

Healthy People – Healthy Wildlife

**Proceedings of the Second Australian
Symposium on Traditional Medicine
and Wildlife Conservation**

**Melbourne Australia
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**TRAFFIC
OCEANIA**



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Table of Contents

WELCOMING ADDRESS	1
OPENING ADDRESS	5
INTRODUCTION	5
GROWTH OF TRADITIONAL MEDICINE IN AUSTRALIA.....	6
LINKS TO ENDANGERED SPECIES	6
THE WAY FORWARD	8
CONCLUSION	9
THE WILDLIFE PROTECTION ACT AND TRADITIONAL MEDICINES	11
CITES AND THE WILDLIFE PROTECTION ACT	11
THE WILDLIFE PROTECTION ACT AND TRADITIONAL MEDICINES	12
WHY IS THE AMENDMENT TO THE WILDLIFE PROTECTION ACT NECESSARY?	13
CONCLUSION	13
TRADE IN TRADITIONAL MEDICINE USING ENDANGERED SPECIES - AN INTERNATIONAL CONTEXT.....	15
INTRODUCTION	15
WHEN TCM MEETS WILDLIFE CONSERVATION	15
"CONVERSATIONAL" VERSUS CONFRONTATIONAL.....	16
UNDERSTANDING TRADITIONAL MEDICINE.....	16
COMMUNICATION CHANNELS	17
LANGUAGE	18
CULTURAL DIFFERENCES	18
THE WAY AHEAD: FROM ANIMAL TO PLANT	18
TCM IN AN AUSTRALIAN CONTEXT	19
CONCLUSION	19
IMPORT CONTROLS ON TRADITIONAL MEDICINE UNDER THE <i>THERAPEUTIC GOODS ACT 1989</i> AND ASSOCIATED LABELING ISSUES	21
THE THERAPEUTIC GOODS ACT.....	21
OCCUPATIONAL REGULATION OF CHINESE MEDICINE IN VICTORIA.....	25
OVERVIEW	25
BACKGROUND	25
RECOMMENDATIONS OF "TOWARDS A SAFER CHOICE - STAGE I":	26
<i>Occupational Regulation of Health Practitioners.....</i>	27
<i>Powers and Functions of Health Practitioner Registration Boards</i>	28
<i>Key Features of the Victorian Health Practitioner Registration Model</i>	28
<i>Key Features of the Proposed Chinese Medicine Registration Act.....</i>	29
<i>Regulation of Use of Endangered Species via Occupational Regulation.....</i>	30
<i>The Commonwealth Wildlife Protection Act</i>	30
<i>Unprofessional Conduct Powers.....</i>	31
<i>A Code of Optimal Practice on the Use of Medicines Containing Material from Endangered Species</i>	32
<i>Potential for Strengthening the Board's Powers - Specific Offence Provisions</i>	33
CONCLUSIONS.....	33
THE RESPONSIBLE USE OF TRADITIONAL CHINESE MEDICINE.....	35
THE CURRENT SITUATION IN CHINA ON THE USE OF ENDANGERED SPECIES IN CHINESE MEDICINE	41
ALTERNATIVE MEDICATION TO WILDLIFE SPECIES	42
INTRODUCE A LEGISLATION SYSTEM.....	42

AN EDUCATION AGENDA.....	43
ALTERNATIVES TO THE USE OF ENDANGERED SPECIES IN CHINESE MEDICINE.....	45
ABSTRACT.....	45
INTRODUCTION.....	45
NEWLY IDENTIFIED SUBSTITUTES FOR ENDANGERED SPECIES.....	46
<i>Buffalo Horn (Shui Niu Jiao) Instead Of Rhinoceros Horn.....</i>	46
<i>Pig Bone Instead of Tiger Bone.....</i>	46
<i>Radix Berberidis Instead of Rhizoma Coptidis.....</i>	47
CULTIVATING WILD PLANTS AND BREEDING ENDANGERED ANIMALS.....	47
<i>Cultivating Rhizoma Gastrodiae (Tian Ma).....</i>	47
<i>Breeding and Propagating Saiga Antelope and Deer.....</i>	48
<i>Removing Medicinal Parts from Live Animals or Plants without Destroying Them.....</i>	48
<i>Using Plant Tissue and Cell Culture to Propagate Medicinal Herbs.....</i>	48
<i>Using Artificial Substitutes Instead of Animal Parts.....</i>	49
<i>Developing Chinese Medicine and Protecting the Environment.....</i>	49
TIGER BONES, RHINO HORNS, BEAR BILE, MANCHURIAN GINSENG AND TRADITIONAL CHINESE MEDICINE PRACTICE IN AUSTRALIA.....	51
TCM PRACTICE OF <i>LI FA FANG YAO</i>	51
THE YAO - "ALL SUBSTANCES WHICH TREAT DISEASES".....	52
<i>Yao and the West.....</i>	54
<i>Medicinal Value of the Yao.....</i>	56
MATERIA MEDICA AS ENDANGERED SPECIES.....	57
<i>Using Leopards, Bats, Magpies and Pigeons.....</i>	58
Proposals.....	60
PROGRAM.....	63
LIST OF REGISTRANTS AND SPEAKERS.....	65

Welcoming Address

Mr Haisheng Zhao
Cultural Consul

Consulate General of the People's Republic of China - Melbourne

It truly gives me a great pleasure and honour to attend this symposium on Traditional Medicine and Wildlife Conservation. I appreciate this wonderful opportunity to appear before you and join you today in the discussion of how government, industry and community groups associated with Chinese medicine practices and wildlife conservation, could better communicate and understand each other.

First of all, please allow me, on behalf of Mr. Wu Ronghe, Consul General of the People's Republic of China in Melbourne, to extend my heartfelt congratulations to Environment Australia, Royal Melbourne Institute of Technology (RMIT) and Traffic-Oceania on jointly organising this symposium. I also wish to welcome everybody to Melbourne and extend my cordial greetings to everyone present here today.

The purpose of today's symposium is to encourage communication and mutual understanding of Chinese medicine practices and its relationship with wildlife conservation, to provide information on alternatives to the use of endangered species in Chinese medicine and the laws controlling protected species and traditional medicines. I would like to take this opportunity to share with you some brief information about what China has done in protecting its environment, especially the ecological environment and biodiversity.

The protection of wild plants and animals is a global issue and also a common task for mankind. The Chinese Government has paid great attention to environmental issues and has made environmental protection an important aspect of the improvement of the people's living standards and quality of life. According to China's Constitution; "The State protects and improves the living environment and the ecological environment, ensures the rational use of natural resources and protects rare animals and plants. The appropriation or damage of natural resources by any organisation or individual by whatever means is prohibited".

We realise that the prevention and control of environmental pollution and ecological destruction and the rational exploitation and utilisation of natural resources are of vital importance to China's overall interests and long-term development. Since the early 1980s, China has begun to enact and implement a series of policies, laws and measures for environmental protection, making environmental protection one of China's basic national policies. Many special laws and regulations, including Forestry Law, Grassland Law, Wild Animals Protection Law, Regulations on Nature Reserves, Regulations for Implementation of the Protection of Terrestrial Wildlife have been enacted and promulgated. Environmental protection organisations have also been established at various levels to take charge of related environmental and resources protection work. At present, the total number of various types of environmental protection workers employed by the various departments and enterprises exceed 200,000.

Ecological environmental protection has long been regarded as the focal point of China's environmental protection work. The government has paid special attention to the construction of forest ecological projects. Since 1978 China has established ten forest ecological projects, with a

scheduled afforestation area of 120 million hectares, aimed mainly at protecting and improving the natural eco-environment and realising the sustainable use of natural resources.

We have also adopted the on-site conservation and off-site preservation methods to protect biodiversity. Currently, there are 612 national-level rare and endangered species of flora and fauna listed as key protection species, including 258 species of wild animals and 354 species of plants. Artificial reproduction has been successfully implemented for more than 60 species of rare and endangered animals, and through propagation, such species as David's deer, wild horse and *Saiga tatarica* have been re-introduced.

Establishing nature reserves is the most effective method for the in situ conservation of wild plants and animals. By the end of 1997, China established 932 nature reserves of rather diversified types covering a total area of 76.71 million hectares (or 7.29 % of China's territory). The establishment of natural reserves has put a number of representative and typical natural eco-systems with scientific research value as well as rare and endangered species under effective protection.

Establishing zoological gardens, botanical gardens and various artificial breeding centres is an effective method for off-site preservation of various species of wild animals and plants. By the end of 1995 China had set up 175 zoological gardens and zoological exhibition sites in public parks, 227 artificial breeding centres for wild animals, more than 60 large botanical gardens and 255 wild plant gene and cell banks to ensure the continuation of rare and endangered species of plants and animals, including the Giant panda, Chinese alligator, Chinese sturgeon, White-flag dauphin, Manchurian tiger, Crested ibis, Cathay silver fir, Dovetree, *Cycas revoluta* and *Camellia chrysantha tuyama*. In addition, some dozen specimen centres, one gene bank and two cell banks for wild animals, which have helped genetic polymorphism research and preservation work, have also been established.

The medical use and trade in rhinoceros horn, tiger bone and many other rare and endangered animals is strictly prohibited by the Government, and illegal hunting of rare wild animals is severely punished by law.

As a member of the international community, China has taken an active part in international environmental affairs, striven to promote international cooperation in the field of environmental protection and earnestly fulfilled its international obligations. Over the past ten-odd years China has successively signed bilateral environmental protection cooperation agreements and memorandums of understanding with many countries, including Australia.

Since 1979 China has signed a series of international environmental conventions and agreements, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora and the Convention on Biological Diversity.

To further promote international cooperation in the environment and development fields, China set up the China Council for International Cooperation on Environment and Development in April 1992, composed of more than 40 leading specialists and well-known public figures from China and other countries, to be responsible for submitting proposals and advisory opinions to the Chinese Government.

As we all know, Chinese medicine has been an integral part of the Chinese culture, heritage and healthcare for over 4 000 years. With remarkable efficacy, striking national characteristics, unique diagnostic methods, systematic theoretical system and abundant historical literature materials, Chinese medicine also stands as an indispensable part of the medical sciences of the world.

There are a great variety of pharmaceutical materials used in Chinese medicine, most of which are herbaceous or ligneous in nature. Like I mentioned before, the Chinese Government is fully aware of the importance of preserving and conserving endangered wild plants and animals. We strictly prohibit the medical use and trade in rhinoceros horn, tiger-bone and many other rare and endangered animals and severely punish the illegal hunting of rare wild animals. We not only carry out environmental publicity and education to enhance the whole nation's awareness of conservation issues, but also encourage Chinese medicine practitioners to use alternative products wherever possible. Moreover, most of the medicinal plants and herbs formerly collected from the wild, are now under cultivation.

Chinese medicine is now playing a more influential role in the medical field of Australia and is increasingly moving into the mainstream. It is encouraging to see that Chinese medicine is gradually being recognised and acknowledged as a legitimate and effective means of prevention, treatment and cure of illness here in Australia. I have no doubt that Australian Chinese medicine practitioners are fully aware of their responsibilities and obligation toward endangered species and will strictly observe all the relevant environment protection laws, regulations and measures.

Chinese medicine practitioners in Australia are now facing a precious historical opportunity as well as a great challenge. To find a sensible balance between the preservation and conservation of endangered wild plants and animals and the practice of Chinese medicine is critical to the further development of the Chinese medicine industry in Australia.

I am confident that such a balance will soon be found and I am sure that Chinese medicine practitioners throughout the world will make their unique contribution not only to the flourishing practice of Chinese medicine, but also the protection of endangered species under threat.

Today's symposium is another significant step towards the above objectives. It will certainly help Chinese medicine practitioners to be more aware of the conservation issues when dealing with endangered species and to cease the use of products containing or claiming to contain endangered wildlife in the medicine.

Finally, I would like to express my appreciation once again to the symposium organisers for their wonderful efforts and wish the symposium a huge success.

Opening Address

Bruce Billson MP
Federal Member for Dunkley

Introduction

I want to begin by passing on to you all the very best wishes of my colleague, the Minister for the Environment and Heritage, Senator Robert Hill.

We in the Commonwealth Government are very pleased to have been involved in organising this Symposium and, on behalf of Senator Hill, I want to thank the two other organisations involved in putting this event together: TRAFFIC Oceania and the Royal Melbourne Institute of Technology (RMIT). In particular, I want to acknowledge Professor David Story, Dean of Faculty at RMIT and Mr Haisheng Zhao, Cultural Consul in the People's Republic of China Consulate in Melbourne.

The issue we're addressing today is one of a great many which confronts our society as we seek to translate "sustainable development" from concept to reality.

It is also one of many challenges which involves some re-alignment of practices which are long established in tradition and culture.

A number of our indigenous communities, for example, have in recent times revised their traditional hunting practices in order to help prevent the extinction of various species - species which I should add are largely under threat through no fault of aboriginal people.

Increasingly, more and more Australian farmers have also begun to move away from the techniques, which their forbears imported from Europe. They're now realising that sustainability on the land requires agricultural techniques much more in tune with the Australian environment.

In places where fishing has been a family tradition for generations, we're seeing dramatic changes. Recognising the need to preserve the long-term viability of fish stocks, boat-owners themselves, are in many cases agreeing to catch limits, turning to aquaculture, or even leaving the industry altogether.

So sustainable development is leading a great many people, both in Australia and around the world, to reassess practices established in tradition and culture. And in the vast majority of cases, sustainability doesn't mean we have to abandon tradition - it does mean adaptation to ensure it can survive.

In the case of traditional medicine, there's no reason why it shouldn't continue to grow and prosper. But, and this brings us to our purpose in being here today, traditional medicine must adapt to the urgent plight of endangered species that have been and, we fear, continue to be used in traditional medicine.

Growth of Traditional Medicine in Australia

This task is made all the more urgent and all the more difficult by the growth of traditional medicine, here and around the world.

From South Africa to India to China to the bush medicine of indigenous Australians, in many parts of the world, there is of course a very long history of using plants and animals in traditional medicine.

