

Healthy People Healthy Wildlife

Proceedings of the
First Australian Symposium on
Traditional Medicines
and Wildlife Conservation

Sydney, Australia
August 1997

TRAFFIC OCEANIA



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OFFICIAL OPENING ADDRESS

Ms Helen Sham-Ho MLC.

It gives me great pleasure to open the first international symposium on Traditional Chinese Medicine and Wildlife Conservation in Australia. I would like to apologise on behalf of Senator Robert Hill, Minister for the Environment who is unable to attend.

I want to thank the organiser's TRAFFIC Oceania, Environment Australia and the University of Western Sydney- Macarthur, for organising this symposium. May I also extend a warm welcome to everyone here especially those from overseas and interstate.

The purpose of today's symposium is to encourage communication and mutual understanding of Traditional Chinese Medicine practices and its relationship with wildlife conservation. It will include discussions of alternatives to the use of endangered species in Chinese Medicine and the current laws surrounding the import of ingredients for Chinese medicine into Australia.

In recent times this has become a significant issue. With the growing Chinese population in Australia, Chinese traditional medicine is bound to play a more influential role in the medical field.

In NSW alone, the number of migrants from East Asia has increased from 170,524 in 1991 to 285,698 in 1996. In connection with this growth in the Asian population of Australia, we will undoubtedly see an increase in the practise of Chinese Traditional medicine, and hence the resources connected with it.

I have been using Traditional Chinese Medicine regularly for several years. There have been many times when the wisdom of Traditional Chinese medicine has helped me recover from a physical complaint and I know just how beneficial the results can be.

One of the things I like most about Traditional Chinese medicine is its emphasis on prevention and maintenance rather than simply treating an existing condition, as is more commonly the emphasis in Western medicine. In that sense I believe in the pro-active approach of Traditional Chinese medicine which focuses on maintaining well being at all times, which is opposed to a purely reactive one, or remedial treatment only.

I have been continually participating in the development of traditional Chinese medicine in Australia. In 1985 I was privileged to attend the inauguration of the Australian Traditional Chinese Medicine Association Incorporated, in Sydney. Ever since, I have been actively involved in promoting Traditional Chinese Medicine, and trying to increase awareness and acceptance of its benefits in our Multicultural society.

I am happy to say that Traditional Chinese Medicine is increasingly moving into the mainstream. Although once considered a 'fringe' alternative, Traditional Chinese medicine is gradually being recognised and acknowledged as a legitimate and indeed effective means of prevention, treatment and cure of illness in the Western culture. There is a growing use of TCM throughout Australia.

As we all know Traditional Chinese Medicine has been an integral part of Chinese culture and health care for over 4000 years. It is now practised in both Asian and non-Asian communities around the world. The practice of traditional Chinese medicine is very diverse, and it is used to treat many acute and chronic illnesses. Many Western educated and trained doctors are now beginning to open up to ideas from the East and combine Eastern concepts in their everyday practice. It is less common today to simply discard TCM practices and theories because they are foreign and different. I myself, and I am sure many others as well, have often combined both Eastern and Western forms of medical treatment, and the increasing popularity of traditional Chinese medicine is as I just said, not only confined to the Chinese or Asian community.

I have been advised that in Australia alone there are now over 1500 primary practitioners working directly in TCM. Another 3000 non-primary practitioners combine TCM with other disciplines such as medicine, nursing, naturopathy and osteopathy. Together primary practitioners and non-primary practitioners generate an annual turnover of \$84 million engaging in approximately 2.8 million consultations each year. These figures are destined to grow with forecasts that by the year 2000 the number of primary practitioners is set to double.

Given the accelerating growth of TCM's, it is, as I've said before on many occasions, very important to streamline Traditional Chinese medical education so that practitioners have a sound, solid knowledge base which is formally recognised and reliable.

As it currently stands TCM practitioners may have acquired their knowledge from a wide variety of different ways. There are those who have acquired knowledge which has been passed down from generation to generation ie, those who have acquired their training through one to one teaching, father to son and masters to apprentices, and others through professional training at tertiary institutions.

The history of Australian Chinese medical training is so varied that often it is difficult to assess the quality of care and treatment you are receiving. To ensure that patients are protected I think it is important that some sort of common standard and registration that all practitioners are subjected to be introduced and maintained.

However the main issue to be addressed tonight is the relationship between Chinese traditional medicine and the resources it draws upon. As you are aware Traditional Chinese Medicine draws on the use of natural resources. The Chinese have been using plants and animals in medicines for thousands of years. However, we have discovered in recent years that many species used in traditional Chinese remedies are declining in numbers, and even facing

extinction. This is partly a result of their extensive use in traditional medicine.

Australia regulates the importation of endangered species through the Wildlife Protection (Regulation of Exports and Imports) Act 1989. However a great deal of products, containing endangered species, are still being imported illegally into Australia. Between June 1991 and March 1995, 42,917 illegal traditional Chinese medicines items were seized on entering Australia. These medicines contained ingredients such as bear, rhino, tiger, and leopard, all of which are recognised endangered species.

Having said this, it is important to realise that many of the products that were actually seized were products which could actually be legally imported, if the correct procedures had been followed. TCM practitioners' reluctance to abide by these measures have come at a cost to practitioners both financially, and in terms of their reputation.

I do not think TCM practitioners recognise that there is no doubt that there continues to exist a healthy market for illegally imported products in Australia. Practitioners of Chinese medicine however, have a responsibility to use our natural resources appropriately and wisely, particularly when dealing with endangered species. Since Endangered Species are susceptible to extinction and need space and time to be recultivated, wherever possible alternative products should be used.

It is important that we find a sensible balance between the preservation and conservation of endangered wild plants and animals and the practice of Traditional Chinese medicine. Tonight's symposium is a good opportunity to bring everyone interested in this issue together end to capitalise on the extensive expertise in the room. Together we must think of avenues to ensure the flourishing of traditional Chinese medicine and the endangered species under threat.

Finally, I would like to express my appreciation again for having been invited here tonight to open this important symposium. Wishing you all an interesting and productive evening.

It is now my pleasure to declare this symposium open.



THE TCM ROLE OF WILD ENDANGERED SPECIES

By Yifan Yang- President, NSW Association of Chinese Medicine.

1. Some clinically used products:

Plants: Ginseng, American Ginseng, Notoginseng, Gastrodia, etc.

Animals: Rhinoceros horn, Tiger bone, Elephant's Teeth, Pangolin Scales, etc.

2. General introduction:

- 1) About 2000 years of history since the record from SH NONG BEN CAO JING. The earliest known monograph on *Materia Medica*. The actual use could be much longer.
- 2) The resource of wild animal and plant products gradually reduced due to long time use. Some herbs were planted in farm and more substitutes used for animal products.
- 3) Some of the wild animal products were imported from India, South Asia and even African countries. There are some records in TCM *Materia Medica*.

3. Development

Wild animal and plant products:

- 1). Extinct.
- 2). Becoming an endangered species.
- 3). Wild plants farm growth.
- 4). Clinical experience in substitutes.

Modern herbal farming technique are being perfected.

The differences between wild and farmed products:

Wild	Farmed
Long time needed to grow	Shorter time growing
Unique natural environment	Designed environment
Much more complicated soil	Normal soil and fertilisation
Higher concentrated effective components	Lower concentration
Better clinical efficacy	Less clinical efficacy
Expensive	Cheaper
Resulting extinction of species	Ecological balance

As the bones from tiger, dog and pig shared similar chemical compositions and amino acids, some investigators tried to use pig bones in lieu of tiger bones.

Experiments on rats showed that the injection prepared from pig bones had significant inhibitory action on paw swelling due to egg white and granulation induced by in planted cotton pledget. The active constituents were considered to be peptide's and not amino acids.

2. ANTELOPE'S HORN (LING YANG JIAO)

LING YANG JIAO is the horn of the antelope *Saiga tatarica* L (Bovidae).

TCM nature: Salty and Cold.

Actions: Clear Heat, subdue Yang and Internal Wind, relieves fearfulness, Detoxifying.

Indication and application: Headache, dizziness, high fever, tremble, stroke, mania, convulsion. muscular spasm, infantile nocturnal crying and fearfulness, hypertension bad skill conditions, subcutaneous bleeding.

Chemical composition

The antelope horn contains keratin, calcium phosphate and vitamin A. The amount of keratin is high.

Pharmacology

1). Sedative and anticonvulsant effect

Intraperitoneal injection of the ethanol extract or injection of the antler to mice reduced the spontaneous activity of the animals. The cortical extract of the antler decreased the orientaling motor response and shortened the induction period of barbital and ether anaesthesia in mice.

2). Antipyretic effect

A prominent antipyretic effect was achieved by intravenous injection of the decoction and ethanol extract of antler 2g/kg each, or the hydrolysate 40mg/kg, or the injection 800mg/kg in rabbits with experimental fever.

3). Effect on the circulatory system

Injection of the 50% decoction 2 ml/kg IV to anaesthetised cats decreased the blood pressure.

Substitute

As the horns from rhinoceros, antelope and buffalo (SHUI NIU JIAO) shared similar chemical compositions and amino acids, especially keratin, it has been proved that buffalo horn used as a clinical substitute for rhinoceros' horn and antelope's horn is therapeutically effective.

3. RHINOCEROS HORN (XI JIAO)

XI JIAO is the horn of the Rhinoceros univornis L. or R. sondicus Desmarest, or R. sumatrensis (Fischer) Cuvier (Rhinocerotidae).

TCM nature: Salty, sour and Cold.

Actions: Clear Heat, subdue Yang and Cool Blood, relieves fearfulness, Detoxifying.

Indication and application: High fever, sun stroke, trauma, mania, convulsion, sore throat, epilepsy, febrile diseases, infectious diseases, macula, bad skin conditions, subcutaneous bleeding.

Chemical composition

The rhinoceros horn contains keratin. The amino acid constituents include cystine, and alkaline amino acids histidine, lysine and arginine. Thus it resembles wool and cattle horn in mainly composed of [eu]keratin. In addition, the horn contains other protein's[?], peptide's, free amino acids, and guanidine derivatives.

Pharmacology

1). Antipyretic effect

Intravenous injection of the rhinoceros horn extract relieved rabbits of experimental fever induced by Escherichia coli.

2). Anticonvulsant effect

Administration of the rhinoceros horn suspension 3g/kg PO to mice, did not significantly modify the effect of pentylenetetrazole and caffeine but prolonged the latent period of

strychnine-induced convulsion and survival period of the animals. Furthermore, it lowered the animals' convulsion reaction and mortality rates.

3). Cardiovascular effect

In experiments of isolated toad hearts, instillation of 30-50 drops of the 5% rhinoceros horn decoction to the chloral hydrate-inhibited heart resulted in gradual recovery of the heart heat, strengthening of contractility, increase in contraction amplitude and minute cardiac output.

Substitute

As the horns from rhinoceros, antelope and buffalo (SHUI NIU JIAO) shared similar chemical compositions and amino acids, especially keratin, it has been proved that buffalo's horn used as a clinical substitute for rhinoceros' horn and antelope's horn is therapeutically effective.

4. MACAQUE (RHESUS MONKEY) GALL STONE (HOU ZAO)

HOU ZAO refers to the macaque (rhesus monkey) gall stone.

TCM nature: cold and bitter.

Actions: Clears Heat and detoxifying, eliminates Phlegm and relieves fearfulness.

Indication and application: Mainly for children with asthma, bronchitis with wheezing, cough with yellow sticky phlegm, nasal congestion, restlessness. Also for mania, epilepsy and lumps.

Chemical composition

Similar to NIU HUANG (Calculus Bovis), contains bile acids, bilirubincholesterol ergosterol, vitamin D, sodium, potassium, calcium, magnesium, zinc, iron, copper, and phosphorus.

Pharmacology

- 1). Anti-inflammatory effect, anti-allergic and detoxicant actions.
- 2). Actions on the nervous system, decreased the central stimulant symptoms.
- 3). Antimicrobial action.

4). Actions on the respiratory and circulatory systems.

Substitute

Artificial synthetic NIU HUANG is the substitute due to the similar chemical compositions.

5). HEDGEHOG SKIN

It refers to the hedgehog' skin.

TCM nature: neutral and bitter.

Actions: Lowers the adverse Qi and relieves pain, Cool the Blood and stop bleeding.

Indication and application: Abdominal distension and pain with nausea, vomiting, loose stools or diarrhoea with bleeding or nasal bleeding.

Chemical composition

Keratin and Collagen.

Substitute

It is getting more difficult to get the product and relatively easy to find substitutes, hedgehog skin is not very often used in TCM clinical practice now.

Substitutes are BAN XIA, GOU PU, ZHU RU for adverse stomach Qi and HUANG QIN, XIAN HE CAO for bleeding disorders.

6. ELEPHANT'S TEETH

TCM nature: cold.

Actions: Clears Heat and Calm the Shen, Detoxifying and help healing wound.

Indication and application: Mainly for children with fearfulness irritability, Heart Fire, Heat and Toxin conditions, Shen disturbance.

Chemical composition

Calcium phosphate and substantiaadamantia.

Pharmacology

- 1). Anti-inflammatory effect.
- 2). Tranquillising.

Substitute

Can be substituted by GOU TENG, SHI GAO, etc. for the above disorders.

7. PANGOLIN SCALES

TCM nature: cold and salty.

Actions: Clears Heat and detoxifying) promotes Blood circulation and relieves 13i Syndrome.

