behalf of the TCM community, I would like to put forward my opinion on the endangered species of TCM.

Principles of TCM

In TCM we consider the human body to be

a miniature of nature : heaven for Yang and earth for Yin. Man lives in nature and so man is a mixture of Yin and Yang. In other words the cosmic relationship of Yang and Yin, light and darkness is carried over into the physical structure of man. We have to establish a balance between Yin and Yang for health, since we believe diseases are caused by the disharmony between Yin and Yang. We usually only use natural products to balance Yin and Yang, because TCM was formed on the basis of best-suited to your health needs. For these reasons, we put much value on the Qi and tastes the principle of nature. We classify all the plants and animals into Yin and Yang categories by the theory of four Qis and five tastes. For instance, the four Qis are cool, cold, warm and hot and the five tastes are salty, bitter, sweet, stringent and sour. Cool or cold Qi can calm down the excessive Yang, and warm or hot Qi can stimulate the depressed Yin. Examples are that it is very helpful for us to drink cold water or to eat a cool cucumber when feeling hot, while we can drink a hot tea of Ginseng or Ginger when feeling too cold.

We have likewise classified all plants and animals into Yin and Yang categories according to their tastes and affective qualities¹⁴⁾.

We Orientals are accustomed to taking boiled solutions or powders of crude drugs for health. It is our culture and the principle of TCM. If we think, for example, of someone with a headache : the western doctor will immediately prescribe an analgesic such as aspirin, whereas the oriental doctor will try to establish the exact balance between Yin and Yang and then treat the headache by harmonizing any abnormal balance by means of natural drugs or acupuncture and moxibustion. We can thus see the difference between treatment methods of western and oriental medicines. I will give you another example : these days we no longer use rhino horn, but rhino horn is known to be effective in treating several types of bleeding from the nose, throat and gums, particularly when these are accompanied by fever - an excessive Yang case. However, rhino horn is not good for bleeding with hypothermia, which is an excessive Yin case. Knowing the basic

Table 1. Qi & Tastes, Applicable Diseases and CITES appendix of endangered species of TCM⁶⁾

Scientific Name	Qi	Tastes	Applicable Diseases	CITES APPENDIX
Ursidae Bear	Cold	Bitter	Liver diseases, DIC, thrombosis	I
Rhinocerotidae	Cold	Bitter, Sour	Bleeding, Fever, leukemia	I, II
Moschus Moschiferus	Warm	Stringent	Brain and heart diseases	I, II
Saussurea lappa	Warm	Stringent, bitter	Gastrointestinal diseases	I
Cibotium barometz	Warm	Bitter, Sweet	Low back Pain, Renal diseases	II
Gastrodia elata	Warm	Sweet, Bitter	Headache, Dizziness, Convulsion	II

principles of TCM, can also be helpful to you in choosing foods classification of herbs including endangered species.

At this point I would like to introduce the Qi, the tastes and the symptoms to which they are applicable as well as their relationship to endangered species (Table 1). It is here that we will be able to show that TCM is not a superstition but a reasonable science consisting of daily wisdom and systemic principles accumulated over centuries.

Possible Measures to the Protect Bear and Musk

Herbological efficacy and experimental studies

Of the bear parts, the gallbladder has been chiefly used for the treatment of such hepatic diseases as hepatitis and carcinoma, blood clot due to trauma, and thrombosis - all data of which are documented in a classic book on herbology, *Tungyipaochin*, which is briefly outlined in Table 2. *Tungyipaochien*(東醫寶鑑)¹⁵⁾ is a famous book on TCM, particularly in Korea, that most of oriental practitioners have used to look up prescriptions. Of the approximately 4000 formulas in *Tungyipaochien*, bear gallbladder is used in only 6 remedies (0.15%) including those for jaundice, while musk pods have been used, usually with other herbs, in 49 remedies (1.225%) such as for CVA(Cerebrovascular accident) and heart diseases.