Today, demand for traditional medicine is rising dramatically as the population of communities, which historically rely on traditional medicine, has steadily grown; and as more people in western industrialised countries like Australia have begun incorporation alternative medicines into their lives.

The World Wide Fund for Nature has reported that the World Health Organisation estimates that up to 80 % of the world's population relies upon medicinal plants and animals for their primary health care needs (WWF: 1998). It also reports that the herbal medicine business in the European Union is worth some US\$4 billion per year (WWF Factsheet on Medicinal Plants).

In Australia, alternative health is now a billion dollar a year industry - a sector which some 57% of Australian have drawn upon in the past 12 months. And traditional medicine is a crucial part of this growing sector.

In 1996, it was estimated that there were at least 4,500 practitioners of traditional medicine in NSW, Victoria and Queensland, and 2.8 million traditional medicine consultations each year.

Traditional Chinese medicine has become especially popular in Australia, as in many other parts of the world. It's also estimated that imports of Chinese herbal medicine have increased by 100% annually since 1993.

There is no question that it is now part of the mainstream in Australian society, as well as being an integral part of the cultural and physical well being of a great many Asian-Australian communities.

Links to Endangered Species

However, while the growth in traditional medicine is undeniable, as everyone here knows, two more things are undeniable; that the list of flora and fauna threatened with extinction is growing ever longer and that some aspects of traditional medicine are partly to blame for the increased threat of extinction.

Traditional medicine is not the only thing which drives poachers to kill endangered animals and illegally harvest endangered plant species but, in many cases, we believe it is a significant contributing factor.

And despite the development of alternatives to the use of endangered species in traditional medicines, many of those medicines being sold here and around the world still contain, or claim to contain, endangered species.

In the three years 1996-1998, there were 3,000 seizures of traditional medicine products in Australia, which contained or claimed to be derived from endangered species. While the vast majority were plant species such as ginseng, cactus, orchids and cycads, over 500 were animal species, including some of the most highly endangered or threatened animals such as tiger, bear, rhino, leopard and turtle.

In another groundbreaking report on the global trade in mass-produced Chinese medicine, TRAFFIC found that, of the 600 medicines documented, some 430 listed endangered, threatened or protected wildlife as ingredients (TRAFFIC USA).

It's not hard to extrapolate on the growth figures I mentioned previously to appreciate the very grave threat unfettered expansion of traditional medicine poses to the survival rate of some of the world's most endangered species.

Industry growth and species survival are now well and truly on collision course.

No one wants to see these species wiped out. It's not in the interests of traditional medicine practitioners, their patients, or the wider community, not to mention the species themselves.

But species will be lost unless we can reduce demand for products sourced from endangered species.

That in turn depends on international cooperation to ensure that all countries impose regulatory regimes consistent with conservation goals.

It depends on worldwide investment in education to minimise the demand for these products, and it depends on more research into alternatives to traditional medicine products sourced from endangered species.

The Convention on the International Trade in Endangered Species (CITES) provides the framework required at the global level. Since its beginning in the mid 1970s, Australia has been an active supporter of and participant in this international effort.

Through CITES, we have made some valuable progress. For example, the decline in the population of elephants was reversed as a result of the international ban on trade in ivory implemented by CITES in 1989. Now, the population of elephants in the wild is growing steadily again.

However, we have not succeeded completely with other species. Tragically, we may be losing the battle with respect to various species of tiger. Already, three sub-species are extinct and the remaining five are under serious threat of extinction. The rhino populations are also under very serious threat with numbers falling from 70,000 in the 1960s to less than 12,000 today.

Happily, at least in Australia, our efforts to protect endangered species has the broad support of the traditional medicine community. I have little doubt that this reflects very strong feelings on similar lines in the wider community.

We have an obligation – all of us – to try to avoid the futile road towards extinction.

The Way Forward

To protect endangered species from traditional medicine manufacturers still wishing to use these species, the Commonwealth Government is undertaking two initiatives.

First, we're tightening the regulations to strengthen the *Wildlife Protection (Regulation of Exports and Imports) Act 1982*, introduced by the Fraser Coalition Government.

Specifically, we're amending the law so that representing a traditional medicine product or service as being sourced from an endangered species will be a prosecutable offence, irrespective of whether endangered species are in fact being used. That is, if the label or description says it contains an endangered species, that will be an offence.

Similar legislation is being implemented in other countries which are parties to CITES. It acknowledges that merely representing a product as being sourced from an endangered species adds to demand for poaching activity.

The amendment will also encourage the used of alternative ingredients.

The second element of the government's approach will be a public education campaign to complement the new legislation. International treaties and regulation alone will not save endangered species or ensure the long-term supply of traditional medicine supplies. Education is the key.

We're currently preparing a comprehensive booklet which outlines the CITES framework and the domestic legislation, and this will be distributed widely amongst the traditional medicine community.

There are many alternatives to medicines containing endangered species, and these alternatives have been recognised by many in the traditional medicine community. Throughout the campaign, we'll be consulting the traditional medicine community, working together to achieve our goals of reducing demand for endangered species and using alternatives having similar properties claimed for endangered species.

Conferences like this are obviously very helpful in getting the information out, and it is to be hoped that today's Symposium will have a beneficial ripple effect promoting the need to protect endangered species throughout the traditional medicine sector.

In addition to existing practitioners of traditional medicine, we need to look to the future and to those young people starting their careers in this growing industry. That means involving our educational institutions in the process.

I know this very institution, RMIT, has led the way with ground-breaking courses which cover both traditional and modern western medicine, something which has received widespread recognition both here and abroad.

We also need to encourage the wider community to work with the traditional medicine sector to find and provide alternatives to endangered species. In some cases, that means cultivating alternative sources of the same species; in others, it means finding completely different species which are not under threat, but can provide the same health benefits. In all cases, it means reducing the threat to endangered species. To take the pressure off wild stocks, alternatives need to be available in large enough quantities and at low enough prices.

In China, for example, the government has encouraged the cultivation of medicinal plants - with 330,000 hectares already under production. Similar steps are being taken in South Africa to take the pressure off local populations in the wild (WWF Factsheet on Medicinal Plants 1995).

With sensible policy and some original thinking, you can protect endangered species and boost the traditional medicine business simultaneously. Australian enterprise needs to look for opportunities, invest and develop appropriate marketing strategies.

Conclusion

In closing, sustainable development requires us all to be open to change. Where there is a real threat to the survival of species, we *must* change.

Just as many communities around the world are embracing the philosophy and practice of recycling, so too is awareness being raised about the environmental consequences of consumer's choices we make in other parts of our lives. That includes health services and products.

But the community needs to be informed if people are going to make the right choices. The awareness-raising and educational task is a joint one, involving Government, business, community groups and educational institutions.

The traditional and alternative medicine organisations represented here today can play a significant role in promoting and instilling wildlife conservation attitudes among their membership. While the government can assist through better regulation and support for educational programs, traditional medical practitioners have perhaps the most vital role to play.

People trust their doctors, and, in the case of traditional medicine, they will look to the providers of traditional medical services and products for guidance on the environmental consequences of their purchases and reassurance about the effectiveness of substitutes for products traditionally sourced from endangered species.

We in the Commonwealth Government look forward to working with you to ensure that the traditional medicine industry and the future for endangered species populations in the wild are both long and prosperous.

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The Wildlife Protection Act and Traditional Medicines

Dr David Kay
Assistant Secretary
Wildlife Australia
Environment Australia

The Federal Government has responsibility for the control of the import and export of wildlife and wildlife products. The *Wildlife Protection (Regulation of Exports and Imports) Act 1982*, which is administered by Environment Australia, controls the export of Australian wildlife and wildlife products, the import of most live animals and plants, and the import and export of all wildlife which is recognised internationally as endangered or threatened. The Act also provides the legislative basis for meeting Australia's responsibilities under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The Wildlife Protection Act is one of a number of laws, including health, quarantine and customs legislation, which apply to the import of traditional medicines.

CITES and the Wildlife Protection Act

The over-exploitation for trade of many wildlife species led to CITES being drawn up in 1973. CITES now has 145 parties, including Australia, which has been a party since 1976. The objective of CITES is to prevent international trade threatening species with extinction.

Each participating country is required to implement CITES by controlling the trade in species listed in the Appendices to the Convention. Each Appendix affords the listed species a certain level of protection, for example, Appendix 1, is the strictest level; Appendix 2 is less so. The closer to extinction a species is, the higher the level of protection afforded; for example, as tigers are close to extinction, their trade is strictly controlled.

CITES member countries meet approximately every two years to consider relevant issues and to amend the Appendices as necessary. These meetings are known as the Conference of the Parties. Any member country can nominate a species for listing; the nominated species does not have to be native to the nominating country(s). The Conference decides which Appendix a species should be listed on, and may refer a matter to one of its committees (Animals and Plants) for advice.

In Australia, CITES controls are put into effect through the *Wildlife Protection (Regulation of Exports and Imports) Act 1982*. The Act is administered by Environment Australia and is enforced at Australia's border by the Australian Customs Service.

The Wildlife Protection Act controls both the export and import of CITES listed species (CITES Appendices are included in the Schedules to the Act) and the export of native Australian species.

Control of trade in wildlife subject to the Act is typically in the form of permits to export or import wildlife and wildlife products. Permits must be obtained from the country of export AND Environment Australia BEFORE entering Australia. Without the appropriate permits the product/s will be confiscated by Customs and it may not be possible to have them returned.

Controls apply to anyone wishing to import or export wildlife listed in the Schedules, including:

- museums, zoos, scientific institutions, commercial organisations, tourists, the general public; and
- anyone importing traditional medicines containing or represented to contain an endangered species.
- Other government controls may also apply to the import and export of traditional medicine including:
 - quarantine – Australian Quarantine and Inspection Service
 - health – Therapeutic Goods Administration
 - state controls.

The Wildlife Protection Act and Traditional Medicines

In the three years from 1996 to 1998 over 3 000 traditional medicine items were seized by Customs on entering Australia. Of these, over 500 claimed to contain CITES-listed animal species, including some of the most highly endangered - tigers, bears, rhinoceros, leopard, cobra, turtle/tortoise. Many contained endangered plant species including ginseng, cactus, orchid and cycad.

The continued and uncontrolled use of endangered species in products such as traditional medicine has been the subject of particular concern among the signatory nations to CITES including those countries that have practised in traditional medicine for thousands of years, such as China and Japan.

CITES member countries have acted on this concern in recent years by agreeing unanimously to a number of resolutions urging countries to strengthen controls on products containing endangered species. At the most recent conference of CITES held in 1997, it was agreed that member countries should ensure that their national legislation effectively controls trade in:

- any products claiming to contain tiger specimens;
- all parts and derivatives of species used for healing purposes and trade in medicinal products containing or claiming to contain them.

Countries also agreed that:

- the term 'readily recognisable part or derivative' used in the Convention be interpreted to mean to include any specimen which appears from an accompanying document, the packaging or a mark or label to be a part or derivative of an animal or plant; and
- governments should work with traditional medicine communities and industries in developing education and awareness towards the reduction and eventual elimination of illegal use of endangered species.

Why is the Amendment to the Wildlife Protection Act necessary?

The Wildlife Protection Act prohibits the export and import and, in some cases, the possession of products containing an endangered species, unless they are accompanied by an export AND import permit.

However, in its current form, the legislation does not enable the Government to successfully identify the illegal import into Australia of many products that contain endangered species because forensic science is not currently able to provide the required level of certainty. Thus, despite the prohibition, imported traditional medicines containing endangered species remain available.

The proposed amendment will ensure that all products represented to contain an endangered species, such as tiger and rhino, are treated as if they do, in fact, contain the ingredient. It is not the intention of the amendment to prohibit the general use of images of wildlife as a marketing tool; for example, where a product obviously does not contain material from endangered species such as:

- Esso's tiger in your tank, or
- the tiger as a mascot for a sporting team (football, basketball etc).

The amendment is being debated in Parliament; it has been passed by the Senate and is currently in the House of Representatives. The amendment is supported within Australia by a wide range of environmental and conservation groups and leaders of the traditional medicine community as shown by their support at the announcement of the amendment by the Minister in Sydney last year.

Other countries, including European Union nations, the United Kingdom and the USA, have already introduced similar measures.

In line with the above CITES resolutions, the Government is committed to working closely with the traditional medicine community to successfully implement this amendment, to highlight the plight of endangered species, and to promote the use of alternative substances in traditional medicines.

When the amendment comes into force, Environment Australia will be producing and distributing a booklet outlining the new requirements and how to meet them. Some background information on the amendment and current traditional medicine import requirements has been made available in the information pack provided today and Environment Australia staff here today are more than happy to provide further assistance.

Conclusion

The Government is committed to wildlife conservation internationally, as well as within Australia. The best way to achieve this laudable goal is for everyone - the traditional medicine industry and community and government to work together. Essentially, we are all seeking a win/win outcome for the traditional medicine industry to grow and prosper, and to protect and conserve endangered wildlife and give it a chance to prosper too.

Trade in Traditional Medicine Using Endangered Species – an International Context

Mr Samuel K H Lee
TRAFFIC East Asia

Introduction

This essay aims to share the author's experience and assessment of the issues surrounding international trade in endangered species of wild plants and animals as medicinal ingredients. In an earlier presentation given in the Sydney Symposium held in August 1997, the author briefly outlined why traditional medicine is of concern to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and why CITES is of concern to traditional medicine communities. The presentation also explained the importance of dialogue between CITES or the conservation community and the traditional medicine communities.

The current presentation focuses on how this dialogue should best be conducted, why it is in the best interests of traditional Chinese medicine (TCM) communities to address the issue of medicinal wildlife conservation, and why a conversational approach is better than a confrontational approach. In addition, the presentation also touches upon the gradual change in focus of international wildlife conservation, with an increasing concern for conserving medicinal plants.

When TCM Meets Wildlife Conservation

There has been increasing concern over the use of endangered species in all forms of traditional medicine. Simultaneously, no one can deny that there is increasing dialogue between the conservation communities and traditional medicine communities globally. Conferences and workshops of different scales have been taking place around the world. Table 1 provides a chronicle of those events addressing medicinal wildlife conservation and TCM.