Indication and application: Carbuncles or infections caused by accumulation of Heat and toxin. Blood stagnation conditions such as amenorrhoea, also for promoting milk production.

Substitute

Substitutes are ZAO JIAO CI, WANG BU LIU XING ZI, YI MU CAO etc.

8. BEAR GALL

TCM nature: cold and bitter.

Actions: Clears Heat and Calm the Shen, Subdues the Hyperactivity of Liver Yang and Detoxifying.

Indication and application: Infectious diseases, cholelithiasis, eyes diseases such as neuritis and corneal nebula and infantile convulsion.

Chemical composition

The bile contains mainly of ursodeoxycholic acid and less of chenodeoxycholic acid, deoxycholic acid and cholic acid.

Pharmacology

- 1). Promotes bile secretion.

- 2). Gallstone-dissolving effect.
- 3). Anticonvulsant and antipyretic actions.

Substitute

Can be substituted by pig gall bladder due to the similar chemical composition and pharmacology.

9. MUSK SHE XIANG

Is the dried musk from male must deer.

TCM nature: Pungent and Warm with a very strong aroma.

Actions: Open orifice, Heat and detoxifying eliminates Phlegm and relieves mental conditions

Indication and application: Mental disorders, Wind stroke, coma, angina, migraine
Chemical composition Musk contains about of muscone which can be synthesised.

Pharmacology

1). Anti-inflammatory effect. 2). Actions on the nervous system. 3). Actions on the circulatory systems.

Substitute

Muscone is the major component of musk which can be synthesised.

1. Tiger bone 2. Antelope's horn 3. Rhinoceros horn 4. Macaque (rhesus monkey) gall stone
5. Hedgehog skin 6. elephant's teeth 7. Pangolin scales 8. Bear gall 9 Musk

1. TIGER BONE (HU GU)

Refers to the tiger bone, *Panthera tigris* L. (Felidae).

TCM nature: warm and pungent.

Actions: Strengthens the bones and relieves muscular pain, expels Wind, and relieves fearfulness.

Indication and application: Rheumatic arthritis, sport injury, muscular sprain. muscular atrophy, lassitude of legs and knees, epilepsy, chronic low back pain, haemorrhoid,

prolapse of rectum, and enhance the healing of fractures.

Chemical composition

The bones of the tiger contains collagen, fats, calcium phosphate, calcium carbonate and magnesium phosphate. 17 amino acids. etc.

Pharmacology

1). Anti-inflammatory effect

Experiments showed that tile suspension of the bone powder of tiger given intragastrically at 1g/Kg lo rots significantly inhibited paw selling due to injection of formaldehyde or egg white. Also inhibited the increase in total WBC and Lymphocyte and the education in the neutrophil in tile peripheral blood.

2). Analgesic effect

Intragastric administration of the gelatine of tiger bone at 1G/Kg was proved to have an analgesic effect in the experiment of exposing an animal's tail to focused radiant heal; it elevated the pain threshold and delayed the onset of pain reaction.

Substitute [not detailed in original presentation]

10). Wild Ginseng

TCM nature: Warm and Hot.

Actions: Tonifies Qi Strongly.

Indication and application: General weakness, chronic diseases, chronic fatigue, heart failure, etc.

Chemical composition: Ginsenside, etc.

Pharmacology

- 1). Anti-inflammatory effect.
- 2). Actions on the nervous system.
- 3). Actions on the circulatory systems.

Substitute: Artificially grown ginseng.

TRADE IN TRADITIONAL CHINESE MEDICINE CONTAINING ENDANGERED SPECIES - AN INTERNATIONAL CONTEXT

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1. INTRODUCTION

Many people still believe that traditional Chinese medicine (TCM) and wildlife conservation have nothing in common. This article explains why they are now linked on a global scale, and why it is in the best interests of TCM specialists to care about wildlife conservation and why wildlife conservationists will continue to take an interest in TCM. The use of endangered species in TCM in an Australian context and TRAFFIC East Asia's experience in working with the TCM community in Hong Kong will also be addressed.

2. THE INTERNATIONAL CONTEXT

2.1 Why traditional medicine is a concern to CITES?

International concern over the use of endangered species in TCM has been discussed at least since mid-80s. The discussion used to be focused on individual animal species, such as the tiger and rhinoceroses. This is because significant quantities of tiger bones and rhino horns were once utilised in traditional medicine systems throughout Asia. Official records indicate that East Asian countries imported, at minimum, more than 46,000 kg of rhino horn between 1960 and 1985 (Leader-Williams, 1992). Other records also show that the region imported more than 10,000 Kg of tiger bone between 1970 and 1993 (Mills and Jackson, 1994). Use of endangered species in TCM is one of the factors contributing to the decline of those animal population in the wild.

Traditional medicine is widely practised in Asia. In China alone, a minimum of 40% of the 1.2 billion population rely primarily on traditional Chinese medicine. Of all medicines sold in China on the retail level, 55% are traditional medicines (Anon. 1996). It is suggested that even if a small fraction of TCM users in China continue to consume tiger bones, the pressure on the remaining 5,000 tigers in the wild would be significant enough to cause extinction.

In addition, other traditional medicine systems in Asia, such as *hanyak* in Korea and *kampo* in Japan, are heavily influenced by TCM. If the focus is switched from China to all of Asia, the number of potential traditional medicine users increases dramatically. Moreover, there is no dispute that traditional medicine is becoming more popular on a global scale. Traditional medicine is gaining acceptance from non-Asian communities in the USA and the UK, as well as in Australia.

Furthermore, a TCM literature review show that more than 100 species of animals and plants used in TCM are listed on CITES, although many of these species are known not to be consumed in the modern practice of TCM. In the Official Pharmacopoeia of the People's Republic of China, at least 10 species of animal and plants are identified as CITES species. Most of these are Appendix II species (Table 1).

2.2 Why CITES is a concern to TCM and the TCM industry?

In the past few years, international concerns over the use of endangered species expanded from focusing on individual animals to a larger range of animals and plants that could be, and are currently, used by traditional medicine. These have been the subject of international discussion since at least 1994.

In September 1994, the International Symposium on the Trade of Bear Parts for Medicinal Use took place in Seattle, USA. This forum examined the magnitude of the international trade in bear gall bladders and the potential impact on bear populations in the wild, as well as related trade control measures in place in various exporting and importing countries.

In October 1995, the First International Symposium on Traditional Chinese Medicine and Wildlife Conservation took place in Hong Kong. This event attracted 22 delegates from TCM communities in China, Hong Kong, Japan and Singapore, as well as 50 observers ranging from conservationists to government representatives. This event not only was a very first of its nature in terms of communication between conservationists, government officials and TCM communities in East Asia, but it also stimulated another similar event in Australia.

In October 1996, delegates of the World Conservation Congress in Montreal, Canada were encouraged to consider the issue of traditional medicine and its importance to wildlife conservation.

In March of this year, the Second International Symposium on the Trade of Bear Parts took place in Seattle, USA. It was the first time for many conservationists, many of whom are westerners, to hear the opinions of representatives of TCM communities in Asia on the

issue. One of them was a TCM trader from Hong Kong and another was a Korean speaker who himself is a general practitioner and traditional medicine practitioner. These opinions, such as the need to address the socio-economic elements of the trade in bear parts, were new and inspirational to the western audience.

Two months ago, in June 1997, the issue was formally discussed at the Tenth Conference of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in Harare, Zimbabwe. A resolution on traditional medicine was unanimously approved, urging Parties to CITES to work more closely with traditional medicine communities in their own countries and to put more effective trade control measures in place for traditional medicine.

It was this United Nations convention and its accompanying resolutions that bind the Australian Government to initiate TCM-related programs, such as co-hosting the first Australian Symposium on TCM and Wildlife Conservation, so as to fulfil its international obligations.

TCM and other traditional medicine systems will continue to be on the international wildlife conservation agenda. What need to be decided at this stage is how individual Parties to CITES, such as Australia, will implement CITES effectively where traditional medicines are concerned.

3. THE AUSTRALIAN CONTEXT

In a 45-month period between July 1991 and March 1995, some 43,000 items containing or purporting to contain bear, leopard, musk, rhino and/or tiger were seized entering Australia. In this same period, many other medicinal products - such as ginseng - which could have been legally imported into Australia with appropriate CITES permits, were seized.

According to a TRAFFIC report based on a covert market survey in major cities in Australia and New Zealand, there is a healthy market for illegally imported traditional medicine products containing endangered species, including bear, leopard, musk, rhino and/or tiger. Two-thirds of the premises surveyed in Australia were selling medicinal products purporting to contain these animal parts. Half of the shops examined were selling "musk-products"; 22% had "leopard-products", 14.3% had "tiger-products", 5% had "bear-products" and 2.5% had "rhino-products" (Callister & Bythewood, 1995).

Medicinal products made from critically endangered species, which are often referred as CITES "Appendix I" species, are prohibited from international trade and are also prohibited from entering Australia (Box 1).

Medicinal products made from threatened species, often referred to as CITES "Appendix II" species, can be traded, although trade is controlled through a permit system. They can generally be legally imported into Australia provided that the correct procedure is followed, and permits are obtained prior to importation. Many products seized by Environment Australia fall into this category, and are being seized simply because they have no permit.

From the traders' point of view, seizure of goods that could have been legally imported means unnecessary economic loss. In addition, seizure of illegally imported medicinal products can generate negative media attention. Traditional medicine might therefore be portrayed with an undesirable image to the public. This might cause concern in TCM communities, especially during a time when regulation of the entire industry is being considered in Australia.

The Australian Government is obliged to work more closely with traditional medicinal communities. This event is one, but surely will not be the only one, of its TCM-outreach initiatives. Effective communication channels between TCM communities and Environment Australia, which is the authority responsible for implementing CITES, needs to be established and maintained.

According to the relevant Resolutions of the CITES Conference, the Australian Government is also obliged to ensure the law in Australia is effective enough to control the trade in all parts and derivatives of endangered species used for healing purposes and in medicinal products containing or purporting to contain them. As a result, relevant laws in Australia may soon have to be amended so as to strengthen the control of trade in medicinal products. This might include strengthening the law to enable prosecution of shop-owners selling medicinal products containing or purporting to contain CITES Appendix I species. It may allow prosecution for selling products labelled as containing CITES species, without the need for forensic proof of the actual ingredients.

I encourage the Government to communicate more with the TCM community on possible legislative amendments and relevant permit application procedures.

4. THE CONTEXT IN HONG KONG

Hong Kong was once a British colony and is now a Special Administrative Region of China. Both sovereign countries, the United Kingdom and China, are Parties to CITES. Hong Kong has been implementing and will continue to implement CITES through its legislation.

In Hong Kong, the TCM community has felt victimised by the lack of professional recognition from the Health Department. TCM practitioners who are reputable in China find themselves regarded as non-professional in Hong Kong and consequently have a far

lower social status than they once had in China. When another government department which is responsible for wildlife conservation raids TCM shops, confiscates goods and subsequently prosecutes members of the TCM community, the community often perceives the Hong Kong government as discouraging the practice of TCM.

In some cases, when western media wish to cover the issue of wildlife conservation and TCM, they often misinterpret the core TCM concept of yin-yang. "Enriching yang" is often mistranslated into "for aphrodisiac purposes", which is most often not the use of TCM products. However, this has left the TCM community feeling humiliated. As a consequence, when conservationists, especially Caucasians, attempt to talk to them about the issue, members of the TCM community are often reluctant to communicate. Communication between conservationists and the TCM community in Hong Kong was poor until recently. (Box 2)

It has taken three years and enormous effort for our office to simply communicate with the TCM community in Hong Kong. When we first approached them, they were suspicious of the motives behind all our efforts. In their belief system, which values humans above all other life forms, it is not easy for them to believe people would work so hard simply for the sake of wildlife itself.

After three years of work, some TCM traders and manufacturers in Hong Kong have started realising that we are not their enemy, but wildlife-trade researchers who are seeking opportunities to work with their industry toward wildlife conservation.

Our office so far has been invited to annual dinners of three different TCM organisations in Hong Kong, in which we were honoured to launch opening addresses about wildlife conservation on two occasions. A trader recently explicitly expressed to us that he once had reservations about our office, but now is beginning to trust us.

Another remarkable achievement for TRAFFIC East Asia has been that a large TCM manufacturer has given us the range and quantities of medicinal materials they purchased in the last fiscal year, which normally is regarded as a commercial secret. They have agreed to have us examine whether their consumption of medicinal materials to determine whether they may jeopardise wild populations of the species used and also to alert them if there are any potentially endangered species on their purchasing list. In doing this, they could not only become the first "green" business in their industry but may also be able to adapt their medicine formulas to mitigate anticipated cost increases and decreases in supply of raw materials.

Communication and building trust cannot take place in a single event. It requires a long process. That is why we have launched a Chinese-language newsletter on TCM and wildlife conservation, which received a surprisingly enthusiastic response from the TCM

community in Hong Kong. We hope that this publication will enable members of the TCM community to understand more about conservation concerns and the need for wildlife trade monitoring and controls, as well as the pivotal role they play in ensuring that wildlife is not used unsustainably.

5. CONCLUSION

In closing, I would encourage the Australian Government to initiate more public awareness programs targeting practitioners, traders and users of TCM. It is my impression that the TCM community in Australia has insufficient knowledge about the relevant laws controlling trade in medicinal products, even to the point of not knowing what can be or cannot be imported.