The Korean war, which started on June 25, 1950, left much of our mountain regions devastated. Thereafter it was very difficult for

us to find wild bears in South Korea. However, bear gallbladder was needed for hepatic diseases such as hepatitis and hepatic carcinoma, and, on the basis of bibliographical data as well as clinical and experimental data on its efficacy, also in the treatment of jaundice(黃疸), which is often accompanied by hepatic diseases. Bear gallbladder is used on its own, while musk is often mixed with other herbs to make oriental medicinal pills. Although the constituents of bear gallbladder and musk have been isolated, for example, ursodeoxycholic acid(UDCA), chenodeoxycholic acid, deoxycholic acid, cholic acid, taurine in bear gallbladder, and muscone, normuscone, muscopyridine in musk^{3,4)}, people tend to feel that natural ingredients are more effective than their isolated and artificially produced counterparts. This is our problem.

Death rate of hepatic cancer in TCM using countries

According to the 1995 cause-specific death rate tables of the WHO¹²⁾, the death rate due to hepatic cancer was 33.4 per 100,000 men in South Korea and 24.1 in Japan, while it was only 2.2 per 100,000 men in the USA, 2.0 in Canada and 4.2 per 100,000 men in Germany. In the case of women, the death rate for hepatic cancer was 10.2 per 100,000 in South Korea, 8.1 in Japan, while 1.0 in the USA, 0.8 in Canada and 2.3 per 100,000 women in Germany (Fig 1 and Fig. 2). These results suggest that men are more apt to be succumb to hepatic cancer than women, and people in East Asian countries die of hepatic cancer at a higher rate than in Western countries. I

think that this is one of major reasons that Asians often use bear gallbladder.

of illegal trade by Korean government.

It is true that the public has often been

Table 2. Herbological efficacy and experimental studies of Bear Gallbladder and Musk Pods

Endangered Species	Herbological Efficacy in Classic Books	Applicable Diseases	Experimental Data
Ursidae Bear (熊膽) ^{1,5,7,8,9)}	治黃疸,暑瀉, 暑瀉, 小兒驚癇, 喉痺, 痔惡瘡	疴疾,Liver diseases, DIC, thrombosis	1.Protective effect to the damage of liver by CCL4 & Aconitine, 2.Antiadjutant arthritis, 3.Antiallergy
Moschus Moschiferus (麝香) ³⁾	能開竅醒神, 活血通絡, 散結止痛. 用 于熱病驚風, 中風神志昏迷, 心腹暴 痛, 腹部腫塊, 肢體麻木疼痛, 跌撲損 傷及癰疽瘡瘍.	Brain and heart diseases	1.Brain damage 2.Atherosclerosis 3.Coronary disease

Legal trade of bear gallbladder and Musk

Some delegates may think TCM is a target in the struggle for the conservation of the species from which bear gallbladder and musk are derived. In some respect this is true.

However, habitat loss and poaching are also important problems to be discussed. In Korea, the data for total bear gallbladder and musk imports are as follows : in the case of bear gallbladder, 14.45 kg in 1992, 47 kg in 1993, nothing in 1994, 0.95 kg in 1995 and 66 kg in 1996; and in the case of musk, the data are 317 kg in 1992, 324 kg in 1993, 317 kg in 1994, 715 kg in 1995 and 254 kg in 1996. From the above data, we can see that the average imported volumes of bear gallbladder and musk are 24.69 kg and 385.4 kg, respectively. We can also notice a fall in the volume of imported musk in 1996 compared to the previous years as well as see that the legal trade in bear gallbladder increased a little in 1996 because of the strict prohibition

misinformed as to the efficacy of bear gallbladder and musk as tonics. This is the reason that people have often illegally acquired these to use in general everyday well-being. For this reason we thought that the prohibition of some trade in bear and musk was an important act in order to effectively protect these species and have been intercepting illegal bear gallbladder and musk at customs. We have also published 20,000 stickers for the herbal shops and related communities, and distributed 10,000 leaflets to the public to raise awareness of the need to conserve the bear. Korea Oriental Medicine Association has already published, in 1996, the Journal of Traffic East Asia to promote public awareness and, has accepted the CITES as a compulsory subject

Furthermore our Ministry of Health and Welfare has, twice since 1996, conducted for the yearly training programs for oriental medical doctors .surveys of randomly chosen

herbal shops to assess the extent of and, hence, to prevent the illegal trade of bear gallbladder. During the first survey, conducted from April 10 to April 30, 1996, only four shops of the 88 herbal shops surveyed were found to be in possession of bear gallbladder, with no illegal trade found in the three major cities, Seoul, Taegu and Pusan. The second national survey found that of 28, 209 pharmacies, oriental clinics and herb wholesale shops, only 69 shops possessed bear gall bladder in an amount totaling only 14kg.

allow control of the overpopulation of bears which is harmful to the normal ecological balance.