One particularly significant event was the *Saving the Tiger, For our Children, For the Future: a Chinese-American and Wildlife Conservation Working Conference*, which took place in San Francisco in June, 1998. This event was initiated largely by the Chinese-American community and was supported by WWF and TRAFFIC. The event was a part of a larger campaign called *Save the Tiger in the Year of Tiger*. It was comprised of various activities including artwork, an essay competition, rally and a petition.

Another landmark was the *Management and Culture of Marine Species Used in Traditional Medicine*, which took place in Cebu, the Philippines, in July 1998. The approach adopted by the organiser, Project Seahorse, to address the issues of trade in marine medicinal species, was appropriately conversational. This involved constructive input from TCM specialists, traders, marine biologists and wildlife trade researchers from China, India, Singapore, South Korea, USA, UK and Australia. People from different areas of expertise were brought together in the conference to discuss their common problems and work out options for potential solutions.

In August of 1999, there will be a top-level international conference on traditional Chinese medicine and wildlife conservation in Beijing. The event is being organised by the State Administration of TCM in Beijing, the American College of TCM, WWF, and TRAFFIC.

Table 1: Chronicle of events related to traditional Chinese medicine and wildlife conservation

Date	Event	Location
July 1995	Seminar on TCM and Wildlife Conservation	Beijing
September	Seminar on TCM and Wildlife Conservation	Hong Kong
October 1995	The First International Symposium on Traditional Chinese Medicine and Wildlife Conservation	Hong Kong
August 1997	Healthy People, Healthy Wildlife - First Australian Symposium on Traditional Medicines and Wildlife Conservation	Sydney
December 1997	The First International Symposium on Endangered Species Used in Traditional East Asian Medicine - Substitutes for Tiger Bone and Musk	Hong Kong
June 1998	Saving the Tiger, For our Children, For the Future: a Chinese-American and Wildlife Conservation Working Conference	San Francisco
July 1998	The Management and Culture of Marine Species Used in Traditional Medicine	Cebu
November 1998	Workshop on the Conservation of Medicinal Plants	Seoul
March 1999	Healthy People, Healthy Wildlife - Second Australian Symposium on Traditional Medicines and Wildlife Conservation	Melbourne
August 1999	Healthy People, Healthy Planet - International Conference on Traditional Chinese Medicine and Endangered Wildlife Conservation	Beijing

“Conversational” versus Confrontational

Whilst the consumption of endangered wildlife can be reduced to a certain extent by laws and trade controls, voluntary adherence to these regulations by TCM communities is far more effective and constructive than law enforcement alone.

Also, a misinformed media when covering the use of wildlife in TCM has often portrayed an inappropriate image. This has been offensive to some members of the TCM communities, jeopardising communications between conservationists and TCM communities. In order to enlist support from TCM communities in reducing the consumption of endangered wildlife, ongoing respectful communication and a conversational approach, is a prerequisite.

When creating and implementing a co-operative approach to the sustainable use of wildlife with TCM communities, the following points may be worthy of note. Many of the examples cited are based on the author’s experience in working with the TCM community in Hong Kong since joining TRAFFIC East Asia in 1996.

Understanding Traditional Medicine

Traditional medicinal systems play a key role in health care around the world. According to the World Health Organisation, traditional medicine provides health care to more than 80 % of the world’s population. However, traditional medicinal systems are considered by some people to be inferior to western medicine and modern medical science. They are even viewed by some

sceptics as superstition administered by witch doctors. At the same time, major traditional medicinal systems around the world are gaining formal recognition and respect.

In the context of Hong Kong, the very core of traditional Chinese medicine is the concept of yin-yang, which is often misinterpreted by the western public and media. Toning up the yang to the balanced level” has been mistranslated into “enhancing sexual prowess or for aphrodisiac purposes”. The recent media coverage linking the impotence drug Viagra with the use of rhino horn in TCM is a typical example of this misunderstanding (“Why rhinos recommend Viagra” 1998:80). Box 1 provides some media coverage of the issue.

Some members of the TCM community feel humiliated by the myth that rhino horn, or sometimes virtually anything used as traditional medicine, is used as an aphrodisiac rather than a medicine to treat serious, sometimes life-threatening, illness. TCM is not only aphrodisiacs; it is a legitimate form of health care.

Box 1: Portrayal of TCM in selected media.

“...rhinoceros horns prized here [South Korea] as an aphrodisiac, ...” *Hong Kong Standard* 17 March 1994
(taken from a wired news originally from *Agence France Press*)

“Tiger and rhinoceros parts are ground up and widely used in Asia as medicinal potions and aphrodisiacs.”
International Herald Tribune 8 April 1994

“Chinese consumers are willing to pay vast sums for wild tiger products [tiger-bone plasters] in the belief that such medicine enhance their sexual prowess”*Sunday Morning Post* 10 April 1994

“Tiger parts, including bones, claws, penises and blood, are used in a variety of exotic products, including soup, wine and balms. Wild tiger products are believed by some Chinese consumers to improve physical and sexual prowess” *Eastern Express* 23 April 1994

An analogy to the labelling of some mineral water may help illustrate the point. Under the requirements of some countries, nutritional *facts* must be printed on the labels of all food products. However, if you look at the nutritional *facts* about mineral water, you probably would find that mineral water has virtually no nutritional value: no carbohydrates, no proteins, no fat, and only some trace minerals. This is simply a wrong application of parameters to look at the subject. In a similar way, it seems to be inappropriate to view TCM with a set of western parameters.

A proper understanding of and respect for TCM systems is essential for the conservation of medicinally used wildlife.

Communication Channels

When TCM communities hear of wildlife trade controls and restrictions imposed by the government, they can feel victimised - and rightly so. Why should they be the last to know about the new rules and regulations, which will affect their livelihoods and ability to offer health care to their patients and customers?

While government notifications are important and necessary, it is important to begin communicating wildlife conservation issues to TCM communities long before these issues lead to increased controls and restrictions. This allows TCM communities to become involved in the process, to offer helpful input, and to plan in advance for restrictions on supply and use. If they are informed early enough, the need for increased controls might even be eliminated through voluntary cooperation and compliance.

In addition, the messages used to communicate conservation needs should be crafted carefully and thoroughly as new trade “controls” can be understood by the defensive or ill-informed to be yet another trade “ban” imposed for arbitrary and frivolous reasons. This perception stops any hope of voluntary co-operation.

Language

In Hong Kong, there are more than 30 TCM organisations and many more exist throughout East Asia. It is impossible for an individual to meet representatives of every single TCM organisation in person. TRAFFIC East Asia relies heavily its newsletters on TCM and wildlife conservation, which are published in Chinese and Korean. Four issues of the Korean newsletter have been published, while the third issue of the Chinese newsletter will come out shortly.

Much of the discussion, decision-making, and media coverage on the issue of the use of wildlife in TCM have been in English only. Therefore, many members of the TCM community were left out of the process and were caught by surprise when bans or stricter regulations took effect. For these reasons, TCM communities around the world have enthusiastically welcomed the TRAFFIC East Asia newsletter. It enables readers to understand more about the wildlife conservation issues that will impact their lives, and to understand how their actions can positively or negatively impact upon wildlife conservation.

Cultural Differences

To many Asian cultures, and indeed to cultures around the world, plants and animals are seen as objects to serve human needs. Prohibiting the utilisation of natural resources simply does not make sense to many people. Therefore, the concept of wildlife conservation can be alien to them. If the need for conservation is to be accepted by people who make their livelihoods from wildlife or use wildlife for necessities such as food and medicine, then care should be taken to avoid what may be seen as ideological or culturally imperialistic approaches. It is important to accept and respect differing views of the value of wildlife, while, at the same time, explaining the necessity of conservation measures.

The Way Ahead: From Animal to Plant

While some large, charismatic, terrestrial animals, such as the tiger, rhinoceros and bear, have long had the world’s conservation attention, there is increasing concern over the conservation of medicinal plants. There are many “tigers” in the plant kingdom, such as some orchid species, and the TRAFFIC Network is looking into this issue. TRAFFIC East Asia, for example, is currently looking into the trade in medicinal plants in countries in the East Asian region. As most TCM specialists know, this is a far more critical issue for human health care needs since plants make up more than 80 % of TCM ingredients.

TCM in an Australian Context

It is important to recognise that Australia is a multi-cultural society. It is a nation where we have the right to participate in our traditional cultural rituals and practices. However, in association with this freedom there is an inherent responsibility that we observe and comply with the laws of this nation.

In addition, as the regulatory framework for TCM in Australia is currently being developed, it would be in the best interests of the TCM community to enhance and promote a positive and professional image to the broader Australian public. It must be reinforced that TCM practitioners play an important role in the social well being of this society and the environment. For practitioners, the conservation of wildlife means the conservation of their medicinal resources.

Conclusion

There is an urgent need for members of both the wildlife conservation community and TCM communities to talk to each other. Success in combining the interests of TCM and wildlife conservation requires a great deal of common sense. Showing respect and communicating in a language understood by all sides are not profound concepts. However, they demand time, money and good will - precious resources that conservationists and TCM specialists never thought they would have to spend on one another. But investing the time, the money, and the good will is the only way forward for TCM and the world's wildlife.

References

"Why Rhinos Recommend Viagra". 1998. *The Economist*. 30 May. 80.

Please note: The TRAFFIC website is at www.traffic.org

Import Controls on Traditional Medicine under the *Therapeutic Goods Act 1989* and Associated Labeling Issues

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The Therapeutic Goods Act

Amendments have been made to the *Therapeutic Goods Act 1989* to implement reforms to the regulation of complementary medicines. These reforms are of direct relevance to traditional medicines, which are regulated as complementary medicines within the therapeutic goods regulatory system.

The use of complementary medicines in Australia and throughout the world is on the increase. It is currently estimated that more than 60% of Australians use complementary medicines at least once per year, and current trends show that this figure will probably rise. These complementary medicines include vitamins, minerals, herbal, naturopathic and/or homoeopathic preparations.

In view of increasing use and acceptance of complementary medicines and following discussions with industry and other key stakeholders, the Government determined that it was a matter of priority to review the existing regulations. Key considerations for the review included:

- balancing the need to improve market access to products while maintaining consumers' confidence that high standards of quality and safety are applied;
- reviewing advertising regulations to ensure they reflect current and future needs and community expectations;
- evidence to support therapeutic claims;
- more systematic and targeted post-market vigilance; and
- securing ongoing involvement of the complementary healthcare industry in providing expert advice to Government on matters of relevance to continuing development of their industry.

The review has resulted in the amendments to legislation mentioned earlier in this paper, and in a range of administrative and educational reforms. Implementation of these reforms will provide a 'one stop regulatory shop' for the complementary medicines industry, that is, the Office of Complementary Medicines within the Therapeutic Goods Administration (TGA). Integral to the functioning of the Office of Complementary Medicines will be the Complementary Medicines Evaluation Committee (CMEC). This statutory committee with membership focusing on scientific and regulatory expertise and clinical experience will provide high level advice to the Office of Complementary Medicines with regard to the evaluation of substances and products for use in Australia and for the substantiation of claims.

Another cornerstone of the reform package was the establishment of an industry/government Complementary Healthcare Consultative Forum (CHCF). The purpose of this forum is to promote government and industry dialogue on complementary healthcare policy, trade, research and related issues.

The overall aim of the *Therapeutic Goods Act 1989* (the Act) is to ensure the quality, safety and efficacy of therapeutic goods available to the Australian public so that consumers can be confident in the medicines available to them. It is also important that medicines are made available in a timely manner.

There are several pieces of legislation that affect the regulation of medicines, including traditional medicines. The Therapeutic Goods Administration regulates medicines, but if the medicine is of human, plant or animal origin for import the Australian Quarantine Inspection Service (AQIS) also has jurisdiction. If the medicine includes protected species, environmental protection legislation plays a part and if the medicine comes from overseas, then Customs legislation comes into effect. Additionally, the Therapeutic Goods Administration recognises and supports Australia as a signatory to the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES).

When it comes to enforcing laws for the importation and exportation of medicines, it is Customs which has jurisdiction through the *Customs (Prohibited Imports) Regulations* and the *Customs (Prohibited Exports) Regulations*. The TGA administers two schedules of the *Customs (Prohibited Imports) Regulations*:

Schedule 8 (*goods the importation of which is prohibited if permission is not granted under regulation 5H*), and

- Schedule 4 (*Drugs*) (Regulation 5).

The TGA advises Customs as to the items which should be listed in the Schedules and issues import and export permits and licences, and Customs enforces these Schedules.

When it comes to the *Therapeutic Goods Act 1989* the following sections relate specifically to the importation of therapeutic goods:

- Section 6AA of the Act deals with “Importation of restricted goods” where restricted goods are medicines intended for use in women as abortifacients.
- Part 2 of the Act deals with compositional standards. This part of the Act states that no person may import or supply therapeutic goods in Australia unless they conform with the standard applicable to the goods, and it deals with the criminal offences concerned with contravention of the requirements of a standard.
- Part 3 of the Act deals with the Australian Register of Therapeutic Goods (ARTG). Section 20 of this part deals with offences relating to importation, exportation, manufacture and supply of therapeutic goods. It is an offence, under Section 20, to import, export, manufacture or supply therapeutic goods for human use unless those goods are first included in the ARTG, or are exempt goods. Before a good can be included in the ARTG it must meet appropriate safety, efficacy and quality requirements.

The definition of “therapeutic goods” is broad and includes goods that are made to appear to be for therapeutic use, unless the goods are foods as described in the *Therapeutic Goods Act 1989*.

Some goods are exempted from Registration or Listing in the ARTG under Section 18 of the Act and Regulation 12 (1) and 12 (1a). These goods are listed in Schedules 5 and 5a to the regulations, respectively. It is possible that this exemption could apply to certain traditional medicines.

For example, under provisions of Schedule 5 of the Act “personal imports” and also starting materials used in the manufacture of therapeutic goods, may be exempt from the requirement to be included in the ARTG before they may be lawfully imported, manufactured, supplied or exported.