To the TCM community in Australia, I would encourage representatives from different TCM organisations, traders and institutions to come forward to discuss conservation issues among themselves, as well as with conservationists and the government. This could enable the TCM community to discuss the implications of wildlife conservation measures and offer valuable input to conservationists and the government.

Effective communication on this issue is important for both parties.

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Box 1: What is CITES?

What is CITES?

As of August 1997, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which is a United Nation Treaty is ratified by 139 countries, including Australia. This Convention controls trade in endangered or threatened species of wild plants, animals and the products made from them. This include medicines.

Apart from the treaty itself, there are Appendices to CITES. Appendix I of CITES lists animals and plants that are considered as critically endangered and trade in those species between signatory countries is prohibited.

Appendix II lists animals and plants that are endangered or potentially endangered if international trade of products made from those species is not controlled. It is those animals and plants that are listed on the Appendix II that can be traded but only with proper permits applied from relevant government departments from importing and, in some cases, exporting countries.

Box 2: What is TRAFFIC?

What is TRAFFIC?

TRAFFIC, Trade Records Analysis of Flora and Fauna in Commerce, is the wildlife trade monitoring programme of WWF, World Wide Fund For Nature, and IUCN, The World Conservation Union. TRAFFIC monitors trade in endangered species and other wildlife or products made from parts or derivatives of concerned animal and plant species. Established in 1994, TRAFFIC East Asia monitors trade in wildlife in east Asia region, covering China, Japan, Korea, Taiwan, Hong Kong, Macau and Mongolia.

Table 1: CITES Species that are listed on the Pharmacopoeia of the People's Republic of China (Anon., 1995)

Common Name	Scientific Name	Latin Name	CITES Appendix
Appendiculate Cremastra Pseudobulb / Common Pleione Pseudobulb	Cremastra appendiculate Pleione bulbocodioides Pleione yunnanensis	Pseudobulbus Cremastrae seu Pleiones	II
Tall Gastrodia Tuber	Gastrodia elata	Rhizoma Gastrodiae	II
Costus root	Aucklandia lappa	Radix Aucklandiae	I
Dendrobium	Dendrobium candidum D. chrysanthum D. fimbriatum D. loddigesii D. nobile	Herba Dendrobii	II
Common Bletillae Tuber	Bletilla striata	Rhizoma Bletillae	II
Beijing Euphorbia root	Euphorbia pekinensis	Radix Euphorbiae	II
Aloes	Aloe barbadensis Aloe ferox	Aloe	II
Pangolin scale	Manis pentadactyla	Squama Manitis	II
Prong horn	Saiga tatarica	Cornu Saigae Tataricae	II
Musk	Moschus berezovskii	Moschus	I/II*

* Population of musk deer from the following geographical boundaries are listed on the Appendix I: Afghanistan, Bhutan, India, Myanmar, Nepal and Pakistan.



Responsible Use of Traditional Chinese Medicine

Mr Alan Bensoussan, Head, Research Unit for Complementary Medicine, University of Western Sydney- Macarthur.

The Traditional Chinese *Materia Medica* includes preparations made from plants, animal and mineral products. Many of these preparations have been in use for centuries and have detailed indications for use in TCM practice. Some are made from parts of endangered species of animals or plants. The use of parts of endangered species such as rhinoceros horn, tiger bone and deer musk as medicinal preparations may have placed a significant strain on these species and contributed to the reduction of their numbers to critical levels.

In Australia, the Wildlife Protection (Regulation of Exports and Imports) Act 1982 is the legislative basis for conservation-orientated controls on the export and import of wildlife and wildlife products. This Act fulfils Australia's legislative requirements as a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Species under CITES control are classified under three appendices.

The use of preparations claiming to contain endangered species in Australia has continued despite Australia becoming a signatory to CITES. Nearly 43,000 units of TCM products claiming to contain bear, leopard, musk, rhinoceros and tiger were seized by the Australian Government between July 1991 and March 1995. Of the 42,917 seized products, 33,030 (78.3%) listed musk; 22,006 (52.2%) listed tiger; 1,379 (3.3%) listed rhinoceros; 536 (1.3%) listed leopard; and 257 (0.6%) listed bear.

A survey was carried out in Australia by TRAFFIC Oceania in February 1995, of 119 premises that supply TCM medicinal preparations. They found that 50% of the shops examined were selling products containing musk and saiga antelope; 21.8% leopard, 14.3% tiger; 5.0% bear and 2.5% rhinoceros. All of these species are CITES Appendix I or II species.

TRAFFIC's investigation of over-the-counter sales of Chinese medicines identified a problem particularly amongst *prepared* medicines rather *raw* products. There was an inconsistency in the findings between the number of patent medicines labelled as containing endangered species and the availability of the same as raw ingredients. The only raw form of an endangered species found was antelope in two of the 119 Chinese herb stores surveyed (and this was not confirmed as saiga antelope). There were no other identifications of raw products from endangered species in Chinese herb stores. This inconsistency (with the volume of patent medicines identified as containing endangered species) may signal an important problem.

The Traffic survey was unable to analyse prepared medicines to see if, in fact, the endangered species were actually contained in the medicines. Most TCM practitioners and retailers are aware that claims on labels can be rather extravagant. It is also widely known within the TCM profession that pork bone is used as a substitute for tiger bone, and buffalo horn for rhino horn. Furthermore, farmed deer, supply some (albeit small) of the demand for musk.

Changing legislation and manufacturing practices in China may also have impacted on this problem of labelling. Two of the most commonly found items in the TRAFFIC survey were medical plasters that formerly listed tiger as an ingredient. Tiger has since been removed from the list of ingredients and product name (post 1993 legislation in China). Bear has been removed from the ingredient list in the new stock of Fargelin pills for piles. Hence, it is difficult to determine whether the new products still contain the endangered species, or whether they ever have in the last few years. A label on one more recent product tries to convince the consumer that this product contains genuine tiger bone, such is the reputation for substitutions to occur. It is difficult to be certain of the actual level of use of endangered species in prepared Chinese medicines.

Having said that, there can be little doubt that products which list tiger bone as an ingredient, whether genuine or fake, perpetuate a demand for real tiger bone and products containing it. The only ethical solution is to ensure no endangered species are contained in the products, and to ensure labelling is accurate and not false (for example, pork bone is identified as one of the active ingredients, and not tiger bone, if that is the case).

A significant resolution emanating from a CITES conference is that any product which lists a CITES-listed species as an ingredient on its packaging should be treated as containing that species. It then becomes the responsibility of the manufacturers and traders to ensure a product neither contains any endangered species, nor is labelled as containing them. Retailers, TCM practitioners and consumers in Australia also need to be aware that all such labelled products will be treated as containing the illegal ingredients. The issue of labelling is an important one for the TCM profession to address.

However, there is another which is potentially more difficult. At a recent conference in Hong Kong there was opportunity for practitioners and traders to express concerns related to the use of endangered species. It is worthwhile looking at some of these comments briefly.

Some sentiments that I have heard expressed in Australia are also reflected in the comments of a TCM academic in Hong Kong:

"The dilemma faced by TCM users, however, can only be better appreciated if we can step into their shoes and then make judgements if we ourselves or our beloved ones are suffering from ailments that modern medicine offers little or no help whereas products from these animals may offer relief "

It is important to table these views because herein may lie the resistance to comply with the law, and to continue to sacrifice a constantly diminishing resource. It defies all logic. Even if we adopt the crudest perspective of some human right to continuously exploit natural resources, in this case if the medicine is valuable and in diminishing supply, the resource needs protecting. And in this sense alone the profession needs to do the utmost within its capabilities to cease all use of endangered species, and utilise alternative products, or farmed or cultivated species, at least until such a time as the supply of the medicine is stable (and occurs under humane conditions).

Viable alternatives to many endangered species used in TCM do exist and extensive work is being undertaken to identify further appropriate substitutes. The TCM profession and the community should absolutely reject any use of endangered animal and plant species in Chinese medicines.

SUMMARY

Whilst TCM has used in the past animal and plant species that are currently on endangered species lists, it is a practice that has not been permitted in China, Japan, Hong Kong, Taiwan, in fact many countries, including Australia. However, despite severe penalties in some countries, it still occurs.

Very little has been done in the past to educate the TCM community in Australia on the provisions of CITES, the conservation impact of the use of endangered species in TCM, and the availability of effective substitutes. Collaboration with, and education of the TCM community will be a crucial component of any effort to curb the demand for endangered species medicines in Australia.

The majority of the Australian TCM profession would claim that it no longer uses endangered species and in fact are positively opposed to it, and would support the formation of any appropriate legislation in this area.

Professional associations representing TCM practitioners policy that 'condemns the use of endangered species of both animals and plants and is actively promoting the use of appropriate substitutes'.

Amendments to legislation, increased enforcement and greater consultation with, and education of the TCM community are all essential if the Australian markets for illegally

imported medicines containing endangered species are to be controlled. A critical factor will be involving the TCM community in the development of legislative changes, leading to better awareness of the laws. Cooperative development will also, hopefully, result in a greater sense of 'ownership' among the TCM community of any of the laws and therefore a greater willingness to adhere to their provisions.

Wildlife Protection Act 1982

(Regulation of Exports and-Imports)

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Appendix I	Includes species threatened with extinction that are, or may be, affected by trade. International commercial trade is prohibited.
Appendix II	Includes species which may become threatened if trade in them is not controlled. An export permit issued by the relevant government agency in the country of origin is required to trade internationally in Appendix II specimens.
Appendix III	Contains species subject to regulation within individual countries and for which the cooperation of other CITES parties is sought in order to control that trade.

CITES APPENDICES

Common Name	Scientific Name
Sun Bear; Sloth Bear; Spectacled Bear; Asiatic Black Bear	Helarctos malayanus; Melurslls ursinus; Tremarctos ornatus; Ursus thibetanus
Himalayan Brown Bear	Urus arctos isabellinus
Brown Bear	Ursus arctos (populations of Bhutan, China Mexico and Mongolia)
Leopard	Panthera pardus
Clouded Leopard	Neofelis nebulosa
Musk Deer	Moschus spp.(populations of Afghanistan, Bhutan, India, Myanmar, Nepal and Pakistan)
Rhinoceros	Rhinocerotidae spp.
Guadalupe Fur Seal; Monk Seal	Arctocephalus townsendi; Monachus spp.
Tiger	Panthera tigris

Principal animal species used in TCM which are threatened with extinction and therefore listed in CITES Appendix I.

(From Callister DJ and Bythewood T. Of Tiger Treatments and Rhino Remedies: Trade in endangered species medicines in Australia and New Zealand. TRAFFIC Oceania, Sydney 1995:1 1)

Species	Number of units seized (percentage of total)
Musk	33,030 (78.3%)
Tiger	22,006 (52.2%)
Rhinoceros	1,379 (3.3%)
Leopard	1,536 (1.3%)
Bear	257 (0.6%)
Total	42,917

Units of TCM products claiming to contain bear, leopard, musk, rhinoceros and tiger which have been seized by Australian authorities between July 1991 and March 1995.