With sincere analysis we reach the conclusion that allowing legal trade is better than a moratorium. However, for the successful prevention of illegal trade, we need to share the responsibility and to extend the cooperation between the importing and exporting countries in the implementation of CITES requirements.

Table 3. Comparison between *Saussurea lappa* & *Cibotium barometz* and Their Possible Substitutes^{2,3,10)}

Endangered species	Herbological Efficacy	Applicable Diseases
<i>Saussurea lappa</i>	行氣止痛, 腹脹痛, 嘔吐, 腹瀉, 痢疾	Gastrointestinal diseases as indigestion, anorexia, diarrhea
<i>Amomi Fructus</i>	行氣寬中, 健胃消食, 胃脹痛, 食慾不振	Gastrointestinal diseases as indigestion, anorexia, diarrhea
<i>Cibotium barometz</i>	補肝腎, 強筋骨, 壯腰膝, 去風濕	Musculoskeletal diseases as low back pain, Knee pain, arthritis, deficiency of renal hormone
<i>Eucommiae Cortex</i>	補肝腎, 強筋骨, 腰膝酸痛, 筋骨痛	Musculoskeletal diseases as low back pain, Knee pain, arthritis, deficiency of renal hormone, hypertension

I want to insist that legal trade of bear gallbladder and musk should be allowed, at least for the medicinal purposes and scientific research. If we allow the legal trade of abundant bears to meet the requirements of the most urgent patients, while preventing casual sport-hunting and poaching, this will allow the current price of bear gallbladder to fall, and eventually deter illegal trade as the economic law of supply and demand will see a resulting fall in profit. Legal trade will also

Development of natural substitutes from abundant species

We have tried to isolate the chief constituents of the ingredients of TCM remedies, such as bear gallbladder and musk, which are derived from endangered species. However, simply requiring TCM practitioners to use substitutes may be a mistake because TCM practitioners, according to the principles of TCM, are required to use only natural ingredients. Thus the

problem becomes what to do in order to induce TCM practitioners to stop using endangered species. We have to try to find suitable alternatives that truly satisfy TCM practitioners. This can be done through the artificial propagation of the endangered species of TCM while accounting for the ethical problems that this entails, and also the isolation of the effective constituents derived from endangered species. Besides these, I would also like to suggest that we develop natural substitutes from nonendangered species that are potentially as effective, or even more effective, in treatments than those that TCM currently derives from endangered species. At the International Symposium on Traditional Chinese Medicine and Wildlife Conservation¹¹⁾ in Hong Kong in 1996, the development of natural substitutes was proposed. For instance, I can suggest Amomi Fructus(砂仁) for Saussurea lappa(木香) and Eucommiae Cortex(杜仲) for Cibotium barometz(狗脊) as substitute plants as seen illustrated on the attached herbological table (Table 3). I also hope that this issue and my ideas will be discussed sincerely by working groups.

CONCLUSION

1. Traditional Chinese Medicine in East Asian countries should be developed as a supplement to western medicine and as an alternative medicine for human health without undermining the implementation of CITES.

2. The legal trade and sustainable use of bear gallbladder and musk pods should be allowed only for medicinal purposes and scientific research under the condition that illegal trade and abuse are prevented.

3. Illegal trade of endangered species can be effectively prevented only where responsibility for prevention is shared and there is cooperation between the importing and exporting countries.

4. We have to develop the natural substitutes from plants and animals that are in abundance as well as to isolate the effective elements of natural remedies.

5. We have to continue to develop methods to artificially propagate endangered species, while trying to alleviate the ethical problems entailed by breeding in captivity.

6. We should maintain an exchange of information and communicate with each other for the successful conservation of endangered species.

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