Subsections 19 (5-9) of the Act and Regulation 12B provide a way for certain medical practitioners to supply certain therapeutic goods to specified recipients under the authorised user approval (AUA) schemes. Goods used solely for experimental purposes in humans, that is for clinical trials, need not be included in the ARTG if special approval is granted for these for import, export or supply in Australia, under Subsection 19 (1)(b) of the Act.

The Special Access Scheme (SAS) allows individual patients to obtain access to medicines not approved for general supply via a medical practitioner under particular circumstances. Arrangements under the SAS vary according to the health status of the individual patient.

- Category A – terminally ill patients and seriously ill patients with life threatening conditions may obtain access to essentially any medicine apart from medicines of abuse.
- Category B – patients suffering from a life threatening condition, even if they are not critically ill may obtain access to Category A medicines which have an established history of safe use or have been the subject of at least Phase 1 trials in humans that have been satisfactorily completed. TGA approval is required prior to access being obtained.
- Category C – patients suffering with a serious, but not life threatening, illness may obtain access to Category A medicines for which efficacy as well as safety has been addressed and prior TGA approval has been granted.

This paper has set out a summary of major pieces of legislation which apply to medicines and which may therefore apply to traditional medicines and also has described in some detail the provisions within the *Therapeutic Goods Act 1989* which may relate specifically to traditional medicines if they are imported. The *Therapeutic Goods Act 1989* includes provisions that allow the TGA to declare medicines to be Prohibited Imports under the Customs Act where the medicines are imported into Australia without first being included in the ARTG when they are required to be. This allows the powers of Customs to come into play, which can include searching, seizing, destroying or deporting of therapeutic goods.

Occupational Regulation of Chinese Medicine in Victoria

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Overview

This paper presents work by the Victorian Department of Human Services to review the practice of traditional Chinese medicine (TCM) in Australia and establishes a system of occupational regulation of the TCM profession. This paper presents:

- background to the review process and the need for occupational regulation of practitioners and dispensers of Chinese herbal medicine;
- recommendations of the research report *Towards a Safer Choice*;
- the key features of the model of Victorian health practitioner registration legislation;
- an overview of the proposed Chinese Medicine Registration Bill scheduled to be considered by the Victorian Parliament in its Autumn or Spring sessions 1999; and
- the ways in which a system of statutory registration of Chinese medicine practitioners and Chinese herbal dispensers might assist in wildlife conservation and reducing the use of material from endangered species in Chinese herbal medicines in Australia.

Background

Traditional Chinese medicine (TCM) has a history of over 2,000 years in China. Its use is now expanding rapidly in most Westernised countries. In August 1995, the Victorian Department of Human Services started a review of the practice of TCM. The purpose of the review was to assess the need, if any, for statutory registration of TCM practitioners and regulation of Chinese herbal medicines.

Health practitioner registration is a power which rests with state and territory governments. Pressure to examine the practice of TCM in Victoria arose from:

- recognition of the significant increase in demand for, and use of traditional Chinese medicine by Victorians of all ethnic origins;
- consumer complaints to the Victorian Department of Human Services concerning use of herbal preparations, some of which contain endangered species or have been adulterated with potent western medicines; and
- representations from the TCM profession concerning the need for registration to adequately protect the public.

The first stage of the review was completed with the publication, in November 1996, of the research report *Towards a Safer Choice: The Practice of Traditional Chinese Medicine in Australia*. The purpose of the research was to investigate the risks and benefits associated with

the practice of TCM, the nature of the TCM workforce, and the need, if any, for legislative regulation of TCM practice.

The second stage during 1997-98 involved release of a discussion paper and conduct of an extensive national public consultation on options for regulation of the profession of Chinese medicine. The second stage was completed with the publication of the Victorian Ministerial Advisory Committee's report *Traditional Chinese Medicine: Report on Options for Regulation of Practitioners*. All Australian Health Ministers agreed at their July 1998 conference for Victoria to take the lead in developing legislation to provide for the regulation of the Chinese medicine profession.

The third stage has commenced with implementation of the recommendations of the Ministerial Advisory Committee's report. This includes preparation of a proposed Chinese Medicine Registration Bill for consideration by the Victorian Parliament in its Autumn or Spring sessions 1999. If passed, the new Act should be in force during the year 2,000 and will:

- establish a system of registration similar to that which applies to other health practitioners in Victoria, such as medical practitioners, nurses, pharmacists etc; and
- create a mechanism for suitably qualified practitioners to prescribe herbs that have been scheduled and therefore restricted under Victoria's drugs and poisons legislation.

It is hoped that it will also provide a model for other state and territory governments to draw on in order to enact legislation to regulate Chinese medicine practitioners in their jurisdictions.

Recommendations of "Towards a Safer Choice - Stage 1":

The research report *Towards a Safer Choice: The Practice of Traditional Chinese Medicine in Australia* investigated and reported on seven main areas:

1. the regulatory frameworks in China, other countries, and all states of Australia;
2. the profile of the TCM workforce in Victoria, NSW and Queensland including the organisations that represent practitioners;
3. the profile of patients using TCM;
4. the risks and benefits of TCM;
5. the nature of the links and referral networks between practitioners of TCM and other health care practitioners;
6. the nature of TCM education in Australia and China; and
7. the adequacy or otherwise of the current state regulatory frameworks.

The report provided the first comprehensive view of the practice of TCM in Australia. The Executive Summary which includes the key findings is available free of charge from the Victorian Department of Human Services. A copy of the full report can be purchased from University of Western Sydney - Macarthur.

The report also included a summary of issues associated with use of endangered species in Chinese herbal medicines. It stated that the Chinese materia medica includes medicines made from animal products, some from parts of endangered species. The use of rhino horn, tiger bone

and deer musk as medicinal preparations, has placed a significant strain on these species and contributed to the reduction of their numbers to critical levels (Callister and Bythewood 1995).

Appendix 14 of *Towards a Safer Choice* lists animal species used in Chinese medicine which are threatened with extinction and listed in CITES Appendix 1. They include various types of bear, elephant, leopard, monkey, musk deer, rhinoceros, seal, tiger and crocodile. Despite efforts to introduce stricter controls, use of many of these substances is culturally ingrained and considerable international effort is required to limit their usage.

The use of preparations containing endangered species in Australia has continued despite becoming a signatory to the CITES. Nearly 43,000 units of Chinese Medicine products claiming to contain bear, leopard, musk, rhinoceros and tiger were seized by the Australian government between July 1991 and March 1995 (Callister and Bythewood 1995).

Some TCM professional associations including the Australian Chinese Medicine Education and Research Council (ACMERC) have clear policies that condemn the use of endangered species of both animals and plants and promote the use of appropriate substitutes.

Viable alternatives to many endangered species used in Chinese Medicine do exist and extensive work is being done to identify the most appropriate substitutes (Bensoussan and Myers 1996).

The report referred to difficulties identified by TRAFFIC Oceania with enforcement aimed at stopping illegal imports of TCM containing endangered species and the failure to adequately control possession and sale of such items once in the country.

The report made the following recommendation:

In the formation of any legislative act providing for occupational regulation of TCM practitioners, consideration be given to the need of appropriate penalties for practitioners trading in, prescribing or providing medicines or raw products containing CITES Appendix 1 - listed endangered species.

Occupational Regulation of Health Practitioners

At present, there are no statutory registration provisions which specifically govern the practitioners of Chinese medicine, that is, there is no act of Parliament which requires Chinese medicine practitioners to be registered, similar to registration requirements for medical practitioners, nurses, physiotherapists, pharmacists, podiatrists, osteopaths, chiropractors, psychologists and dentists.

There is an established model of health practitioner registration in Victoria as there is in other states and territories. The Victorian model was first introduced with the passage of the *Nurses Act 1993* and the *Medical Practice Act 1994*. Between 1994 and 1998, five revised health practitioner registration acts have been passed in Victoria, each incorporating the model provisions with some updated provisions. The *Physiotherapists Registration Act 1998* is the

most recent health practitioner registration act passed and provides the most up to date provisions.

Powers and Functions of Health Practitioner Registration Boards

In Victoria, each regulated health profession has a registration board established under a state act of Parliament. These boards are independent of Government, and are incorporated so as to avoid personal liability for board members. Membership consists of a majority from the profession being regulated. Victorian registration boards are required to consult the Victorian Minister for Health and take notice of his views, but the Minister cannot direct the board. Boards are self-funding, and are responsible for setting their own registration fees and meeting all their own expenses, such as renting premises, hiring staff and paying legal counsel.

Under the Victorian model, the main powers of health practitioner registration boards are as follows:

- to regulate the standards of practice of the profession in the public interest;
- to register suitably qualified persons and/or persons meeting approved competency standards so that they may practice in Victoria;
- to accredit courses which provide qualifications for registration purposes;
- to establish standards for the conduct of examinations for the purposes of registration and continuing education;
- to issue guidelines about appropriate standards of practice;
- to investigate complaints about, and inquire into, the conduct of persons registered under the Act; and
- to carry out such other functions as are vested in the Board by or under its Act.

Subject to mutual recognition principles, health practitioner registration boards in general have powers to register practitioners who:

- have successfully completed a course of study accredited by the Board; or
- have a qualification that is substantially equivalent or is based on similar competencies to an accredited course; or
- have passed a prescribed examination.

Registration boards have the power to temporarily, provisionally, or conditionally register a practitioner or to grant a restricted registration. This allows additional flexibility in registration, for example with short-term registration of visiting overseas lecturers.

Key Features of the Victorian Health Practitioner Registration Model

Appendix 1 of the Victorian Ministerial Advisory Committee's *Report on Options for Regulation of Practitioners* provides further detail on the standard model of health practitioner registration, including definitions of "unprofessional conduct" and the complaints and disciplinary procedures.

The key features of Victorian model are as follows:

- the legislation makes clear that the purpose of regulation is to protect the public rather than professional interests;
- the main privilege of registration is the right to use the relevant title, rather than to define the practice of the profession and restrict this practice to registered practitioners;
- it is an offence for non-registered persons to use the relevant title or to hold themselves out as being registered;
- registration boards must be incorporated as legal entities;
- members of boards are appointed by Governor-in-Council on recommendation from the Minister for Health;
- all boards must include legally qualified and lay/community members;
- boards have a broader range of disciplinary options, including informal hearings in appropriate cases;
- a standard definition of "unprofessional conduct" is adopted;
- legislation includes standard powers of boards to deal with unprofessional conduct and false and misleading advertising;
- boards have the power to immediately suspend the registration of a practitioner if necessary, in order to protect the public;
- the board conducts hearings which are open rather than closed, with provision for closed hearings in certain circumstances;
- complainants have the right to be present at a hearing; and
- appeals from a decision of the board are directed to the Victorian Civil and Administrative Tribunal.

Key Features of the Proposed Chinese Medicine Registration Act

It is expected that the Victorian Cabinet will shortly provide approval in principle for the drafting of a new Chinese Medicine Registration Bill, to be considered by the Victorian Parliament in its Autumn sessions 1999. It is expected that this Act, if passed, will be implemented during the year 2000 and will provide a model for other state and territory governments to follow.

The key features of the proposed new Act are as follows:

- establishment of statutory Chinese Medicine Registration Board;
- the new Board is to have 7 members appointed by Governor-in-Council on recommendation from the Victorian Minister for Health;
- membership will be as follows: 4 Chinese medicine practitioners, 2 lay people and 1 lawyer;
- the Board is to have standard powers and functions as outlined above;
- the Board is to have power to keep a register of qualified practitioners;
- the Chinese Medicine Register is to have three divisions - Chinese herbal medicine, acupuncture and Chinese herbal dispensing. Practitioners must have the relevant qualifications required by the Board in each division to be eligible for registration;
- the Board is to have the power to:
 - approve courses which provide qualifications for registration purposes;
 - endorse the Register in order to recognise post graduate qualification and/or training in specialty areas such as Chinese orthopaedics and traumatology;

- endorse registration certificates of Chinese medicine practitioners and Chinese herbal dispensers in order to allow them to be authorised under the *Drugs Poisons and Controlled Substances Act* (to legally prescribe and dispense scheduled herbs);
 - investigate complaints about, and inquire into the professional conduct or fitness to practice, of persons registered under the Act and impose sanctions or conditions and limitations on practice where necessary;
 - immediately suspend the registration of a practitioner considered impaired or acting unprofessionally and a risk to public health and safety;
 - secure a warrant to enter and search premises when conducting an investigation of unprofessional conduct;
 - establish standards for the preparation, prescription, labelling, dispensing and record keeping of Chinese herbs;
 - promulgate Codes of Optimal Practice specifying competencies for each of the divisions of registration, standards of clinical practice, and other matters;
 - require evidence of satisfactory arrangements for professional indemnity insurance as a condition of ongoing registration; and
 - require that registrants provide information on any criminal convictions or settlements and judgements against them in medical negligence cases.
- it will be an offence under the Act for an unregistered person to use the titles protected under the legislation or any other title calculated to induce a belief that the person is registered.;
 - the protected titles are "Registered Chinese Medicine Practitioner", "Registered Chinese Herbal Medicine Practitioner", "Registered Chinese Herbalist", "Registered Acupuncturist", "Registered Oriental Medicine Practitioner";
 - it is expected to be an offence under the Act for a registered person to advertise their Chinese medicine services in a way which is:
 - false, misleading or deceptive;
 - offers gifts or discounts without setting out the conditions;
 - uses or refers to testimonials or purported testimonials;
 - unfavourably contrasts the services of another Chinese medicine practitioner;
 - creates an unjustifiable expectation of beneficial treatment; or encourages over servicing.

Regulation of Use of Endangered Species via Occupational Regulation

In drafting the new Victorian Chinese Medicine Registration Bill, it is important to establish how the new occupational regulation system will interact with and reinforce the Commonwealth efforts to regulate importation and possession of Chinese herbal medicines which contain endangered species. There is potential for an occupational regulation system such as that proposed in Victoria to have a significant impact to reduce the prescribing and dispensing of such Chinese herbal medicines. Below is an outline of some of the issues:

The Commonwealth Wildlife Protection Act

The Commonwealth *Wildlife Protection (Regulation of Exports and Imports) Act 1982* (Wildlife Protection Act) is the legislative basis for conservation-oriented controls on the export and import of wildlife and wildlife products. The Wildlife Protection 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 Wildlife Protection Act also 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 and also included in the Schedules to the Wildlife Protection Act.