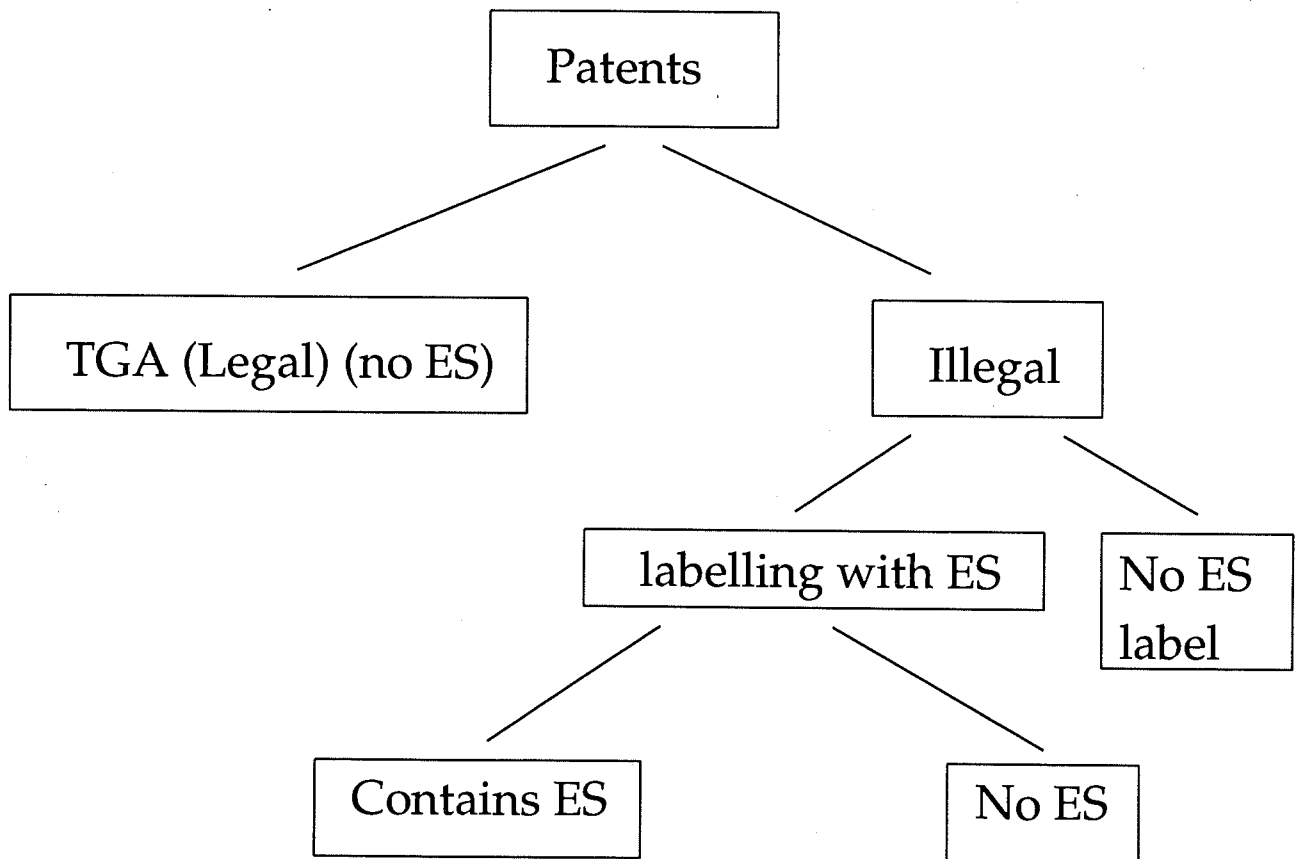
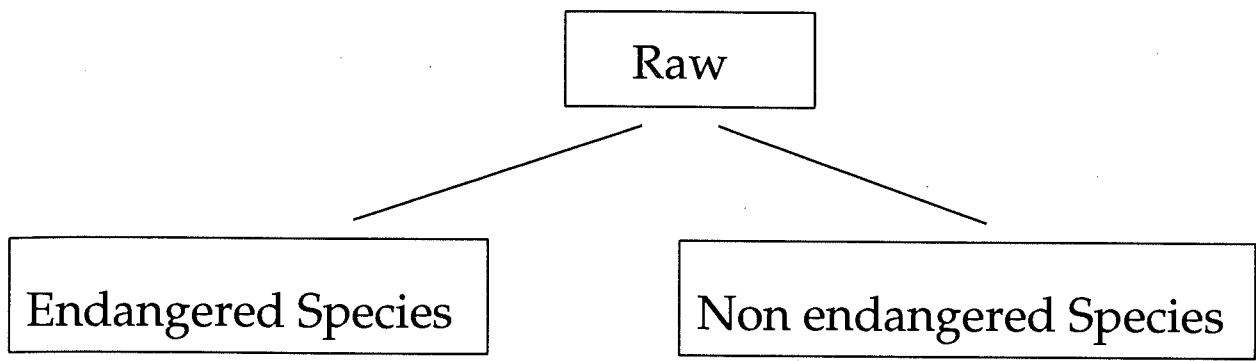
(From Callister DJ and Bythewood T. Of Tiger Treatments and Rhino Remedies: Trade in endangered species medicines in Australia and New Zealand. TRAFFIC Oceania, Sydney 1995)

Number of shops (percentage of shops surveyed)

Location	Bear	Leopard	Musk	Rhino	Tiger	Saiga	None	Shops
Melbourne	0	17 (38)	25 (55)	0	8 (18)	17 (38)	13 (29)	45
Sydney	5 (10)	9 (18)	29 (59)	1 (2)	6 (12)	34 (69)	12 (25)	49
Brisbane	1 (4)	0	5 (20)	1 (4)	3 (12)	8 (32)	12 (48)	25
TOTAL	6 (5)	26 (22)	59 (50)	2 (3)	17 (14)	59 (50)	37 (31)	119

Results of the TRAFFIC Oceania survey of premises supplying TCM medicinal preparations containing targeted CITES-listed species.

(From Callister DJ and Bythewood T. Of Tiger Treatments and Rhino Remedies: Trade in endangered species medicines in Australia and New Zealand. TRAFFIC Oceania, Sydney 1995: II).



Hong Kong TCM retailer:

"According to the CITES, the trade of tigers, etc. is prohibited and those TCM practitioners who use such medicines to treat and save peoples' lives, pharmacies and traders of such medicinal resources are liable to punishment. Such international convention protects animals but harms human beings, makes animals more worthy than mankind, and degrades mankind as if they were lower than animals. It is questionable that whether such kind of rules worth existing."

"...the rights of human beings of using such resources to maintain their health, treat their diseases and sustain their survival, are ignored. The people who formulate such kind of rules are indeed ignoring human rights."

Hong Kong TCM practitioners:

"People, however, should not work towards wildlife protection but neglect the protection of human lives."

On rhino horn: "Reasonable application should therefore be allowed and it is inappropriate to ban the medicine entirely." "The normal traffic of species for medical use should be set strictly aside from profit-deriving business trade."

Singapore Chinese Doctors Association:

"TCM practitioners are working for the good of health care for all mankind. It is not fair to treat us like profiteers or put the law on us".



Alternatives to the use of Endangered Species in Chinese Medicines

Dr Jerry (Jiansheng) Zhang MB. (BUTCM), PhD. (BMU) - Traditional Chinese Medicine Pharmacognocist.

This paper summarises emerging issues related to the use of endangered species of animals and plants in Chinese medicine. In particular it focuses on:

1. Newly identified substitutes for endangered species which have reliable and similar therapeutic effects. (For example: buffalo horn instead of Rhinoceros horn; Pig bone instead of Tiger bone, and *Radix Berberidis* instead of *Rhizoma Coptidis*).
2. Cultivating wild plants and breeding endangered animals where possible. (For example, cultivating *Gastrodia elata* BL, breeding deer *Cervus nippon* Temminck and antelope *Saiga tatarica* L.).
3. Removing medicinal parts from the live animals *or* plants other than destroying them. (For example, obtaining musk from live musk deer *Moschus berezovskii* Flerov; peeling of the bark of *Eucommia ulmoides* Oliv. without damaging the tree).
4. Using plant tissue and cell culture to propagate medicinal herbs, increase active constituents and protect resources from extinction. (For example, tissue culture of *Artemisia annua* L). To obtain more quantity of artemisinin, tissue cultures *Scopolia acutangula* C.Y. Wu *et* C. Chen to obtain and adjust different amount of l-hyoscyamine, scopolamine and anisodamine.

The Chinese government and organisations associated with the use or regulation of Chinese medicine need to further develop these techniques and undertake appropriate research to remove all medicinal reliance on endangered plants and animals to ensure endangered animals and plants to be protected and enforce the law.

INTRODUCTION

The Chinese Materia Medica is the basis for the treatment and cure of disease in Chinese medicine, and used for over the centuries for health and longevity. Since Chinese medicine has been successfully used in many treatments for diseases and causes less toxicity and side effects, Chinese herbal medicine is becoming increasingly popular with both health care practitioners and the public.

With the increasing awareness, instruction and practice of Chinese medicine, the issue of use of parts from endangered species such as tiger *Panthera tigris* and Rhinocerotidae spp. as ingredients in traditional Chinese medicine has become an international conservation concern.

Chinese medicine practitioners had used these medicinal materials in the past. However, these practice have been banned in China for many years, even though these materials still appear in some textbooks of traditional Chinese medicine.¹

Chinese medicine always emphasises the harmony and balance between mankind and the environment. According to Chinese medicine, it is important to understand that the body reflects universal order (*tian ren he yi* or microcosm and macrocosm). As a matter of fact, a lot of experimental and clinical research have been undertaken to find effective, abundant and safe substitutes, and already quite a lot of achievements have been made.

In the past, some illegal and banned raw or manufactured products containing endangered species has been found on the market in Australia, causing some misunderstanding of the common opposition to this in Chinese medicine. With a better understanding, we believe that Chinese medicine will grow and develop healthily and smoothly.

Following information is parts of research achievement in pharmacological effects, active chemical constituents and observation of clinical application in China over the recent years.

1. NEWLY IDENTIFIED SUBSTITUTES FOR ENDANGERED SPECIES WHICH HAVE RELIABLE AND SIMILAR THERAPEUTIC EFFECTS.

1.1 Buffalo Horn (Shui Niu Jiao) Instead Of Rhinoceros Horn

There are five species of rhinoceros: white rhinoceros *Ceratotherium simum* and black rhinoceros *Diceros bicornis* found in Africa, and greater one-horned (Indian) rhinoceros *Rhinoceros unicornis*, Javan rhinoceros *Rhinoceros sondaicus* and Sumatran rhinoceros, *Dicerorhinus sumarensis* found in Asia. According to traditional Chinese medicine theory, rhinoceros horn removes heat from the blood, induces hemostasis, clears away heat-fire to calm *shen*, removes toxins and relieves feverish rashes or eruptions. Clinically, it is applied to treat bleeding due to blood heat, acute febrile diseases with heat invasion of the heart and *ying* system, and epidemic febrile diseases with excessive noxious heat.²

1 Zhang, E (1990). The Chinese Materia Medica. Publishing House of Shanghai College of Traditional Chinese Medicine, Shanghai.

2. Zhang, E (1990). The Chinese Materia Medica. Publishing House of Shanghai College of Traditional Chinese Medicine, Shanghai. 108-112.

Now in China, buffalo horn (*Shui Niu Jiao*, *Cornu bubalis*) has replaced rhinoceros horn. It has been regulated in Chinese Pharmacopoeia.³

Pharmacological study has shown that buffalo horn has antipyretic, cardiotonic and anti-atherosclerosis effect, and lowers blood-fat etc. Chemical analysis demonstrates that buffalo horn has similar constituents to rhinoceros horn. Clinical trials show that effectiveness in treating epidemic encephalitis 13 for rhinoceros horn is 80% and for buffalo horn is 82.4%, in treating febrile diseases for rhinoceros horn is 67.8% and for buffalo horn is 70%.⁴

1.2 Pig Bone Instead Of Tiger Bone.

Tiger bone (*Hu Gu*, bone of *Panthera tigris* L.) In Chinese medicine, its therapeutic action is related to the channel of liver and kidney. Clinically, it was used for relieving pain (especially rheumatism), strengthening muscles and bones and treating weakness of the lower limbs due to deficiency of the liver and kidney.⁵

Dog bone and pig bone have been determined to have the effects similar to tiger bone. Clinical trials showed that the preparation which contains dog bone as major component has significant therapeutic effect on treating rheumatic arthritis and rheumatoid arthritis. Total effective rate is 92.7%.⁶ The experimental research showed that pig bone is a good medicine to treat bone fracture and soft tissue injury. Pharmacological research also showed that pig bone has anti-inflammatory and anti-oncotic effects.⁷

1.3. *Radix Berberidis* instead of *Rhizoma Coptidis*

Rhizoma Coptidis (*Huang Lian*) has significant effect of clearing away heat, drying dampness, purging fire and clearing away toxin. But its resource is diminishing, and tends to exhausted.

Berberis is abundant in China and has approximately 200 species. Chemical analysis showed that the roots of Berberis have similar chemical components to those *Rhizoma Coptidis*, some constituents of *Radix Berberidis* (*San Ke Zhen*) have not been found in *Rhizoma Coptidis*.

3. Pharmacopoeia of the People's Republic of China (Edition 1995). 66.
4. School of Pharmacy, Beijing Medical University. (1979). Chinese Materia Medica. Beijing Medical University Publishing House. 146-147.
5. Zhang, E (1990). Rare Chinese Materia Medica. Publishing House of Shanghai College of Traditional Chinese Medicine, Shanghai..
6. Chen H. et al. (1982). Journal of Research of Chinese Patent Medicine. (4): 25.
7. Zhu C. X and Deng, Z. Y (1992). Chinese Traditional and Herbal Drugs. 23(4): 213-214.

Pharmacological experiment showed that *Radix Berberidis* has anti-microbial, anti-infective and anti-fungal effects, as well as immunological enhancement. It has been widely used in clinical practice in China.⁸

2. CULTIVATING WILD PLANTS AND BREEDING ENDANGERED ANIMALS WHERE POSSIBLE.

2.1 Cultivating Rhizoma Gastrodiae (Tian Ma)

Rhizoma Gastrodiae is the dried tuber of *Gastrodia elata* B1. (Fam. Orchidaceae). It is the top grade herb which can relieve rheumatism, make free blood vessels and strengthen bones and tendons. It is used to treat (1). the vertigo arising from different causes of disease, such as cerebral arteriosclerosis, inadequate blood supply in vertebral basal artery, coronary disease, high blood pressure, etc; (2). Acroteric numbness, insomnia; (3). Epilepsy, angina pectoris, and neurasthenia.

However, it is such an important herb with so limited resource. Now scientific research has achieved turning wild tuber of elevated Gastrodia into home one. According to the relationship that the growth of *Gastrodia elata* must depend on the existence of *Armillaria mellea*, the Medicines Institute of the Chinese Academy of Medical Sciences, carried out the studies of the utilisation of *Armillaria mellea*. After repeated tests, they have scored a great success in the artificial cultivation of *Armillaria mellea* of *Gastrodia elata*. It has medicinal effects of quick action and regulating nerves and strengthening the physique. As this medicine has sedative and shock-resistant effects on the central nervous system, can improve blood circulation and increase the blood flow in the cerebral and coronary arteries. Clinical trails have found that *Gastrodia elata* has specific effects on the treatment of such diseases as vertigo, headache, insomnia, high blood pressure, coronary disease, angina pectoris epilepsy, neurasthenia, etc., with the average efficiency above 91%.⁹

2.2 Breeding and Propagating Saiga Antelope and Deer

Saiga Antelope horn (horn of *Saiga tatarica* L., Ling Yang Jiao) is used in calming the liver to clear endogenous wind, clearing away heat from the liver to improve acuity of vision and clearing away heat and toxin. Chinese scientists have introduced Saiga Antelope from Kazakhstan, Russian and established the antelope farm to breed for medical supply.