The offence provisions of the Wildlife Protection Act of most relevance to practitioners and dispensers of Chinese herbal medicines are:

- Section 22 which makes it an offence for a person to import Scheduled specimens without the required permit or authority; and
- Section 53 which makes it an offence for a person to have in his or her possession, without reasonable excuse, any specimen which has been imported in contravention of the Act (ie without a permit).

To date it is understood that there have been no prosecutions or breaches of the Wildlife Protection Act that involve illegally imported traditional medicine products containing material from endangered species. The major impediment has been that current forensic technology is unable to prove beyond reasonable doubt that the traditional medicines contain material from endangered species as claimed on their packaging (Department of the Environment and Heritage Regulation Impact Statement for the *Wildlife Protection (Regulation of Exports and Imports) Amendment Bill 1998*).

The amendments currently before the Federal Parliament address some of the evidentiary problems that have arisen with attempts to prosecute under the above provisions:

For a prosecution to be successful under the current legislation, it must be proved beyond reasonable doubt that the product does contain an endangered species. the proposed amendments will enable a prosecution to be successful on the basis that a product is represented to contain material from an endangered species, and as such will overcome forensic problems..... by deeming that things which are deliberately represented (for example by their packaging) to be or to contain endangered species, are covered by the Wildlife Protection Act.

There are a number of ways in which the proposed Chinese Medicine Registration Act might reinforce and strengthen the enforcement of the Commonwealth legislation. They are as follows:

Unprofessional Conduct Powers

The role of a Chinese Medicine Registration Board will be to regulate professional standards of Chinese medicine practitioners and dispensers. Under the standard definition of “unprofessional conduct”, it is likely that a practitioner found guilty of the above offences under the Commonwealth’s Wildlife Protection Act would also be found guilty by the Board of unprofessional conduct.

Under the proposed Victorian legislation, the Chinese Medicine Registration Board will have powers to investigate and prosecute practitioners for unprofessional conduct. Any party, including a patient, another practitioner, or the Wildlife Protection Section may make complaints to the Registration Board.

On receipt of a complaint, the Board would be empowered to:

- make its inquiries and gather evidence (including search premises with a warrant and seize relevant material);
- conduct a hearing (formal or informal);
- make a finding as to whether unprofessional conduct had occurred; and
- apply a suitable sanction.

Sanctions available to the Board include issuing a caution or reprimand to the practitioner or dispenser, imposing a fine, attaching conditions to a practitioner or dispenser's registration, or, in serious cases, deregistration. Deregistration is likely to be used only in extreme cases since it in most instances will involve deprivation of livelihood.

Such action by the Board to investigate an individual practitioner and conduct a hearing under the proposed Chinese Medicine Registration Act could occur before, during or after prosecution by the Commonwealth under the Wildlife Protection Act, but may sensibly occur after the outcome of an action under the Commonwealth legislation is known. The decision by the Board to defer its inquiry would most likely be made in consultation with the Wildlife Protection Section of Environment Australia who are responsible for administering the Commonwealth legislation.

A finding of not guilty under the Wildlife Protection Act would not necessarily prevent a Chinese Medicine Registration Board from finding a practitioner guilty of unprofessional conduct, since the necessity to prove that the medicine had been illegally imported would not be necessary.

A Code of Optimal Practice on the Use of Medicines Containing Material from Endangered Species

It is proposed that the Chinese Medicine Registration Board will have the power under the new legislation to issue "Codes of Optimal Practice" and that these Codes would be taken into account by the Board in determining whether a particular practitioner was guilty of unprofessional conduct.

Such a Code of Conduct covering use of endangered species in Chinese herbal medicines might clearly set out the Board's expectation that registered practitioners and dispensers have a thorough knowledge of their obligations under the Wildlife Protection Act and comply with its provisions. The Code might include requirements that practitioners and dispensers understand the following:

- the Schedules attached to the Wildlife Protection Act and what they contain;
- the Chinese herbal medicines which contain substances scheduled under the Act;
- the alternatives to use of herbal medicines that contain material from endangered species;
- the offence provisions and the likely consequences of breaches of both the Wildlife Protection Act and the Chinese Medicine Registration Act (if enacted);
- labelling of Chinese herbal medicines and whether medicines supplied to them contain endangered species; or

- if unable to read the labels, then they obtain from any importers or wholesalers who supply their medicines evidence of satisfactory compliance with the Wildlife Protection Act ie, an assurance that:
 - the medicines supplied do not contain endangered species for which a permit is unavailable, or
 - that the required permits under the Wildlife Protection Act have been obtained.

It is expected that the Board would inform registered practitioners and dispensers that are possessing, prescribing and dispensing Chinese herbal medicines which contain endangered species or list them on the packaging, may constitute unprofessional conduct under the Chinese Medicine Registration Act, if proper permits have not been obtained under the Wildlife Protection Act.

However, there are likely to be limitations on the Board's powers in this area. For example:

- the Board's powers to regulate standards of practice and unprofessional conduct will only extend to registered practitioners and dispensers;
- since there is no restriction on practice of Chinese herbal medicine proposed for the Chinese Medicine Registration Bill (except where herbs are used that have been scheduled under the *Drugs Poisons and Controlled Substances Act*), there is nothing which would prohibit a practitioner or dispenser who has been deregistered from continuing to practice beyond the jurisdiction of the Board, as long as they do not breach the offence provisions relating to protection of title (that is they do not claim to the public that they are qualified and registered).
- some Chinese herbal dispensers, particularly those who supply herbal medicines via grocery stores, may choose not to register with the Chinese Medicine Registration Board unless they decide to dispense medicines that include herbs scheduled under the Victorian *Drugs Poisons and Controlled Substances Act*.

Potential for Strengthening the Board's Powers - Specific Offence Provisions

In drafting the Chinese Medicine Registration Bill, consideration will be given to whether there is a need to strengthen powers for the Board to deal with unprofessional conduct involving use of medicines containing endangered species. For example, one option might be to include a specific provision which creates an offence under the proposed Chinese Medicine Registration Act in addition to provisions governing unprofessional conduct, where registered practitioners and dispensers prescribe or dispense medicines that contain material from endangered species without the required permits.

Conclusions

Further work is being undertaken to determine the most suitable provisions for inclusion in the proposed Chinese Medicine Registration Bill. Such provisions should aim to reinforce and support Commonwealth enforcement of regulation of endangered species used in Chinese herbal medicines.

As a minimum, it is expected that a Chinese Medicine Registration Board will have powers under the proposed Victorian Chinese Medicine Registration Act to regulate the professional

conduct of practitioners and herbal dispensers, and that the Board will have the power to apply sanctions for breaches of the Commonwealth Wildlife Protection Act that are considered by the Board to constitute unprofessional conduct.

It is clear that there is considerable scope for a system of statutory registration of Chinese medicine practitioners and Chinese herbal dispensers. If adopted in all states and territories, such a system would greatly assist in wildlife conservation and reduce the use of material from endangered species in Chinese herbal medicines in Australia. Further comment is welcome on these matters and should be submitted to:

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The Responsible Use of Traditional Chinese Medicine

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The traditional Chinese materia medica includes preparations made from plant, animal and mineral products. Many of these preparations have been in use for centuries and have detailed indications for use in traditional Chinese medicine (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 (Callister and Blythwood 1995).

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 requirement 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 (see figure 1).

Figure 1: CITES Appendices

Appendix I	Includes species threatened with extinction that are, or may be, affected by trade. International commercial trade is prohibited.
Appendix II	Includes species that 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.

The use of preparations claiming to contain endangered species in Australia has continued despite Australia becoming a signatory to the CITES (see figure 2). 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 (Callister and Blythwood 1995).

TRAFFIC Oceania carried out a survey in Australia in February 1995 of 119 premises supplying 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 listed in the CITES Appendices I or II.

Figure 2: Principal animal species used in TCM which are threatened with extinction and therefore listed in CITES Appendix I (Modified from Callister and Blythwood 1995).

Common Name	Scientific Name
Sun Bear; Sloth Bear; Spectacled Bear; Asiatic Black Bear	<i>Helarctos malayanus</i> ; <i>Melursus ursinus</i> ; <i>Tremarctos ornatus</i> ; <i>Ursus thibetanus</i>

Himalayan Brown Bear	<i>Urus arctos isabellinus</i>
Brown Bear	<i>Ursus arctos</i> (populations of Bhutan, China, Mexico and Mongolia)
Leopard	<i>Panthera pardus</i>
Clouded Leopard	<i>Neofelis nebulosa</i>
Musk Deer	<i>Moschus</i> spp. (populations of Afghanistan, Bhutan, India, Myanmar, Nepal and Pakistan)
Rhinoceros	<i>Rhinocerotidae</i> spp.
Guadalupe Fur Seal; Monk Seal	<i>Arctocephalus townsendi</i> ; <i>Monachus</i> spp.
Tiger	<i>Panthera tigris</i>

TRAFFIC's investigation of over-the-counter sales of Chinese medicines identified a problem particularly amongst *prepared* medicines rather than *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.

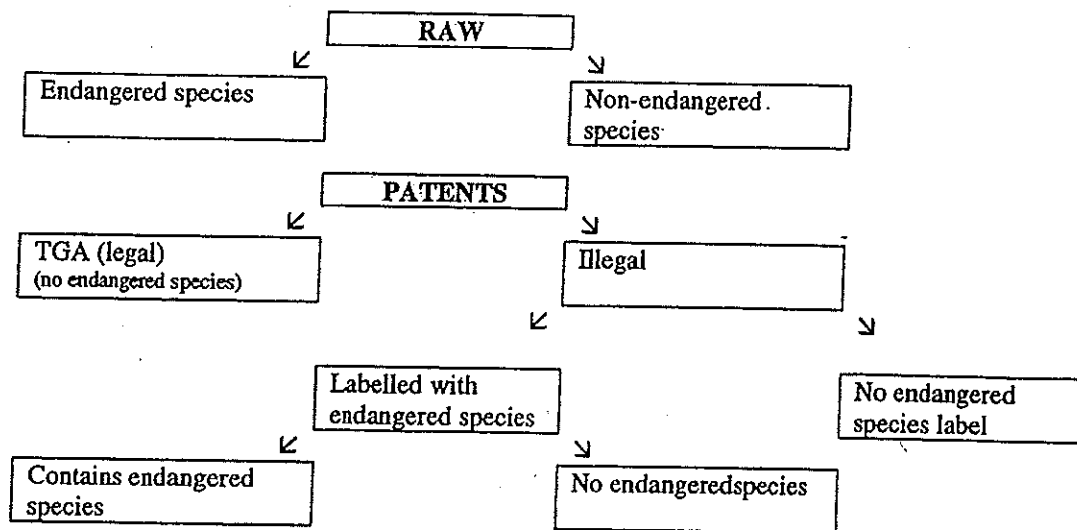
The TRAFFIC survey was unable to analyse prepared medicines to see if, in fact, the endangered species were actually contained in the medicines. Most TCM practitioners and retailers are aware that claims on labels can be rather extravagant. It is also widely known within the TCM profession that pork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

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 names of these plasters (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 those 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). Furthermore, even if only one in one hundred products labelled with endangered species actually contained them, this would probably be sufficient to drive the species to extinction (see Figure 3).

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.

Figure 3



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 issue 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 (see Box 1).

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.

Box 1: Portrayal of concerns relating to the use of endangered species.

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:

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.”

A resource that is non-sustainable is not a resource. It is a stock of short supply with a shelf life of one generation maximum. 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 and we’ll hear some of these shortly. The TCM profession and the community should absolutely reject any use of endangered animal and plant species in Chinese medicines.

How do we encourage the TCM community to act appropriately with regards to wildlife protection? No program in Chinese herbal medicine in Australia systematically deals with these issues:

- the identification of endangered species on each of the CITES appendices,
- the level of risk to the species, discussion of mechanisms to minimise that risk, the legal consequences for practitioners, and
- appropriate alternatives in various clinical situations.

These principles should be formalised in undergraduate education and in postgraduate continuing education.

In summary, whilst TCM has used in the past, endangered animal and plant, it is a practice that has not been permitted for some time in China, Japan, Hong Kong, Taiwan and 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 Australian TCM professionals would claim they no longer use endangered species and are in fact, positively opposed to it. They would support the formation of any appropriate legislation in this area. It appears some patent medicines may be labelled incorrectly as containing endangered species, when in fact the substance may be farmed or synthetically produced. The incorrect labelling of patent medicines as containing endangered species is a significant issue. It may require some time to re-educate and encourage the hand of Chinese exporters.

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The Current Situation in China on the Use of Endangered Species in Chinese Medicine

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Traditional Chinese medicine goes back to ancient times. Medical practitioners have been using animals and plants over thousands of years in their clinical practice. Involving more than just great contributions to the Chinese nation, it represents an important chapter to the annals of Oriental civilisation. It's unique theories and therapeutic effects have attracted the attention of the world.

Chinese medication is chiefly composed of three types, ie plants, animals and mineral sources. Some are from human tissues or excretions. According to the Chinese materia medica works and literatures, more than 5,000 medicinal substances have been recorded. For example, The *Great Chinese Medication Dictionary* (1985) lists a total of 5,767 Chinese medicines. Of these, 4,770 are derived from plant material, 740 are derived from animal material and 80 are derived from minerals. The *Chinese Pharmaceutics Code - Part One* (1995) lists 522 Chinese medications.

Clinical experience and research have shown that Chinese medicine can effectively treat many diseases, in particular if these herbs are prescribed in the formulae according to Chinese medical theories. *Chinese Pharmaceutic Code - Part One* (1995), listed 395 effective Chinese herbal preparations. For instance, some types of cancer, Systemic lupus erythematosus (SLE), chronic Asthma, Hepatitis A, B, and C can be treated by Chinese medication with excellent results.

It has been also evident that some precious species, animals or plants, CAN TREAT or even cure some complicated disorders and emergency conditions, some of which modern Western medicine has proved ineffective. For example, rhinoceros horn can effectively control the secondary fever and inflammation induced by chemotherapy in acute leukemia. Tiger-bone can enhance the healing of fractured bone. Shexiang Baoxin Wan (musk pill for coronary heart diseases) is very popular in the treatment of heart attack. The result can match (if not better) the performance of Anginine and with little side effects. Although the exact mechanism of action is not clear in the context of western science, the Chinese theories have proved to be quite adequate.

It has been a long time since the Chinese people started to cultivate and domesticate wild herbs and animals to satisfy the demand in the amounts needed and allowing the preservation of many precious species. For example, *Emergency Management*, (edited by Mr. Sei Yu in 48A.C). describes how to plant ginseng in the farm. At the moment, practically all the ginseng is farm produced.

In China, the Government has consistently been highlighting the protection of environment and wildlife. As early as the 1950s, the Chinese Government realised the importance of protecting its wildlife source.

According to the available data, the protection of endangered wildlife in China includes three parts:

Alternative Medication to Wildlife Species

Based on the principles of protecting and using with consideration of the limited source of precious species, the Government has introduced various research projects: the alternative medication to the wildlife species. Some examples are as follows:

- Domestication of these wildlife species. One famous research topic is to rear musk deer in farms to harvest musk without killing the musk deer. This project is very successful. In this way, many wildlife species of animals/plants have become domestic species, saving the endangered species. Health authorities have approved musk usage from domestic musk deer.
- Synthesize the active substance to replace the natural products from precious and endangered species. After over 20 years of research, Chinese scientists have commercially synthesised musk. Using synthetic musk in medical practice was officially approved in 1993 in China.
- Using similar species of animals/plants to replace the wildlife and endangered ones, such as buffalo horn replacing rhinoceros horn. This research was introduced in the middle 1970s and the buffalo horn was officially listed in the *Chinese Pharmaceutical Code* (1985).

It is reasonable to believe that the development in gene-engineering technology will find vast application in the protection of endangered wildlife species too.

At the moment, more than 400 popular Chinese medications are from domestic sources. The land size is 400,000 hectares for domestic production. The output is 400,000–500,000 tons, or 40 % of the annual required amounts.

Introduce a Legislation System

China addressed the source protective and managing regulation on wildlife animals in 1987.

The Act became valid in 1988 and contains five chapters and 42 items. The Act empathises that using wildlife medication must follow the protection. Any violation will be punished with a fine or jail sentence. For example, tiger hunting is punishable with a death sentence.

In 1993, the Government addressed the decision forbidding any type of trade (including manufacture and business function) of tiger-bone or rhinoceros horn. Although this decision does not list detailed items regarding other endangered species, the source protective and managing regulation on wildlife medication (1987), plus the Act for wildlife animals protection, will control these endangered species from the source. As a result, in the current Chinese medication market, a lot of products bearing the name of "tiger bone" (ie tiger bone wine or plaster), do not contain real tiger bone. These are only named by manufacturers to follow the traditional prescription name.

In the near future, China will introduce the Administration Regulation for import and export of wildlife species. Meanwhile, the war against the wildlife smugglers continues.

An Education Agenda

The relevant education agenda on wildlife protection was nationally introduced through the media, schools and legal practice. Now, more and more Chinese understand and realise the importance of protecting wildlife animals, and learn to abide by the laws.

It appears the Chinese Government intends to follow the Washington Treaty of Protection of Wildlife. However, just like the "drug" problem in Australia, the protection of the endangered wildlife species will be a long-term task in China.

In Australia, most herbs are imported from China. The Commonwealth Government forbids any medication which contains or claims to contain endangered species. Through our excellent work, effective international co-operation and strong Government support, protecting wildlife will be a great achievement in Australia.

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Alternatives to the Use of Endangered Species in Chinese Medicine

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Abstract

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 or peeling off 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.
5. Using man-made artificial substitutes instead of using the parts of the animals.

The cases provided are the artificial Calculus Bovis and the Synthetic Muskone which both come from endangered species. Both alternatives are successful in experiments and clinical trials conducted.

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 of 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 practices have been banned in China for many, many years, even though these materials still appear in some textbooks of traditional Chinese medicine (Zhang 1990).

Chinese medicine always emphasises the harmony and balance between mankind and 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 has 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 have 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.

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

Newly Identified Substitutes for Endangered Species

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 African, 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 (Zhang 1990).

Now in China, buffalo horn (Shui Niu Jiao, *Cornu bubalis*) has replaced rhinoceros horn. It has been regulated in Chinese Pharmacopoeia (1995). Pharmacological study has shown that buffalo horn has antipyretic, cardiogenic 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 B 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 % (School of Pharmacy, Beijing Medical University 1979).

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 (Zhang 1990).

Dog bone and pig bone has been determined to have the effects similar to tiger bone. Clinical trials showed that the preparation, which contains dog bone as the major component, has significant therapeutic effect on treating rheumatic arthritis and rheumatoid arthritis. The total effective rate is 92.7 % (Chen 1982, p. 25). 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 (Zhu and Deng 1992).

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 become less and less, and tends to exhaust.

Berberis is abundant in China and has approximate 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) which have not been found in *Rhizoma Coptidis*. 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 (School of Pharmacy, Beijing Medical University 1979).

Cultivating Wild Plants and Breeding Endangered Animals

Cultivating Rhizoma Gastrodiae (Tian Ma)

Rhizoma Gastrodiae is the dried tuber of *Gastrodia elata* Bl. (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 a domestic plant. 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. This medicine has sedative and shock-resistant effects on the central nervous system, improves blood circulation and increase the blood flow in the cerebral and coronary arteries. Clinical trials 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 % (China National Corporation of Traditional and Herbal Medicine).

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 check 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, Russia and have established an antelope farm to breed for medicinal supplies.

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 captive-bred deer programs and have set up a farming stock of deer.

Removing Medicinal Parts from Live Animals or Plants without Destroying Them

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, stimulate menstrual discharge, reduce swelling and to relieve pain. Because the musk deer is a very rare and endangered animal, Chinese scientists have already employed modern science and technology to explore the medicinal properties of deer musk. They use artificially bred wild musk deer, and successfully extract the musk from the live deer. Multiple harvesting not only stimulates musk production, but also increases the male musk deer reproductive ability (Xu et. al. 1987).

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 to treat hypertension and vascular diseases. People used to obtain the medicinal part by peeling bark from the trunk causing the tree to die. After much research, the people developed new biotechnology to peel off the bark without damaging the tree. The method also stimulates the tree cortex to grow quickly.

Using Plant Tissue and Cell Culture to Propagate Medicinal Herbs

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 gall bladder, relieving summerheat and preventing the recurrence of malaria and fever. Artemisinin is the main component of sweet wormwood. 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 to improve crop yields (Xu et. al. 1987).

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 shows it can improve microcirculation. 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 adjusts different amounts of these alkaloids (Xu et. al. 1987).

Using Artificial Substitutes Instead of Animal Parts

Calculus Bovis (*Niu Huang*) is the gallstone (in the gall bladder and, less commonly, in the bile ducts) of *Bos taurus* domesticus Gmelin of Bovidae. It is used to restore consciousness by reducing *fire*, eliminating *phlegm*, relieves convulsions and counteracts toxicity. If the gallstone is found when slaughtering an ox, it is taken out and dried in the shade. The outer thin covering removed.

The artificial substitutes of Calculus Bovis consist of similar constituents, which include Bilirubin, Cholic acid and deoxycholic acid. Experiments and clinical trials show that the artificial Calculus Bovis has antipyretic, anticonvulsive, apophlegmatic and bacterial inhibiting effects and is reliable for further medical use (School of Pharmacy, Beijing Medical University 1979).

Synthetic Muskone (he cheng she xiang tong) is widely used in China to substitute *Moschus* (she xiang). Experiments show that Muskone has similar resuscitation, angina pectoris relieving and also anti-inflammatory effects and is popular in clinical treatment. (Huang 1994).

Developing Chinese Medicine and Protecting the Environment

The Chinese Government has made regular surveys on the utilisation and availability of medicinal materials, so that the protection and control of the wild medicinal materials could be enforced. Over recent years, the Chinese Government has introduced tough measures to control the possession and sale of products containing endangered plants and animals. Chinese environment and resource protection laws ban harming, killing and smuggling endangered species in and out of China.

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

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Tiger Bones, Rhino Horns, Bear Bile, Manchurian Ginseng and Traditional Chinese Medicine Practice in Australia

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Tiger bones, rhino horns, bear bile and Manchurian ginseng. These words, these beings are a trademark of traditional Chinese medicine (TCM) in the West, including Australia. Customs, quarantine and wildlife officials as well as environmental groups are now on the lookout for practitioners and importers in possession medicines containing endangered species. People ask "if these poor animals are becoming extinct why do these Chinese practitioners just keep on using them? Don't they have any concern for these beings?"

To answer these questions thoughtfully and sensitively, we have come to terms with a few things. First, TCM has been in our midst for more than one and a half centuries. For most of that time, we kept them as the "other". Digging for materials into the early history of TCM practitioners in Victoria, where do we find them? We find them as "the other" subjected to racial abuse in the pages of the Australian Medical Journal and the Victorian Hansard. We find them as "the other" in newspapers answering all sorts of charges and embroiled in all sorts of controversies. We find them listed as "the other", as "quacks" in Ludwig Bruck's *List of Unregistered Practitioners* appended to *The Australasian Medical Directory and Handbook 1886*, Bruck 1983). This history is not irrelevant to the fact that now we find them being framed as the "culprits" responsible for the extinction of the wildlife we all care for.

In short, Australia has come to terms with the presence of the "other" in our midst. TCM is now part of the Australian tradition of health care. We need to understand that TCM is undergoing change and development in response to Australian conditions.

Let us understand something of TCM practice, as much as any element in that system, so we can make an informed and generative response to the issue of the role of animal products in its practice.

TCM Practice of *Li Fa Fang Yao*

TCM is a system of medical practice embedded in the ethic which understands health-as-balance. The general aim of therapy is the restoration of balance from imbalance and preventing imbalances. Parallel to the recognition of the varied manifestations of health-as-balance and disease as imbalance, over the thousands of years, is the realisation of the role of *yao* in the complex workings of TCM practice. The logic of TCM practice is inscribed in the four Chinese words *Li Fa Fang Yao*, which may be translated into English as "choosing an individual *yao* for a formula on the basis of the established therapeutic method and principle" (Tiquia 1996).

The *li* is the principle, which explains why, and how diseases or clinical patterns come about. In TCM, diseases manifest themselves in a multitude of clinical patterns or *zheng hou*. These clinical patterns (of which more than 2,000 have been observed, collated and recorded) can

indicate whether the disease is hot or cold in nature, located superficially or deep within the body, *Yin* or *yang*, developing acutely or slowly and whether it is causing disharmony of the organ and acupuncture channel system in the body.

Once the *li* of a particular clinical pattern has been established, the stage is then set for deciding on a particular therapeutic method or *fa* for dealing with a specific clinical pattern. There is a choice of eight therapeutic methods: diaphoretic, emetic, downward, dispersing, mediating, warming, clearing, and tonifying methods. With a therapeutic method established, a therapeutic strategy or *fang* (or materia medica formula) is assembled to deal with a clinical pattern. This materia medica formula is made up of individual *yao*.

In several millennia of evolution and development, leaves, flowers, stem roots and fruits of certain plants, as well as minerals and animal-by products were found to address defined clinical patterns. Initially, individual *yao* were used indiscriminately and randomly to deal with certain ailments. Later a combination of *yao* was employed to deal with more complicated clinical patterns. In the process, a systematisation developed. Eventually, this evolved into the use of a group of *yao* in a formula to deal with complicated clinical patterns.

By observing and experiencing the effects of *yao*, (either individually or as a collection) on numerous clinical patterns or diseases, the medicinal or therapeutic action of thousands of plants, animal by products and minerals were coded and a system gradually emerged.

The Yao - "All substances which treat diseases"

Exactly what is *yao*?

Yao is a Chinese word for which an equivalent English word is very difficult to find. It has been loosely translated into "herb", an English word which refers only to plants. Whereas in TCM practice, remedies generically include plants, animal by-products and minerals etc. Sometimes, the word *yao* is translated as "remedies", a term which suffers from being too general. Some people translate *yao* as "materia medica". *yao* as "medicine" Wieger, Wilder and Ingram translate *yao* as "medicine" (Wilder 1974, Wieger 1965).

The *Chinese Medical Dictionary* defines *yao* as "all objects or substances which can be used to treat diseases". All these "materials", or *wu*, include animals, plants and minerals which have been classified and tested in accordance with the Eight Guiding Methods of Distinguishing *yao*. The *yao* also includes the "Five *yao*s" of ancient times, which are grass, trees, insects, stones, minerals and grain (Xie 1921). The Kang Yan Classical Chinese Dictionary defines *yao* as "those categories which can heal diseases such as grass, trees, metal, stones, birds, beasts, insects, fishes" (Chen 1716). The ancient Chinese script dictionary *Shuo Wen* defines *yao* "the grass or herb which cure illnesses" (Xu Zhen (Han) 1981).

The ancient Chinese script for *yao* is made up of symbols for bells and a drum set on a wooden platform with a radical script representing plants or grass on top. So *yao* refers to orchestration of music which can provide pleasure and joy, just as properly used medicines restore balance, health, freedom from illness, pain and suffering and hence pleasure and joy in life.

A nationwide resource survey covering 80% of China's land area, conducted over a period of five years beginning in 1983, revealed that there are now 12,807 *yao*, or "materia medica" used in China. Of this number, 11,146 are of plant origin; 1,581 are from animal origin and 80 are from mineral resources (Zhang 1995)

Out of 12,807 *yao* or materia medica, only 1,200 are considered and categorised as *yao cai* or materia medica material (ie individual *yao* that has been initially processed *pao zhi* and commodified for clinical use).