8. School of Pharmacy, Beijing Medical University. (1979). Chinese Materia Medica. Beijing Medical University Publishing House. 165-167.

9. China National Corporation of Traditional & Herbal medicine. Internal references. No. 839339.

2.3. Pilose antler (*Gornu Cervi Pantotrichum*) is the hairy, non-ossific young horn of stag of *Cervus nippon Temminck* or *Cervus elaphus Linnaeus*.

Its therapeutic effect is reinforcing the kidney-yang, tonifying the vital essence and blood and strengthening the bones and muscles. The researchers in China have successfully introduced home breed deer progress and set up a stock farming of deer.

3. REMOVING MEDICINAL PARTS FROM THE LIVE ANIMALS OR PLANTS OTHER THAN DESTROYING THEM.

3.1. Musk (*Moschus*, She Xiang)

Is the dried secretion from the musk sac of adult male musk deer. It had been used to restore consciousness, to activate blood circulation and stimulate menstrual discharge, to cause subsidence of swelling, and to relieve pain. Because the musk deer is a very rare and endangered animal, Chinese scientists have already employed modern sophisticated science and technology to protect and explore natural medicinal resource. They use artificial breed of wild musk deer, and extract musk from live musk deer successfully. Multiple extraction of musk from live musk deer not only stimulates musk production, but also increases the male musk deer reproductive ability.¹⁰

3.2. Eucommia Bark (*Cortex Eucommiae*, Du Zhong)

Comes from the trunk bark of *Eucommia ulmoides* Oliv. It is applied to nourish the liver and kidney, strengthen the bones and muscles and prevent miscarriage. It is very effective in treating hypertension and vascular diseases. The people used to obtain the medicinal part by peeling bark from the trunk. That usually caused the tree to die. After much research, the people developed the new biotechnology to peel off the bark of *Eucommia ulmoides* Oliv. without damaging the tree. Also the method stimulates the tree's cortex to grow quickly.

4. USING PLANT TISSUE AND CELL CULTURE TO PROPAGATE MEDICINAL HERBS, INCREASE ACTIVE CONSTITUENTS AND PROTECT RESOURCES FROM EXTINCTION.

4.1. Sweet Wormwood (*Herba Artemisiae*, Qing Hao)

Is the herb obtained from the above-ground part of *Artemisia annua* L. It is used clinically in removing heat from the blood, bringing down hectic fever, clearing away heat from the gallbladder, preventing the recurrence of malaria and relieving summer-heat. Ariemisinin is the main component of sweet wormwood.

10. Xu G. J. et al. (1987) Pharmacognosy. People's Health Publishing House. Beijing. 94.

To obtain more quantity of artemisinin, researchers in China have made success of developing and applying the technique of cultivation and are using the tissue culture of *Artemisia Annua* L.¹¹

4.2. *Scopolia acutangula* C. Y. Wuet C. Chen (San Fen San)

Is used to clear away wind-dampness and relieve the pain and spasm. Pharmacological research has shown that it can improve micro-circulation. It contains three main biological active constituents of l-hyoscyamine (l-Lang Dang Jian), scopolamine (Dong Lang Dang Jian) and anisodamine (Shan Lang Dang Jian) etc. They apply the tissue culture *in vitro* to increase both the output and quality and adjust different amounts of these alkaloids.¹²

THE NEED TO DEVELOP CHINESE MEDICINAL RESOURCE AND TO PROTECT THE ENVIRONMENT

The Chinese government has made regular surveys on the utilisation and availability of medicinal materials, so that protection and control of the wild medicinal materials could be enforced. Over recent years, Chinese government has introduced tough measures to control possession and sale of raw products containing prohibited plants and animals. Also environment laws and protection resource laws have been legislated to ban any damaging and killing of endangered species and smuggling goods containing endangered species into and out of China.

Owing to the rapid development of the research and production of medicinal materials, the traditional Chinese herbal medicine has satisfied the needs of medicinal treatment and health care at home as well as the increasing export of foreign trade.

11. Xu G. J. et al. (1987). *Pharmacognosy*. People's Health Publishing House. Beijing. 100.

12. Xu G. J. et al. (1987). *Pharmacognosy*. People's Health Publishing House. Beijing. 100.



Importing Traditional Chinese Medicine (TCM) under the Therapeutic Goods Administration (TGA)

Presenter: Mr Sam Wong - Information Officer, TGA.

Major Aims

- provide a national system of controls,
- provide protection for the public,
- provide surveillance of both imported and locally made products,
- assist the international competitiveness of the industry.

Therapeutic Goods Regulations

Passed by both Senate and House of Representatives.

Commencement date of the Act: 15 February 1991

Therapeutic Goods Act 1989. No. 21 of 1990

Wildlife Protection (Regulation of Exports and Imports) Act 1992

Quarantine Act 1908

Customs (Prohibited Imports) Regulations

Trade Practices Act 1974

Commerce (Trade Description) Act

Therapeutic Goods Act and Regulations

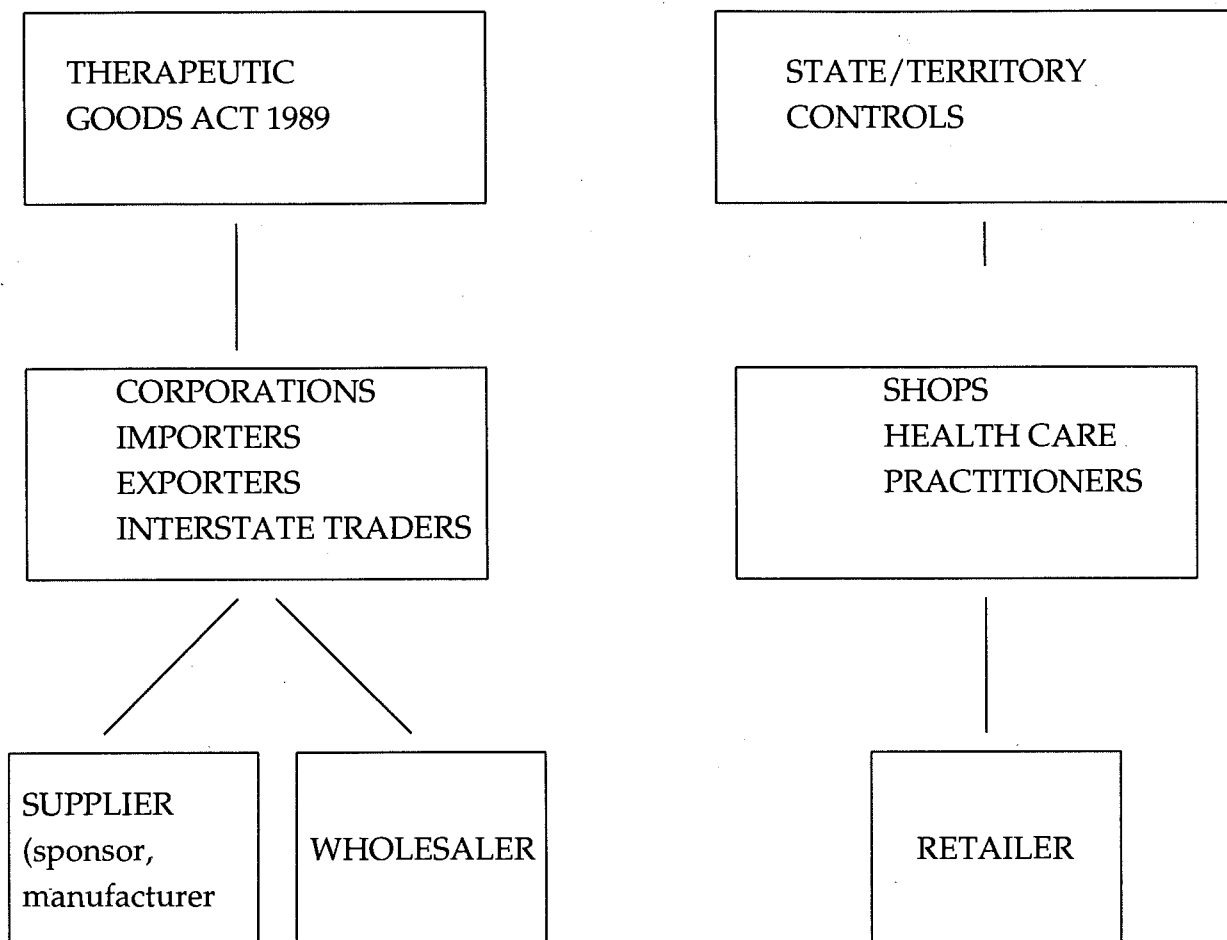
Complementary State and Territory Legislation

TCM Products

TGA Regulates:

- Import
- Export
- Manufacture for Supply
- Supply in Australia

of ready prepared TCM Products. (States also have some regulations).



THERAPEUTIC GOODS ACT 1989

“Therapeutic goods” means goods:

- a) that are represented in any way to be, or that are, whether because of the way in which the goods are presented or for any other reason likely to be taken to be:
 - (i) for therapeutic use: or
 - (ii) for use as an ingredient or component in the manufacture of therapeutic goods; or...
- b) included in a class of goods the sole or principal use of which is, or ordinarily is, a therapeutic use or a use of a kind referred to in subparagraph (a) (ii) or (iii);

THERAPEUTIC GOODS ACT 1989

“Therapeutic use” means use in or in connection with

- a) preventing, diagnosing, curing, alleviating a disease, ailment, defect or injury in persons or animals; or
- b) influencing, inhibiting or modifying a physiological process in persons or animals; or
- c) testing the susceptibility of persons or animals to a disease or ailment: or
- d) influencing, controlling conception in persons; or
- e) testing for pregnancy in persons; or
- f) the replacement or modification of parts of the anatomy in persons or animals.

THERAPEUTIC GOODS

- Therapeutic Devices
(including in-vitro diagnostic products)
- Drugs
 - pharmaceutical's
 - biologicals

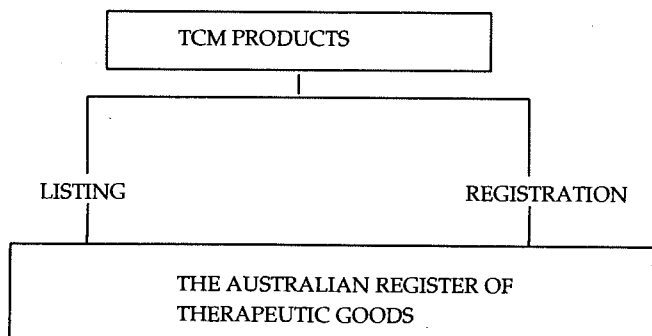
The Act says- All therapeutic goods

- imported
- manufactured for supply
- exported must be on ARTG or an offence is committed.

TCM Products

- Can only be imported or supplied if they are on the ARTG.
- There are severe penalties for offences:
 - \$24 000 for a person
 - \$120 000 for a corporation
- Illegally imported products can also be seized.

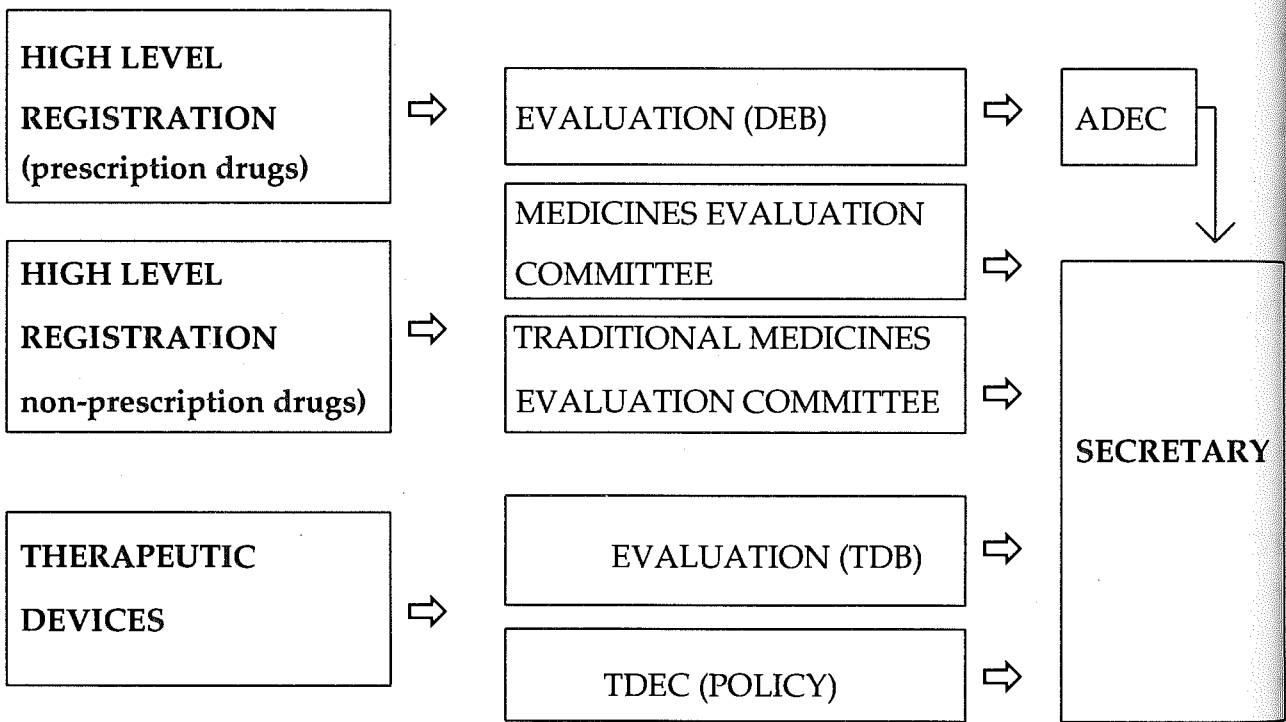
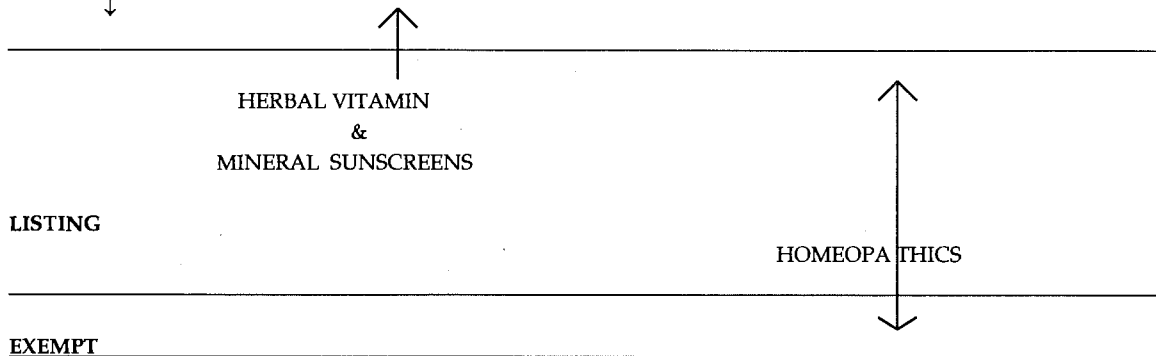
AUSTRALIAN REGISTER OF THERAPEUTIC GOODS



APPROVAL OF DRUGS FOR SUPPLY IN AUSTRALIA

REGISTRATION

HIGH (ORTHODOX)
LOW (DRUGS)



DRUG PRODUCT ON THE ARTG

LISTED	14461
REGISTERED (OTC)	6684
REGISTERED	3702
TOTAL	24847

TCM PRODUCTS

CHINA	400
HONG KONG	05
TOTAL	405

REGISTERED GOODS

- DRUGS Prescription Medicines (S4 & S8)
Injections & Biologicals
New Chemical Entities
O.T.C Products
- DEVICES IOL's/IUD's
Pacemakers /Cardioverters/Heart Valves
Defibrillators
Infusion Systems
Intra-ocular fluids
Biological Devices

Registered Drug Products

- Registration after pre market evaluation needed if:-
- New Chemical Entity
- S U S D P Scheduled Substances
- Contains Ingredients Not Permitted in Listed Products
- Ingredients of Biological Origin
- Vaccines, Dialysis Solutions, Radiopharmaceuticals (etc)
- Claims are for Treatment of Severe Disease
- Other Requirements (ie. Australian Sponsor, Comply with Standards as for Listed Products)

Listed Goods

Herbal Preparations

Homoeopathic Preparations

Vitamin and Mineral Products

Most Therapeutic Devices

Export only Goods

Therapeutic Goods Regulations

2 (r.2)

"herbal substances" means all or part of a plant or substance (other than a pure chemical substance of bacterial origin):

- (a) that is obtained only by drying, crushing, distilling, extracting, expressing, comminuting, mixing with an inert diluent substance or another herbal substance or mixing with water, ethanol, glycerol or aqueous ethanol; and
- (b) that is not subjected to any other treatment or process other than a treatment or process that is necessary for its presentation in a pharmaceutical form;

Listed Drug Products

May be listed on the ARTG without pre market evaluation if:-

- An Australian sponsor
- Activities are eligible for listing
- Only limited indications are claimed
- Manufactured by a licensed manufacturer (Australia) or accepted GMP equivalent (overseas)
- Acceptable presentation
- Comply with standards
- No other impediment (ie Customs [prohibited import] Regulations)

Herbal Medicines - Some Facts and Figures

1564 Herbal Ingredients on the ARTG

\$621 Million (Estimated) spent on alternative medicine in Australia annually.

“Manufacture means”: to produce the goods, or to engage in any part of the process of producing the goods or of bringing the goods to their final state, including engaging in the processing, assembly, packaging, labelling, storage, sterilisation, testing or releasing for sale of the goods or of any component or ingredient of the goods as part of that process.

GMP Requirements

- Standard of overseas manufacturers- March 1996

Options for TCM products

- Approval by other regulatory agency (eg US FDA)
- Audit by approved auditor
- TGA Audit

Evidence of standard of overseas manufacture

Export Certification- but only from countries with standard of GMP equivalent to Australia.

Drugs - PIC countries, USA, Canada, Japan.

Devices - USA, UK, Germany, Switzerland, Scandinavia, Japan.

Plant Master File- but confirmatory inspection usually required at some future date.

Special Audit- eg. by regulatory authority, consultant, Standards Australia, Lloyd's Register, Bureau Veritas. Confirmatory inspection by GMPALS usually required.

Foreign Government Audit- eg UK audit of Dutch company

Audit by TGA- may be requested by local sponsor. May be demanded by TGA.



Environment Australia, Wildlife Protection, C.I.T.E.S. Wildlife Protection (Regulation of Exports and Imports) Act 1982.

Andrew Crawford- Deputy Director, Compliance Unit, Environment
Australia.

Wildlife Protection

- Australian CITES Management Authority
- Permits and Specimens and Trade Data Base
- Australian CITES Scientific Authority
- Australian Wildlife Enforcement Control and Compliance Activity

Duty phone and Help desk functions:

GPO Box 636
Canberra ACT 2601

Telephone: 02 62500 300

Facsimile: 02 62500 303

Email: wps@dest.gov.au

Internet: <http://www.biodiversity.environment.gov.au/plants/wildlife/intro.htm>.



The Convention on International Trade in Endangered Species of Wild Fauna and Flora

WHAT IS CITES?

- International wildlife trade has contributed to declines in the numbers of many species of animals and plants. The scale of over-exploitation for trade led to an international treaty being drawn up in 1973 to protect wildlife against such over-exploitation and to prevent international trade from threatening species with extinction.
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), also known as "the Washington Treaty", entered into force on 1 July 1975 and became enforceable under Australian law on 27 October 1976. There are now 143 member countries which enforce the Convention. These countries participate by controlling trade in an agreed list of species which are considered endangered and by regulating and monitoring trade in others that might become endangered. In Australia, CITES controls are administered under the *Wildlife Protection (Regulation of Exports and Imports) Act 1982*.

WHY IS CITES NEEDED?

- Many species are declining in numbers because of loss of habitat and increased exploitation as human populations grow. Trade has now also become a major factor in the decline, as improvement in transport facilities has made it possible to ship live animals and plants and their products anywhere in the world.
- The wildlife trade is a lucrative business and involves a wide variety of species, both as live specimens and as products. Millions of live animals and plants are shipped around the world each year to supply the pet trade and to meet the demand for ornamental plants. Furskins, leather, ivory and timber, and articles manufactured from these materials are all traded in large quantities. Tourists buying souvenirs also contribute to this trade.

HOW CITES WORKS

- CITES has established a world-wide system of controls on international trade in threatened wildlife and wildlife products by stipulating that government permits are

required for such trade. Security paper and stamps are often used for these permits to prevent abuses such as forgery.

CITES controls international trade in species in three categories:

Endangered Species:

- These are listed in **Appendix I** to the Convention and are species threatened with extinction which are, or may be affected by trade.
- Among those listed are apes, lemurs, the giant panda, many South American monkeys, great whales, cheetah, leopards, tiger, elephants, all rhinoceroses, many birds of prey, cranes pheasants and parrots, all sea turtles, some crocodiles and lizards, giant salamanders, and some mussels, orchids and cacti.

Other species at serious risk:

- Included in this category are species which might become endangered if trade in them is not controlled and monitored "in order to avoid utilisation incompatible with their survival". They are listed in **Appendix II** to the Convention. To prevent threatened species from being traded under the guise of non-threatened species similar in appearance, some non-threatened species are also included in the Appendix.

Species needing support of other countries in preventing or restricting exploitation

- Included in this category are species which any CITES Party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation, and needing the cooperation of other countries in the control of trade. These species are listed in **Appendix III** to the Convention.

ENFORCEMENT

- Enforcement of CITES is the responsibility of member countries, who are required to establish management and scientific authorities for the purpose. In Australia, Environment Australia is the management and scientific authority.
- In most countries, customs officers are given the task of enforcing CITES regulations. Governments are also required to submit reports, including trade records, to the CITES Secretariat in Switzerland.

- In Australia, Wildlife Protection, of Environment Australia is responsible for the coordination of enforcement matters , with the Australian Customs Service undertaking most investigations.
- To ensure effective enforcement at the international level, the CITES Secretariat in Switzerland acts as a clearing house for the exchange of information and liaison between the member states and with other authorities and organisations.

ACHIEVEMENTS

CITES has brought a wide measure of control to the wildlife trade, and this control is being steadily improved as action is taken to deal with gaps and inconsistencies revealed by the analysis of export and import records.

A Brief Outline of the Wildlife Protection (Regulation of Exports and Imports) Act 1982

The *Wildlife Protection (Regulation of Exports and Imports) Act 1982* (the Act) is the legislative basis for conservation-orientated controls on the export and import of wildlife and wildlife products.

Please note that the term "wildlife" should be interpreted in its broader sense, and (unless indicated otherwise) refers to all animals and plants subject to regulation under the Act.

Controls under this Act apply to transactions undertaken by museums, zoos, scientific institutions, commercial organisations, tourists, migrants and the general public.

The Act controls the export of Australian native animals and plants and fulfils Australian legislative requirements as a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The Convention controls the import and export of certain plants and animals, and products derived from them. The species under CITES control are listed in three Appendices:

- **Appendix I** - Species threatened with extinction which are or may be threatened by trade. These species are, with the exception of cetacea, **listed in Schedule 1 of the Act**. Examples of Appendix 1 species include; the African and Asian elephant, the Orang-utan, all species of Sea turtles, and many species of; Leopards, Tigers, Lions, Panthers, Puma, Cheetah, Bears, Monkeys, Apes, Baboons, Zebra, Deer, Rhinoceroses, Alligator, Crocodile, Boas, Python, Cobra, Eagle, Hawk, Condor, Falcon, Parrot, Owl, as well as, a host of plant species including most Orchids.

- **Appendix II** - Species not necessarily threatened with extinction, but could become so unless subject to strict regulation. Appendix II also includes species that are similar in appearance to threatened species. Species in Appendix II, with the exception of cetaceans, are listed in **Schedule 2 of the Act**. Included in Appendix II are Black and Hard Corals, some Frog species, Antelope, Gazelle, Deer, Hippopotamus, Cat, Bear, Chimpanzee, Lizard, Crocodile, Alligator, and Butterfly species, as well as many plant species, including wild American Ginseng.
- **Appendix III** - Species which any CITES Party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation, and needing the cooperation of other countries in the control of trade. These species are listed in **Schedule 2A of the Act**.

The Act also controls the import of live animals and plants to prevent establishment of further pests and weeds that could damage the Australian environment.

ADMINISTRATION OF CONTROLS

The Director of National Parks and Wildlife, is responsible to the Commonwealth Minister for the Environment for administration of the legislation. The Wildlife Protection and the Wildlife Population Assessment Sections of Environment Australia support the Director in administration of the Act.

The Act enables permits or authorities to be issued for a wide variety of purposes. The Act specifies the criteria that must be met before they can be granted. Many decisions to grant or refuse applications for permits and authorities (and associated decisions) are subject to review by the Administrative Appeals Tribunal (AAT).

Please refer to *Wildlife Trade* Information Sheet number 39 for an outline of all decisions subject to review by the AAT.

SUMMARY OF CONTROLS UNDER THE ACT

The Act controls:

- The export of Australian native animals and plants (including parts, products and derivatives) other than those listed in Schedule 4 of the Act;
- The export, re-export and import of animals and plants (including parts, products and derivatives) which are specified in Schedules 1 and 2 of the Act (ie primarily CITES species listed in Appendices I and II)

- The import of animals and plants (including parts, products and derivatives) which are specified in Schedule 2A of the Act (CITES species listed in Appendix III)
- The export and import of Cetacea (whales, dolphins and porpoises), including parts, products and derivatives (Schedule 3 of the Act).
- The import of live animals and plants, other than animals and plants listed in Schedules 5 and 6 of the Act;
- The possession of exotic (ie not native to Australia) species of birds that are NOT listed in Schedule 9 of the Act.

COPIES OF THE ACT

Copies of the Act (which includes the Schedules) and subsequent amendments are available from the Australian Government Printing Service (Commonwealth Government Bookshops) in all capital cities.

Schedules 1 and 2 of the Act are revised approximately every two years. Copies of these schedules are available from Environment Australia in Canberra.

OTHER APPROVALS

The import and export of wildlife and wildlife products may also be subject to controls administered under the Quarantine Act. Information about quarantine matters may be obtained by contacting the Australian Quarantine and Inspection Service (AQIS), phone (02) 6272 3933.

PRIVATE TRADE

ABOUT WILDLIFE IMPORT AND EXPORT CONTROLS

- The *Wildlife Protection (Regulation of Exports and Imports) Act 1982* (the Act) is the legislative basis for conservation-orientated controls on the export and import of wildlife and wildlife products. Controls under this Act apply to transactions undertaken by museums, zoos, scientific institutions, commercial organisations, tourists, migrants and the general public.
- The Act controls the export of most Australian native animals and plants and fulfils Australia's legislative requirements as a signatory to the CITES.