Out of the plant materia medica material 200-250 are plant roots; 180-230 are seeds or fruits; 160-180 are from whole plants; 70-80 are flowers; 50-60 are leaves; 30-40 are tree barks; 40-50 are crawling vines and 20 are fungus and mushrooms.

Of the 1,581 species of animals used as a medical resource, 1,306 are terrestrial animals and 275 are marine animals.

There are 412 species of fish used as *yao*. These fish species are:

1. Carp family 70 species
2. Tetraodon family (globe fish, balloon fish, puffer) 18 species
3. Syngnathus family (sea otter, pipe fish) 15 species
4. Loach family 12 species
5. Butterfish family 11 species

There are 39 species of amphibians used as *yao*. Some of them are:

1. Frogs family 13 species
2. Toad family 5 species
3. Tortoise and soft-shell turtles 17 species

Among the reptiles used as *yao* are:

1. Snakes 64 species
2. Lizards 34 species

Birds

1. Ducks 27 species
2. Pheasants 21 species
3. Hawk and eagles 14 species
4. Crows 10 species
5. Pigeon and doves 10 species

Among the terrestrial mammals are the following *yao*:

- | | |
|-----------------------|---------------------|
| 1. Tiger | 9. Hedgehog |
| 2. Black Bear | 10. Oriental Bat |
| 3. Sika deer | 11. Field rabbit |
| 4. Red Deer | 12. Flying squirrel |
| 5. Forest musk deer | 13. Badger |
| 6. Original musk deer | 14. Donkey |
| 7. Ox or cattle | 15. Leopard |
| 8. Otter | |

Out of the 1,581 species of animals used as *yao*, 160-220 species are categorised as materia medica material or *yao cai*. Among them 30-40 are invertebrates; 30-40 are insects; 40-60 are fishes and reptiles; while there are 60-80 beasts (Zhang HY 1995).

The use of *yao* in China has a history of 4 millennia. Information about them has been compiled, written, publicised and referred to as *ben cao*. *Ben* refers to a book or bound manuscript; while *cao* refers to shrubs or herb. *Ben* also means the root of a plant, which can also mean "origin". The first *Ben cao* was the *Shen Nong Ben Cao*, written in the year 1-2 BC. Shen Nong refers to the "Divine Farmer" who is a mythological personage who supposedly tasted one hundred *yao* to distinguish the medicinal from the poisonous ones.

The *Shen Nong Ben Cao* documented 365 materia medica or *yao*, which included 252 plants, 67 animals and 46 minerals. All these *yao* were classified into three grades. (Si YY 1984, p.24). The use of the *yao ren shen* or ginseng was first recorded in this *ben cao*. The *Collection and Annotations on the Ben Cao Classic* written by Tao Hong Jing in 500 AD increased the number of *yao* collected and compiled from 365 to 730. Based upon their origins, *yao* were classified into 10 different categories ie. Jade and stones, shrubs and trees, insects and beast, fruits, grain etc. In 657 AD, the first state sponsored compilation on *yao* was published which is the *Xin Xiu Ben Cao* or *The Revised Ben Cao*. Eight hundred and fifty *yao* were included in this collection which also featured illustrations. In this collection where 20 *yao* which came from outside the Han empire (Xue Y 1984). During the Song Dynasty the number of *yao* used increased to 984 with the publication of another state sponsored *ben cao*, the *Kai Bao Ben Cao* (Open Treasure Ben Cao) (Shang ZY 1989).

Over half a millennium ago, from 1552-1578 AD, the Chinese medical scholar Li Shi Zhen undertook a most comprehensive investigation into the materia medica resources in China. And after 26 years of scholarly work he published the celebrated volumes of the *Compendium of Materia Medica Ben Cao Gang Mu* which compiled information on 1,892 *yao* or materia medica. This volume which evolved into a very innovative system of classification of *yao*, included 1,094 plant materia medica; 443 animal materia medica; 275 mineral materia medica and 79 others (Xue Y 1984).

All these thousands of *yao* were classified into 16 categories (Qiang YM 1984) ie:

- | | | | |
|-----------------|----------------------|-----------------------------|-----------------------|
| 1. Water | 5. Grass or Herb | 9. Trees | 13. Shelled Creatures |
| 2. Fire | 6. Grain | 10. Implements and Utensils | 14. Fowls |
| 3. Earth | 7. Vegetables | 11. Insects | 15. Beast |
| 4. Metal-stones | 8. Fruits and Melons | 12. Scaled Creatures | 16. Humans |

This tradition of compiling information on the *yao* continued up to the modern times with the publication of the *Encyclopaedia of Traditional Chinese Medicinal Yao Zhong Yao Da Ci Dian* with 5,767 entries on various *yao* (Bensky D et.al. 1986).

Yao and the West

Following the Opium War, China's ports were forcibly opened to Western medicines which brought with it the culture of pharmaceuticals and drugs. Correspondingly, TCM and *yao* underwent radical changes. These changes were reflected in the content of the *Yao* pharmacopoeia or *ben cao* published during that time. The book *Records of Traditional Chinese*

and *Western Medicine in Combination* authored by Zhang Xi Chun (1918-1934) includes 45 Western pharmaceuticals among its listing of *Yao*. The entries on the names of pharmaceuticals were in English and Latin. Some of which are *Aspirin*, *Aether*, *Acidum hydrochloricum*, *Oleum Ricini*, *Magnesium Sulfurium*, *Natrium Chloratum* and *Adicum Coricum* etc. Another *yao* pharmacopoeia published in 1924 by Chen Ren Shan entitled *Distinguishing the Production Origin of Yao Substances* lists 54 "Chinese-Western *yao*" including menthol concentrates cod-liver oil, coriander seeds, manatee or sea cow found in Australia and the Indian Ocean. The fat of the fish is extracted and used as "cod-liver oil". Opium which was supposed to be produced in India and transported to China for use as *yao*. It is burnt and smoked which can "deplete one's treasures and harm the body", "words are not enough to speak of the harm it brings". An existing copy of the book *Distinguishing the Production Origin of Yao Substances* here in Australia originally belonged to the private library of TS Goon, a Chinese herbalist in Melbourne during the 1930s.

In Australia, no comprehensive study has been conducted yet on the *yao* used by TCM practitioners. However, a 1990 price quotation listing from two major wholesalers of *yao cai* (one from Sydney and one from Melbourne) reveal that the number of materia medica used by TCM practitioners as medical resource in Australia, range from 600-800 items. One of the price listing quotations with 767 materia medica or *yao cai* listed, included 695 items from plant origins; 30 from mineral origins; 17 from animal origins; and 3 items from human origins ie. hair ash, dried placenta and urine crystals. Among the animal *yao* are tiger bone gel, monkey bone gel, deer antlers, seal gonads, sea horse, pangolin scales, yellow inner lining of chicken gizzard, land tortoise shell, wingless cockroach, cicada moulting, antelope horn, dried earthworm and abalone shells etc.

Most of these *yao* materials are imported from Hong Kong and China. However, a growing number of *yao* (ie. plant, minerals and animals) are now being grown, developed and utilised locally. Examples of locally developed *yao* now available and in use in Australia are Ginseng (grown in the Victorian countryside) and seeds can be procured from local plant nurseries. Ginkgo biloba, arsenic (used to treat leukemia by Western doctors) (Wood 1998), garlic, ginger, spring onions, mung beans, adzuki beans, Nashi pears, seaweed, cattle gall stones, deer antlers. Seahorses are now being farmed in Tasmania. Unaware of their medicinal value, some of these *yao* are being exterminated as pests including cane toads, fennel, ragwort, camel thorn, wild teasel, St. Johns wort, mugwort, nutgrass, dodder etc. (Austen G 1988).

Using contemporary Chinese *yao* pharmacopoeias as a screening tool, I have scanned Australian botanical literature for Chinese plant materia medica growing here. So far, I have located about 243 species of Chinese plant *yao* growing locally in Australia.

Pharmacopoeia in China mainly document and list *yao* found in the northern hemisphere. Australia which is located in the Southern Hemisphere, has a different environmental profile and hence a correspondingly different *yao* profile. This is a potential area of research in the field of TCM which can not only increase the variety of *yao* and thus widen its application, but also more importantly enrich and transform the concept of *yao* itself.

Medicinal Value of the Yao

As we can see *yao* are medical objects and tools used to treat disease. They originate from plant, animal, mineral and even human products (ie hair ash etc). What is in these *yao* which construct their value as medicine? It is the nature of *yao* to embed a Qi. Qi assumes a Yin and Yang life; a motion dichotomising into dispersion, condensation, descending, ascending sinking, floating, expansion, contraction, moving in, moving out, hot and cold etc. Plants, animals, minerals, humans and non-humans all embedded in this "life". We might understand this as the emergence of entities which are "live" in this system. The metaphor of "live" here is not biologically live but more like the notion of a "live electric wire". The wire is "live" only within a particular configuration and particular understandings are needed to generate that configuration.

When the human body's Qi is out of balance (as in having a deficient Qi, Qi exhaustion, Qi stagnation etc), different categories of *yao* with an appropriate Qi nature (differentiated Qi) are used to restore the unbalanced Qi into balance. It is relatively easy for the Western mind to accept that biological organisms or even natural items like rocks have Qi. But it is much less easy to accept that a "contrived" object like a *yao* has Qi.

As medical objects and tools generating a dynamic Qi motion of floating (yang) and sinking (yin); rising (yang) and falling (yin); motion (yang) and rest (yin); expansion (yang) and contraction (yin); dispersion (yang) and condensation (yin), these *yao* when used to deal with illnesses, imbalance or disharmony in the human body were found to bring about balance, harmony and health.

Specifically, each individual *yao* is a "condensed Qi" with a specific nature or attribute vis-a-vis a defined clinical pattern. This specific nature of a specific *yao* is also referred to as its *pian sheng* or "inclination", "deviation", or bias. This specific nature of each individual *yao* defines its balancing or harmonising effect upon the body. Specifically, this means that every *yao* may be inclined towards being hot, cold, warm, cool, ascending, floating, descending, sinking, moistening, drying, sweet, pungent, sour, salty, bitter, tonifying, sedating, or associated or inclined towards a particular organ acupuncture channel, etc. For example, tiger bones as a materia medica has the inclination of being warm, pungent, and is inclined towards the Liver and Kidney organ systems. (Yan ZH 1991). Bear bile is bitter, cold and is inclined towards the Liver, Gall Bladder and Heart acupuncture channel. (*ibid.*); while the Manchurian Ginseng is sweet, slightly bitter and slightly warm and is inclined towards the Spleen and the Heart acupuncture channel (*ibid.*). The Rhino horn is cold, salty, sour and is inclined towards the Liver and Kidney organ meridian (Xie G 1988). As an individual *yao* with a "condensed Qi" "disperses" into the human body it sets out its work of bringing about harmony from disharmony; balance from imbalance, illness to health.

In TCM practice, it is the complex manipulation of these varied Qi motions of the *yao* or a group of *yao* in a formula or *fang* which brings about balance or equilibrium to a diseased clinical pattern *zheng*. In general terms, the fundamental principle in restoring harmony or balance in TCM holds that "when the clinical pattern is hot, cool it; when cold, heat it; when deficient, tonify it; when excessive, purge it; when dry, moisten it; and when damp, dry it.

As in the case of the materia medica tiger bone what is its medicinal value?

With a pungent Qi, the tiger bone can disperse warm-up and open up the flow of Qi. It has both the characteristics of opening-up and tonifying. It can dispel pathogenic wind and dampness, open-up the acupuncture channels and collaterals and tonify the Liver and Kidney organ systems while strengthening the tendons and bones. It can settle palpitations with fear *jing ji* and stop pain. Hence it is used to stop pain associated with Bi-syndrome brought about by factors of Wind and Dampness. The pain in this condition is characterised by its shiftiness. There is restriction of movement and stiffness of the four extremities. It is highly recommended for wasting and feeling of weakness in both knees and feet brought about by deficiency of the Kidney and Liver Organ systems. (Yan ZH 1991).

From the above, we can see that the *yao* is a primary medical resource in the complex workings of the practice of TCM in Australia. It is not a given set of substances. It is a complex mix of Yin and Yang Qi motion, flavours, acupuncture channels, organ systems, inclinations, tendencies, plants, animals, minerals that are used to balance complex patterns of diseases. It is not static but rather a dynamic body of medical knowledge which can take on board new ideas, new inclinations and new tendencies in the struggle against disease and the maintenance of health and balance.

Yao is an integral part of the practice of TCM in Australia. The *yao* or materia medica is our professional tool, our "primary medical resource" (Geiser CR 1989). Within this wide range of medical resource are animal by products including tiger bones, bear bile, musk and rhino horn, plants and minerals "all materials or substances that can be used to treat disease." (Xie G 1921).

Materia Medica as Endangered Species

Having understood a little about our practice and the medical resources we use, we now come to the question of the use of *yao* in TCM practice.

Like most of you here, we as TCM practitioners in Australia are most concerned about the extinction of the tiger, rhino, bear and Manchurian ginseng. We are first to recognise the impact of their extinction for they constitute part of our primary medical resource. Hence, we support efforts that will enhance their continued survival. In some ways their survival is linked to the survival of our profession. The continued survival of our primary medical resources means the survival of our practice of *li Fa Fang Yao* in Australia.

However, we are concerned about the increasing numbers of animals and plants being put on the list of endangered species and the manner and ways by which decisions are made by certain agencies to put them in that list. This has implications to the dwindling number of *yao* we can use which poses a threat to the viability of our practice in Australia. A working manual used by one federal government agency includes the following very commonly used *yao* on their list of banned endangered species (*Mandarin Characters of Endangered Species Used In Herbal Medicines* undated). Each *yao* in this partial list is indispensable to our TCM practice.