- The Act regulates the importation of most live animals and plants. These controls are in addition to those exercised under the *Quarantine Act 1908*.

PRIVATE IMPORT OF SCHEDULE 1 SPECIES (ie, APPENDIX I OF CITES)

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from the Environment Australia in Canberra and should be lodged along with the relevant application fee.
- Permits may only be granted where the products are derived from captive bred animals or artificially propagated plants, or where it can be established that items were derived from animals or plants taken from the wild before the provisions of CITES applied.
- It is also necessary for the person wishing to import Schedule 1 specimens to obtain a valid export permit from the CITES Authority of the country of export - this export permit should be provided to Environment Australia when applying for the Australian import permit.
- If any difficulties are experienced in meeting the above requirements, please contact the Wildlife Protection Authority of Environment Australia to discuss the matter.

PRIVATE IMPORT OF SCHEDULE 2 LISTED SPECIES (ie, APPENDIX II OF CITES)

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.

Provided that the proposed import is for private purposes only (ie not intended for any commercial purpose whatsoever), an Environment Australia permit may be granted if a CITES export permit has been obtained (prior to export occurring) from the country of export.

PRIVATE IMPORT OF SCHEDULE 2A SPECIES (ie, CITES APPENDIX III)

- A permit to import should be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- An Environment Australia permit may be granted if a CITES export permit or certificate of origin has been obtained from the country of export.
- Please note that additional controls apply if the specimen is a live animal - please contact Wildlife Protection in Environment Australia, if you intend importing a live animal.

PRIVATE IMPORT OF SCHEDULE 3 LISTED SPECIES (ie, CETACEA - WHALES DOLPHINS AND PORPOISES AND PRODUCTS THEREOF)

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- The importation of cetacea and cetacea products is highly restricted. Private imports will only be approved provided:
 - there are **exceptional circumstances** justifying the grant of the permit, AND
 - the specimen (product etc) is derived from an animal that was **bred in captivity** (proof of which **must** be provided).

PRIVATE IMPORT OF LIVE ANIMALS

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- Except for some domesticated animals and certain aquarium fish, the import of live animals and animal reproductive material is regulated to prevent the establishment in Australia of species which may adversely affect the environment. The decision to permit importation depends on the views expressed by each State and Territory conservation authority and other relevant organisations.
- An environmental impact statement may be required under the *Environment Protection (Impact of Proposals) Act 1974*, before a decision is finalised on a specific application.

PRIVATE EXPORT OF LIVE NATIVE AUSTRALIAN ANIMALS

- An export permit must be obtained prior to export occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- Please note that the export of live native animals is stringently regulated, and in most cases export of live native animals is prohibited. An exception exists in the case of exports of live native birds as household pets, provided that certain conditions have been complied with. A separate *Wildlife Trade* advice is available on the export of household pets.

PRIVATE EXPORT OF AUSTRALIAN NATIVE PLANTS AND ANIMAL PRODUCTS

In most cases an export permit must be obtained prior to exporting products of native wildlife. There are a number of exceptions to the requirement for a permit - such as:

- Kangaroo products derived from one of the following species, which are the personal property of a person departing from Australia, and which are not intended to be used for any commercial purpose, including sale, lease, hire or exchange:
 - Western grey kangaroo (*Macropus fuliginosus*)
 - Eastern grey kangaroo (*Macropus giganteus*)
 - Whiptail wallaby (*Macropus parryi*)
 - Euro or Wallaroo (*Macropus robustus*)
 - Bennett's wallaby (*Macropus rufogriseus*)
 - Red Kangaroo (*Macropus rufus*)
 - Rufous wallaby (*Thylogale billardierii*)
- A specimen, other than a live animal, derived from the species *Trichosurus vulpecula* (**brush possum**), which has been taken in accordance with an approved management program, which is the personal property of a person departing Australia or an external Territory and which is not intended to be used for any commercial purpose, including sale, lease, hire or exchange.
- A specimen, other than a live animal, derived from the species *Dromaius novaehollandiae* (**emu**), which has been bred in captivity (as defined under the Act), which is the personal property of a person departing Australia or an external Territory and which is not intended to be used for any commercial purpose, including sale, lease, hire or exchange.
- A specimen, being a manufactured article produced from an animal from the Australian population of *Crocodylus porosus* (**saltwater crocodile**) or *Crocodylus johnstoni* (**freshwater crocodile**), where the animal was either bred in captivity or taken under an approved management program, which is the personal property of a person departing for a foreign country, is not intended for any commercial purpose including sale, lease, hire or exchange, and which is accompanied by a "EXPORT PERMIT MANUFACTURED CROCODILE PRODUCTS" label issued by Environment Australia.

PRIVATE EXPORT (OR RE-EXPORT) OF CITES LISTED PRODUCTS AND SPECIMENS

An Australian CITES export or re-export permit must be granted prior to the export of any such items. Application forms are available from Environment Australia in Canberra, and should be lodged with the relevant application fee.

- Please note that the failure to obtain an Australian CITES export permit may result in the confiscation of the goods either in Australia (at the point of export) or in the country of import.

OTHER APPROVALS

The import and export of wildlife and wildlife products may also be subject to controls administered under the Quarantine Act. Information about quarantine matters may be obtained by contacting the Australian Quarantine and Inspection Service (AQIS), phone (02) 6272 3933.

PERMIT FEES

Cheques, money orders or postal notes should be made payable to the 'Collector of Public Monies'.

Fees should be enclosed with the application to import or export. In cases where permits are not granted, the fee will be refunded.

- | | |
|---|--------|
| • Permit to export/ re-export a household effect derived from crocodiles as accompanied baggage | \$1.00 |
| • Permit to export an Australian native bird as a household pet | \$150 |
| • Permit to export or import in any other circumstances | \$30 |

Commercial Trade - Wildlife Import and Export Controls

- The *Wildlife Protection (Regulation of Exports and Imports) Act 1982* (the Act) is the legislative basis for conservation-orientated controls on the export and import of wildlife and wildlife products. Controls under this Act apply to transactions undertaken by museums, zoos, scientific institutions, commercial organisations, tourists, migrants and the general public.
- The Act controls the export of most Australian native animals and plants and fulfils Australia's legislative requirements as a signatory to the **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**.

- The Act regulates the importation of most live animals and plants. These controls are in addition to those exercised under the *Quarantine Act 1908*.

IMPORT OF SCHEDULE 1 SPECIES

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- Permits may only be granted where the products are derived from captive bred animals or artificially propagated plants.
- It is also necessary for the person wishing to import Schedule 1 specimens to obtain a valid export permit from the CITES Authority of the country of export - this export permit should be provided to Environment Australia when applying for the Australian import permit. **Please note** that import of products derived from **wild taken** Schedule 1 species for any commercial purpose is **prohibited - this applies regardless of the age or origin of the item**.
- If any difficulties are experienced in meeting the above requirements, please contact the Wildlife Protection Authority of Environment Australia to discuss the matter.

IMPORT OF SCHEDULE 2 LISTED SPECIES

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- Permits may be granted where the products are derived from captive bred animals, artificially propagated plants, or in the case of wild taken products - where a controlled specimens or management program has been approved under the Act - **Please note** that the existence of a management program in the country of proposed export does NOT constitute acceptance for the purpose of obtaining Australian import approval. The management program **MUST** be approved under the Australian Wildlife Protection Act.
- It is also necessary for the person wishing to import Schedule 2 specimens to obtain a valid export permit from the CITES Authority of the country of export - this export permit should be provided to Environment Australia when applying for the Australian import permit. **Please note** - do not import **WITHOUT** the prior grant of both the overseas and Australian CITES permits.

IMPORT OF SCHEDULE 2A SPECIES (ie, CITES APPENDIX III)

- A permit to import should be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- An Environment Australia permit may be granted if a CITES export permit or certificate of origin has been obtained from the country of export.
- Please note that additional controls apply if the specimen is a live animal - contact the Wildlife Protection Authority in Environment Australia, if you intend importing live animals.

IMPORT OF SCHEDULE 3 LISTED SPECIES (ie, CETACEA - WHALES DOLPHINS AND PORPOISES AND PRODUCTS THEREOF)

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- The importation of cetacea and cetacea products is highly restricted. Imports will only be approved provided:
 - there are **exceptional circumstances** justifying the grant of the permit, AND
 - the specimen (product etc) is derived from an animal that was **bred in captivity** (proof of which **must** be provided).

IMPORT OF LIVE ANIMALS

- A permit to import must be obtained from Environment Australia prior to import occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- Except for some domesticated animals and certain aquarium fish, the import of live animals and animal reproductive material is regulated to prevent the establishment in Australia of species which may adversely affect the environment. The decision to permit importation depends on the views expressed by each State and Territory conservation authority and other relevant organisations.
- An environmental impact statement may be required under the *Environment Protection (Impact of Proposals) Act 1974*, before a decision is finalised on a specific application.

- Importers will need to receive "approved institution" status (under the Wildlife Protection Act) before the animals are imported. Details are available from the Wildlife Protection Authority of the Environment Australia.

EXPORT OF LIVE NATIVE AUSTRALIAN ANIMALS

- In most cases the export of live native animals is prohibited. An exception exists in the case of exports of live native birds as household pets for personal purposes only, provided that certain conditions have been complied with. A separate *Wildlife Trade* advice is available on the export of household pets.
- Schedule 4 of the Act provides a list of live native wildlife that can be exported without a permit from Environment Australia. A separate *Wildlife Trade* advice provides further detail on wildlife not requiring an export permit.

EXPORT OF AUSTRALIAN NATIVE PLANTS AND ANIMAL PRODUCTS:

- A permit to export must be obtained from Environment Australia prior to export occurring. Application forms are available from Environment Australia in Canberra, and should be lodged along with the relevant application fee.
- Australia has an established trade in exporting skins of captive bred crocodiles, emus, artificially propagated native plants, including orchids, and captive bred butterflies and fish.
- Trade in products of animals and plants taken from wild populations is also permitted under permit. Management programs and controlled specimen programs currently enable the export of products derived from a range of species including kangaroos, brush possum, mutton birds and wildflowers from Western Australia etc.

EXPORT (OR RE-EXPORT) OF CITES LISTED PRODUCTS AND SPECIMENS

- An Australian CITES export or re-export permit must be granted prior to the export of any such items. Application forms are available from Environment Australia in Canberra, and should be lodged with the relevant application fee.
- Please note that the failure to obtain an Australian CITES export permit may result in the confiscation of the goods either in Australia (at the point of export) or in the country of import.

OTHER APPROVALS

The import and export of wildlife and wildlife products may also be subject to controls administered under the Quarantine Act. Information about quarantine matters may be obtained by contacting the Australian Quarantine and Inspection Service (AQIS), phone (02) 6272 3933.

PERMIT FEES:

Cheques, money orders or postal notes should be made payable to the 'Collector of Public Monies'.

Fees should be enclosed with the application to import or export. In cases where permits are not granted, the fee will be refunded.

• Permit to export/ re-export a household effect derived from crocodiles as accompanied baggage	\$1.00
• Permit to export an Australian native bird as a household pet	\$150
• Permit to export or import in any other circumstances	\$30
• Approved institution status (for live animals)	\$150

The Use of Wildlife Products in Medicines

Many endangered species are used as ingredients in Asian and other medicines (including vitamins).

Trade in medicines containing endangered or threatened species is strictly regulated. To import any of these medicines into Australia, a permit must be obtained from Environment Australia's Wildlife Protection Section.

Medicines containing species not listed on CITES may be imported without a permit from Environment Australia's Wildlife Protection Section.

Please ensure you have documents which clearly identify the products (by scientific name) before import. Failure to do so may result in delays in clearance.

Please note that any product describing the contents as containing specimens subject to control under the Act, will be considered to contain that specimen and will be required to meet the requirements of the Act before importation will be permitted.

PERSONAL IMPORTS

Medicines containing species listed in Schedule 1 of the Act

Permits to import medicine products containing species listed on Schedule 1 may be issued for private purposes provided that:

the product proposed for import was derived from animals bred in a captive breeding operation registered with the CITES Secretariat in Switzerland (NOTE: There are currently no registered captive breeding operations for Schedule 1 species (other than for crocodiles). Therefore, the import of most products from Schedule 1 species is currently prohibited); or

the product was obtained prior to the species being listed on CITES (in most cases the date for pre-CITES is July 1976).

Applications for permits must be supported by the following documents:

a CITES export permit issued by the exporting country clearly showing the source of the products (eg. pre-CITES); and

a statement that the product is for personal use only and will not be sold or traded and will remain the property of the importer.

Medicines containing species listed in Schedule 2 of the Act

Permits to import medicine products containing species listed on Schedule 2 may be issued for private purposes provided that a CITES export permit has been issued by the CITES authority in the country of export.

Applications for permits must be supported by the following documents:

a CITES export permit issued by the exporting country; and
a Statutory Declaration stating that the product is for personal use only and will not be sold or traded and will remain the property of the importer.

COMMERCIAL IMPORTS

Medicines containing species listed in Schedule 1 of the Act

Permits to import medicine products containing species listed on Schedule 1 may only be issued for commercial purposes provided that:

the product proposed for import was derived from animals bred in a captive breeding operation registered with the CITES Secretariat in Switzerland.

(NOTE: There are currently no registered captive breeding operations for Schedule 1 species (other than for crocodiles). Therefore, the import of most products from Schedule 1 species is currently prohibited).

Medicines containing species listed in Schedule 2 of the Act

Permits to import medicine products containing species listed on Schedule 2 may be issued for commercial purposes provided that the products are derived from wildlife which have been:

bred in captivity; or

taken under an Australian approved harvesting/ranching operation.

Applications for permits must be supported by a CITES export permit issued by the exporting country clearly showing the source of the products (eg. captive bred).

ADDITIONAL CONTROLS

The import of medicines is also controlled by the Therapeutic Goods Act 1989, which requires that, prior to supply in Australia, therapeutic goods must be entered on the Australian Register of Therapeutic Goods (unless they are exempt goods) and must comply with Australian standards. For further information, contact:

The Therapeutic Goods Administration Information Officer

PO Box 100
WODEN ACT 2606

Ph: (02) 62897557

GENERAL INFORMATION

Permit Applications

An Australian CITES permit must be issued prior to the consignment of the items. Application forms are available from Wildlife Protection in Canberra. PLEASE NOTE that the failure to obtain an Australian CITES permit prior to consignment of the items may result in the confiscation of the goods. Severe penalties exist for persons or companies breaching the Wildlife Protection Act.

Permit Fees

The fee for a permit is \$30. Fees should be paid by cheque or money order made payable to the "Collector of Public Monies". In cases where permits are not issued the fee will be refunded.

Other Approvals

The import and export of wildlife and wildlife products may also be subject to controls administered under the Quarantine Act. Information about quarantine matters may be obtained by contacting the Australian Quarantine and Inspection Service (AQIS), phone (02) 6272 3933.

FOR FURTHER INFORMATION

Please contact a Wildlife Protection Officer (refer to page 43 for our contact details).



A Retailers Perspective

Presentation by Mr Ping Hoang - Pacific Herbal Centre.

For the last 15 years, I have been trading in Traditional Chinese Herbs in Sydney, and have witnessed a tremendous growth in the acceptance and popularity of this medicine in the community, due to its natural remedies and its long clinical history.

At the same time, it also gains the awareness of government authority, such as the TGA established facilities for herbal evaluation, and guarantees department increasing their ability to recognise and distinguish particular herbs.

Recently, there has been an increase in the concern about the use of wildlife and endangered species within Chinese herbal medicine. So I think this first symposium is a good opportunity to present the facts and to clarify the many myths and rumours surrounding some of the more infamous herbal products. Their use in an ancient context and today's substitutes.

The use of animal products within Chinese Herbal Medicine, comes to less than 5% of the total range of remedies. These include from the West commonly used, such as chicken gizzard, oyster shell to the more exotic tiger bone. Cattle's gall stone, bear gall, snake, rhinoceros horn, sea horse etc.

In regard to endangered species, for example, rhinoceros horn, as documented in ancient text, was used in minute amounts to reduce high fever, delirium and convulsion, especially in infants and children. Tiger bone was used in severe debilitated rheumatic conditions, and bear's gall was used to reduce dangerous inflammation and treatment for heart conditions. However, today we have other alternatives like conventional medicine or other means to [...]

As to its rumoured aphrodisiac effects, well they are just that, rumours and totally unsubstantiated.

In dispensing herbal remedies, I have not come across these products for the past 15 years. They are only contained in some less than 20 products, amongst thousands of prepared pills or extracts from overseas. Even so, I have doubt [about] some of these products, do they actually contain such ingredients as claimed on the label? due to the cost of these products. The reputation of the manufacturer, and the value of such products on the market as to the availability of such ingredients.

As a means to manage this issue, and to bring a balanced viewpoint into the traditional Chinese medicine practices and wildlife conservation, firstly, China has set up musk deer farm for nearly 20 years, also for bears as well. They also tried to make these components synthetically. Using cow bone etc. as a substitute for tiger bone. In recent years, in Australia, we have seen very successful deer farming, which actually supply deer products to Asia, and last month, I heard news that some one in Sydney started farming sea horses. In Northern America and Canada, they have hunting quotas for bears due to environmental control.

Secondly, we need more research into the use of suitable substitutes.

Thirdly, we need to raise the awareness of such issues among the profession and the consumers.

Fourthly, a collaboration between the traditional use of such products and regulatory bodies, such as in cooperation with the CITES criteria, which has been established since 1975 and other international bodies, eg. TRAFFIC, WWF etc.

In Australia, I believe the retailers are still not very informed, in regard to these issues and regulations. We hope to have more mutual communication between the profession and the relevant authorities, to collaborate in setting up informed regulations.

To take an example, in recent years, it has been prohibited to trade wild American/Canadian ginseng (being an endangered species), but at the same time, cultivated ginseng also was banned with no apparent reason. This stresses the importance of mutual collaboration.

The use of wildlife has gained international attention and rightly so. We hope with the joint effort, we can together, bring about a healthy balance, and take traditional Chinese medicine in line with modern environmental concerns.



Linking the TCM Community, the Environment and the Law: Ways Forward.

Presentation by Councillor Henry Tsang. OAM, Deputy Lord Mayor of Sydney.

Welcome to the final formal session of today's symposium on Traditional Chinese medicine and Wildlife Conservation.

In the past few hours you have heard much about the important role you can play in the Australian industry as practitioners, and importers and ship owners.

I would just like to take a few minutes to re-visit several of the key points outlined by today's speakers.

In the opening address, the point was made that in the last five years, 42,917 illegal items were seized by Australian authorities. Some of these items included bear, leopard, musk, rhino and tiger.

Many of the *other* items seized could have been legally imported. They failed because the correct permits had not been obtained.

As Sam Wong made clear in the Strand B Workshop, if an importer stays within the requirements of the Therapeutic Goods Administration Act and abides by the Australian Customs Act and Quarantine Act, many of these imports would be deemed legal.

Andrew Crawford followed up this issue by outlining the requirements for importing plant and animal species under the Wildlife Protection Act.

So a very important point stressed today is: check what can and cannot be brought into the country and obtain the correct permits.

Yifen Yang gave us an understanding of the history of traditional Chinese medicine and outlined the difference between wild and farmed animals.

Ping Huong spoke about the great growth in the industry in recent years. He pointed to the captive breeding and farming of Australian deer, which are now supplying products to Asia, as an example of the industry's potential. A potential, I might add, which will only be

realised if everybody in the industry, environmental bodies and related government departments work closely together.

Samuel Lee gave us an international perspective on the use of endangered species for traditional Chinese medicine. He also discussed the implications to Australia and our responsibilities. Once again, the importance of quality communication between government and TCM communities was stressed.

In the Strand A workshop, practitioners were fortunate to hear from two experts, Alan Bensoussan and Jerry Zhang. Alan made clear that responsible use of traditional Chinese medicines means avoidance of illegal medicines. While Jerry focused on substitutes to endangered species, such as using Buffalo horn instead of Rhino horn.

So while we all must remember our responsibilities - both legal and moral - it is important to keep in mind that quality legal alternatives are readily available.

In conclusion, I would like to add my own personal perspective from a Chinese community viewpoint.

Traditional Chinese medicine has a clear-cut linkage to the Chinese community. In name, in history and in the number of Chinese community members involved in the profession. The issue of illegal use of endangered species and wildlife has the potential to significantly damage the Chinese community's reputation.

Racists, such as Pauline Hanson, will look for any reason to inflict damage on the Asian community. We need to be vigilant that we do not offer her reasons to attack our professions, our industries and ourselves.

Based on these facts and the information that has been brought to you tonight, I ask you to join me in supporting the following motion.

The First Australian International Symposium on Traditional Chinese Medicine calls upon:

1. The Australian Government to work closely with the Traditional Medicine community in Australia to develop appropriate educational campaigns about endangered species in traditional medicines.
2. The Australian Government to strictly police illegal imports of traditional Chinese medicine containing endangered species into Australia.
3. Practitioners and users of traditional Chinese medicine in Australia to avoid the use of illegal medicines containing endangered species.

4. That the convenor of this conference write to the Chinese Ambassador in Australia on our behalf seeking the Peoples Republic of China's support in ensuring all exported medicines do not contain endangered plant and animal species.



Linking the TCM Community: Ways forward

Mr Robert Ho OAM, JP, FCIA.

Distinguished guests, ladies and gentlemen- good evening. A month ago when asked by Jane Holden, and two weeks ago when I was asked by Samuel Lee, to speak tonight, I said what does a Chinese cook know about traditional Chinese Medicine. I don't know whether it is a blessing or a curse when you are one of the last speakers after so many professionals, maybe it is a curse because my notes are similar to my wives, [Helen Sham-Ho] making mine half redundant. I did ask for other reference material to look at, the protection of bears, being one- so did one of the speakers earlier on, so again, I haven't had much luck.

I hope you will allow me, instead of trying to express what the previous speakers have already said, that I share my experience in Australia regarding traditional Chinese medicine.

I came here in 1959 as a student, the only Chinese medicine available, were in two Chinese grocery stores in Dixon St. Trying to get an opinion or help from practitioners, was difficult as you could count the number of practitioners on one hand. The strangest thing is when you asked one, then the other, you received conflicting advice and didn't know which way to go. I am pleased to say that since then, there has been drastic changes in traditional Chinese medicine in Sydney.

I travel to China quite a bit, and I have observed some of the ways and scientific improvements that I would like to share with you tonight.

Three years ago, I went to the University of Traditional Chinese Medicine in Quong Tuo [?] because I was going to be examined for open heart surgery, which I have been involved with for the past five years with Australian doctors and nurses from various hospitals and Adventists hospital, and the Royal North Shore we began going to China for heart operations. Each time they operate on fifteen patients; this is our fifth year, and touch wood, each one has been a success. Also this year we are going into Cia An [?] for the first time to perform heart clearing operations. I enjoy being involved in this, because I am one of the patients of the late Dr Victor Chang. For being given the chance of survival, I have developed a lot of interest in people's health.

On a recent trip to hospital, I was surprised to find instead of seeing a patient being given a prescription for different types of herbs, now the herbs have been boiled, condensed, and measured, then put in a bottle.

You take it away and use it as prescribed, otherwise I think traditionally, you go to see a practitioner that you live close to and you receive six courses for the week or for two weeks. When you go home and you start to boil it, you have to have very understanding neighbours, otherwise you get a helluva lot of complaints. So to me, today's methods, are a very obvious improvement.

I am very pleased to address this symposium this evening, put together by three different organisations, surely we are all here for our interests and it is a very good start with very open dialogue, so I am very pleased to see the room is so full particularly at this hour of the night. I thank you for staying until now.

I think it is important that we get together and share our responsibilities and duties to perform. I just talked to a lady earlier here, I said why do you take traditional Chinese medicine, she said that she suffered from terrible migraine headaches for a long time, I asked her if she had stuck with Western medicine, would you feel better now? I am pleased that she told me that Chinese medicine had given her the relief and she is now in her second year at the College of traditional Chinese medicine.

People ask me, what medicine do I use, I have friends in both Eastern and Western practice, I can't deny that with open heart surgery, I want the equipment, the machinery, the scientific control provided by Western medicine, but for other problems, even though I have been here for so many years, despite being as 'ocker' as they come, somehow I still go back to traditional Chinese medicine.

I was in Beijing three years ago, I was told that there was a new concept of medicine, not by the intake of medicine, but you go a restaurant and you look at the menu and it tells you the type of food and what it is good for, out of curiosity I went there, and asked the head waiter, I explained how I felt and asked him to recommend what I should eat, he took my pulse, looked in my mouth and said I should have soup as my main course. I realised they are trained professionals and they use medicine in their food, so this for our Western family is something a little bit different for you to realise.

When I was in China I tried to help set up a medicine cupboard, the cupboard contained Russian medicine, so I asked a nurse to help me. Discussing our options with some Australian's meant sticking to Panadol and things we are familiar with, so we put our medicine on top of the Russian medicine, to be on the safe side, I don't mind the exchange of knowledge- experience is the only practical way to get along, we can then benefit from each other's experience and culture.

Before I came here, I asked a very well respected traditional Chinese medicine practitioner in Chinatown, I asked him for his advice to help me prepare for tonight's address.

He said that the history of Chinese medicine began with the tasting and recording of all types of plants. I thought he was lucky to get so much accomplished, imagine if he had started with marijuana.

I have read a little about endangered species recently, specifically, bears and tigers. I believe there are over 7,000 bears in captivity in China, with about 200 cubs born every year, they are used to produce a medicine. I believe they produce about 7,000 kilograms of medicine, and yet the statistics show that in 1996, there was a requirement only for 3,000 kilograms in China. 4,000 kilos more than needed, so I do not know how far we should look at it from a humanitarian point of view. It is very much like restaurants, we get accused that we have too many lobsters in one tank, the RSPCA came and visited me, they said I can't serve lobster sushi- its a cruelty issue.

To me, humanity depends on what level and what purpose, if we can farm some animals and have it help human life, without endangering species, then I leave it to your judgement, but then, it is an international issue, we should at least work together and have open dialogue. I am very pleased to be involved in this open discussion.

A couple of years ago I was invited to the formation of an Acupuncture course at the University of Technology, here in Sydney. I have also been closely involved with the Chinese herbal research centre in the University of Sydney, I believe these are important approaches for those involved in TCM to work together for the benefit of the local- fellow practitioners from China, Hong Kong and elsewhere. I wish you all the best of luck, and when the time comes when you are fundraising, please feel free to come and see me.