- | | | |
|----|----------------------------|---------------|
| 1. | <i>Panax ginseng</i> | ren shen |
| 2. | <i>Pinellia ternata</i> | ban.xia |
| 3. | <i>Cibotium barometz</i> | gou ji zi |
| 4. | <i>Gastrodia elata</i> | Blume tian ma |
| 5. | <i>Panax quinquefolium</i> | xi yang shen |
| 6. | <i>Dendrobium nobile</i> | shi hu |

7. *Bletilla striata* bai ji

In addition, we would like to point out that recent campaigns against the use of some of our medical resources, for example tiger bones, bear bile and rhino horns, have led to a negative stereotyping of our practice. We have attempted to correct them but somehow, certain myths constructed around our practice by certain uninformed elements persist in our community. One of these "myths" is the notion that tiger bones, rhino horns and bear bile is used as "aphrodisiacs". This relates to an old elision between "the other" and "sex". Then there are those newspaper articles and electronic media coverage highlighting "exotic substances" used in TCM like deer penises, bull testes and seal penises (Tiquia R 1991).

Another image conjured in these campaigns is that of "cruelty" to animals, typified in the bear bile campaign. We are still reminded of the picture of the huge bear kept in cramped cages and then being milked of their gall bladder bile through surgical procedure (Tiquia R 1993). Question are then asked as to why the cruelty just to get the bile? What is the bile used for? The answer: TCM uses them as aphrodisiacs - a simplistic analogy is made. TCM equals cruelty to animals.

Using Leopards, Bats, Magpies and Pigeons

As part of a scheme in recent history to cast the then Chinese herbalists as "the other", their use of animal materia medica has been exploited in the past to devalue the *yao* they use, and in the process, devalue and de-legitimise their medical practice.

Almost seventy years ago in 1925, a controversy emerged in Victoria over the introduction of a bill in the Victorian Parliament called the Pharmaceutical Chemists Bill. The Bill would limit the prescription of medicinal herbs to chemists. The person who introduced the bill was a Western scientific medical practitioner and Member of Parliament by the name of Dr Argyle on the side of the government (Victoria Parliamentary Debate 1925).

During the second reading of the bill, Dr Argyle painted a veneer of illegitimacy over the qualification and nature of practice of the practitioners of herbalism. Furthermore, he focussed on the most marginalised section of the Herbalist Association, the Chinese herbalists. Three were members of the Herbalists Association and in directing his attack upon the nature of practice of the Chinese herbalists, he concentrated his assault upon the least understood and supposedly most "seamy" aspect of their practice, the use of animal *yao*. Here is a section from the Victorian Hansard which documents Dr Argyle's portrayal of TCM practice as abominable with its use of animals like bats and magpies, pigeons, leopards, "dragon spittle" and animal excrements.

Box 1: Excerpt from Victoria Parliamentary Debate. 28.10.1925 (pp.1911-1912).

"Dr Argyle: I now come to the Chinese. They use the most extraordinary things in medicine. The following extracts are from Frederick Porter Smith's book, to which I have already referred-

BAT

This animal is very common in China. Being a frequent visitor of foreign houses in quest of mosquitoes, which it devours most satisfactorily. As it is supposed to feed upon the stalactites, which are frequently met with in the caves which it is wont to hibernate in, its medicinal properties are rated at considerable value by the Chinese. From its asserted extreme longevity and its excellent sight, this curious creature is credited by the Chinese with the power of conveying these desirable qualities to

those who consume the disgusting preparations made from all parts of its body.

Mr. Cain- *That will not keep the people away from the Chinese herbalists*

Dr. Argyle.- *The people who keep away from the Chinese herbalists are the Chinese themselves. They always go to European doctors.*

DUNG

Common Sparrow

The excrement of the common house sparrow is mixed with peppercorns, powdered, and then mixed up by means of spirits of wine. This mess is used to diminish the pain of opening abscesses, the thick compound being first applied for some time to the skin. It is also applied to the wounds caused by arrowheads or shot to diminish the pain of extracting the foreign bodies.

MAGPIES

The nest of the magpie is burnt and the ashes given in nervous diseases, fluxes and other disease. The dung of a species of columix is perhaps mixed with the dung, which comes in the shape of small, oblong, round, or conical pellets, of a black colour, very light, easily broken, and having a burst or sweetish flavour.

Mr. Prendergast- *What is the difference between taking a piece of an animal to cure one disease and using thyroid gland from an animal for another disease?*

Dr. Argyle- *I have not noticed yet that any excrement is used in our work.*

It is said to be cordial, sedative, anti-periodic, astringent, anthelmintic, and vulnerary, with almost any other quality that could be enumerated. It is one of the remedies for leprosy, being applied to the benumbed parts in the form of ointment. The brain of the magpie is eaten to increase the thinking power.

WHITE PIGEON

The dung of the wild pigeon is used as a veterinary medicine, and is credited with discutient, deobstruent, alternative, anhelminthic, antiscorbutic, and vulnerary properties. The name "left coiling dragon" is given to this disgusting article, from the assumed fact that the excrement which, in dropping from the bird, coils itself from left to right, wonderfully efficient as a drug.

Dragon's Spittle

A costly, odorous, light-yellow, gummy substance found floating on the sea, or procured from the belly of some large fish in the Indian Ocean, is described in such a particular way as to leave no doubt that ambergris is meant. A similar substance is said to be the egg of the dragon, or a kind of sea-serpent. This drug is greyish or yellowish colour, according to Chinese writers, and is asserted to have marvellous discutient, vulnerary, and healing properties.

Leopard

The claws and bones of these animals are used in medicine as a tonic or prophylactic remedy. They are sometimes burnt and the ashes taken as a remedy in urinary disorders. The bones sold are seldom genuine.

Mr. Blackburn- *Is this the treatment the British Government allows natives to receive in Tong Wah Hospital?*

Dr. Argyle- *I cannot say. I can only say that this is from the textbook from which the Herbalists' Association in Victoria say their Chinese members get their education. The knowledge of herbs and their functions has not progressed to any remarkable degree during the past century..."*

First of all, Dr Argyle highlighted only animal materia medica from Porter Smith's book despite the fact that even during this time, most materia medica used by Chinese herbalists was derived from plants. In order to portray a negative image of Chinese medicine practice, most of the yao featured were derived from animal excrement. Inclusion of magpies and pigeons intended to inflame anger towards those who threaten our native birds. Note the technical terminology such as "discutient", "vulnerary", "deobstruent" to describe the medicinal uses. Like the word "aphrodisiac" they are all foreign to the technical terminology used in TCM practice.

This was how the stereotyping and blackening of TCM practice occurred during the 1920s in Melbourne. The aim was to devalue the practice of herbalism and herbalists, paving the way for "respectable white" chemists to monopolise the prescription of herbs. However more than 6,000 white patients of members of the herbalists association, signed a petition opposing the Bill, which forced the government to abandon the legislation (Victoria Parliamentary Debate 1925).

Proposals

An increasing number of medicinal resources used in the TCM practice, for example the tiger, bear, rhino and ginseng are becoming extinct. This is a legitimate concern for the Australian and international community and even of greater concern to TCM practitioners in Australia. Moves to find alternatives to the use of these species for medicinal purposes both in China and here in Australia are addressing some of these concerns.

However, the problem of the increasing number of our medicinal resources being included in the "endangered lists" thus leading to price escalations and difficulty in procuring them threatens the viability of our practice. A more transparent system, which draws up the list of endangered yao species, must be put into place. This system should work closely with the TCM profession and related industries. In addition, negative campaigns focused upon one-sided, uninformed and misleading information about the medical resources we use in our practice especially animal based medicinal resources are threatening the legitimacy of their use and specifically the use of yao in general.

Hence, it is proposed that a comprehensive study be conducted on the state of the medicinal resources used by TCM practitioners in Australia. In this way, we can have an inventory of yao used in traditional medicine including plants, animal and mineral resources. In this study, there will be an emphasis upon finding alternatives to those yao, which are becoming extinct. Concurrently, a clinical evaluation technique evolved from the practice of TCM in Australia should be developed to test the efficacy of yao used in TCM clinical practice.

Secondly, to prevent the stereotyping of the practice of TCM in Australia, an education campaign should be conducted which can raise community awareness on TCM as a tradition of health care that is part of our pluralistic medical system and not as "the other". In this TCM awareness campaigns the focus will be on how this Australian tradition of health care can complement the knowledge base and medical resources of other medical traditions in promoting the health and wellbeing of Australians.

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Program

TIME	SPEAKER	PRESENTATION TOPICS
9.00AM	Professor David Story Dean Faculty of Biomedical and Health Sciences and Nursing, RMIT (<i>Master of Ceremonies</i>)	Welcoming address.
9.10	Mr Haisheng Zhao Cultural Consul- Chinese Consulate - Victoria	Welcoming remarks
9.20	Mr Bruce Billson MP, Member for Dunkley on behalf of Senator Robert Hill, Minister for the Environment and Heritage	Opening address.
9.35	Dr David Kay Assistant Secretary - Environment Australia	The Wildlife Protection Act - the current and proposed controls on trade in traditional medicine products containing endangered species.
10.00	Mr Samuel Lee Project Officer TRAFFIC - East Asia	Trade in traditional medicine using endangered species - International context.
10.30	Q&A	
11.00	Morning Tea	
11.20	Dr Fiona Cumming Manager, Office of Complementary Medicine. Therapeutic Goods Administration	Import controls on traditional medicines under the <i>Therapeutic Goods Act 1989</i> and associated labelling issues.
11.40	Ms Anne-Louise Carlton Project Manager Complementary Medicine Project Victorian Department of Human Services	Occupational regulation of Chinese Medicine in Victoria.
12.00PM	Q&A	
12.30	Lunch	
1.30	Mr Alan Bensoussan Senior Lecturer - Faculty of Health University of Western Sydney	Responsible use of traditional Chinese medicine.
1.50	Prof T. Chiang Lin National President Federation of Chinese Medicine and Acupuncture Societies of Australia Inc (FCMA).	Current situation in China on the use of endangered species in Chinese medicine.
2.10	Q&A	
2.30	Afternoon Tea	
3.00	Dr Jerry Zhang MB of Chinese Medicine PhD of Chinese Pharmacy Pharmacognocist and Lecturer at RMIT	Alternatives to the use of endangered species in Chinese medicines.
3.20	Dr Rey Tiquia President- Alliance of Chinese Medicine Associations of Australia	Tiger bones, rhino horn, bear bile and Manchurian ginseng and traditional Chinese medicine practice in Australia.
3.40	Q&A	
4.00	Councillor Wellington Lee Melbourne City Council	The importance of working together.
4.30	Panel Discussion	

List of Registrants and Speakers

A	Ms Ann Armstrong
B	Mr Alan Bensoussan Senior Lecturer Faculty of Health University of Western Sydney
	Dr Bettina Brill
	Ms Naomi Bennet
C	Dr Fiona Cumming Manager- Office of Complementary Medicine Therapeutic Goods Administration
	Ms Anne-Louise Carlton Project Manager Victorian Government Review on Alternative Medicine
	Mr Sai Chen
	Dr Quentin Chen
	Dr Ho Ka Cheong
	Mr Kau Fong Cheung
	Mr Man Kwong Chung
	CMP Wen Guang Chen
D	Ms Marie Danton Australian Customs Service
	Ms Catherine Digney Australian Customs Service
	Mr Wen Dang
	Mr Jordan Devine
	Ms Lyn Dolman
E	Miss Hannah Ellis
F	Ms Christina Faull Australian Customs Service
	Mr Shaun Francis
	Mr Maroun Francis

Traditional Medicine and Wildlife Conservation - List of Registrants and Speakers

G	Dr Sherman Gu
	Mr Farzaneh Ghaffaris
	Mr Harley Gale Editor Pacific Journal
H	Mr Ian Hardy
	Mr Saron Hung
	Mr Richard Hing
	Ms Tenecy Ho
J	Mr Ling-Jiahao
	Ms Kylie Jones
K	Dr Nithy Kauagaratman Department of Bio-medical Sciences Victorian University of Technology
	Mr Daniel Kocyan
	Mr Michael Kolarik
	Mr Michael Kotsanas
	Dr Young Ho Ko
	L
	Mr Jun-Wen Li
	Dr William Lin
	Ms Serene Luo
	Mr Samuel Lee TRAFFIC - East Asia
	Councillor Wellington Lee City of Melbourne
	Mr Phillip Lam
	Mr Victor Lam
	Mr Er Ning Li
	Ms Sai Li
	Mr Raphael Lim
	Mr Chi Jing Liu

Traditional Medicine and Wildlife Conservation - List of Registrants and Speakers

	Dr Yan Wo Lo
M	Ms Liz March
	Mr Tim Marriott
	Mr Stefan Mifsud
	Mr Jim Marriott
	Mr Justin Mackley
	Mrs Michelle McLaughlin
	Ms Catherine Merrigan
N	Ms Irene Newman
O	Mr James O'Brien
	Ms Kylie O'Brien
P	Ms Natalija Paunovic
	Dr Suzy Pui
	Mr Cameron Phillips
R	Mr Hui Zhu Rong
S	Ms Dianne Sedwell Training Office Australian Customs Service
	Mr Steve Slater
	Ms Heather Stewart
	Mr Albert Supratrmin
	Professor David Story Dean of Faculty Biomedical & Health Sciences & Nursing – RMIT Bundoora Campus
	Mr Glen Sant Director TRAFFIC Oceania
	Ms Lynelle Shanley
	Miss Sarah Southurst
	Mr Brendon Supple
	Ms Glenys Savage
T	Ms Sandra Tan

Traditional Medicine and Wildlife Conservation - List of Registrants and Speakers

	Dr Robbie Todd
	Prof Tzi Chiang Lin National President Federation of Chinese Medicine and Acup Societies of Australia Inc
	Dr Rey Tiquia President Alliance of Chinese Medicine Associations of Australia
	Mr Steve Tara
	Ms Doris Trang
V	Ms Jill Vella
W	Dr Cedar Warren
	Dr David Deyuan Wang School of Health Science MCMC
	Ms Lynlee White
X	Dr Charlie Xue Head, The Chinese Medicine Unit RMIT University
Z	Mr Haisheng Zhao Chinese Consul Chinese Consulate- Victoria
	Dr Jerry Zhang
	Mr Andy Zhang
	Dr Zhen Zheng
	Dr Hui Zheng Zhang