



BIODIVERSITY

Endangered and in demand

With an ingredients list that includes rhino horn and tiger bone, traditional Asian medicine is on a collision course with wildlife preservation.

BY DUNCAN GRAHAM-ROWE

It looks innocuous enough: a small vial bearing a white and orange label with the words 'Shi-He Ming Yan Wan'. Yet the pills contained within are said to hold great healing powers, able to cure just about anything, from a mild fever to a brain haemorrhage; from cancer to AIDS. The pill's power, it is claimed, comes from a small amount of rhinoceros horn. Little wonder then that people pay as much as US\$50,000 for a kilogram of the stuff, roughly the same as the price of gold (see 'The rhino toll').

The rhino and its horn are not alone: powdered tiger bone is used to treat rheumatism; the scales of the toothless, anteater-like pangolin are believed to reduce swelling and improve blood circulation; and *guilinggao*, a jelly derived from the shells of freshwater turtles, was used to treat smallpox in a nineteenth-century emperor, with little success — in Taiwan it is now reputed to cure cancer. It is a similar story for many other endangered species whose commercial use is restricted — or banned outright — by the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES).

The illicit trade in wildlife is a booming industry, estimated by the US congressional research service to be worth as much as US\$20 billion globally each year¹. Although this figure includes trade in bushmeat, skins and exotic pets, in the expanding Asian market, estimated to be the largest in the world, a significant driver is traditional Chinese medicine (TCM). Indeed, despite showing signs of decline in the 1990s, the poaching and trade of endangered animals such as tigers and rhinos is once again on the rise. Yet cheaper and more potent alternatives are available. Organizations such as the American College of Traditional Chinese Medicine say that sustainable substitutes have been used successfully for nearly two decades. So why is there still a burgeoning market to use these precious animals in traditional Asian medicine?

RICH PERSON'S REMEDY

One likely factor driving this demand is the rise in the wealth of China, says Sabri Zain, director of advocacy for Traffic International in Cambridge, UK, which was established in 1973 to monitor wildlife trade. "Currently China is the biggest market," he says. This dominance is not just a consequence of China's population, or the fact that traditional Asian medicine has its roots there, but to the country's rapidly rising incomes. "There are more people who can afford it," Zain says.

The market for these substances also seems to be expanding. A range of new products has emerged over the past decade, available as black market products or through online stores. "Tiger bone is now being used in wine," says Debbie Banks, a senior tiger investigator with the Environmental Investigation Agency (EIA), a campaign group in London. It is a similar story with other new products made with tiger bones, such as shampoo — or indeed with tiger penis

soup, which has no perceived medicinal value whatsoever, she says. In fact, these wines, shampoos and soups are not part of the traditional medicine repertoire at all. However, they do lean on the same beliefs, says Banks. "They are seen as status products," she adds.

Indeed this association with status is a major issue, reflected in the demographic of the modern-day user of these products, says Zain. "It's a myth that these products are only being consumed by an older generation. It's not just the old fogies, it is also young, wealthy professionals," he says. "It may be a way of showing their peers that they can afford these very expensive medicinal products."

And there appear to be plenty who meet that financial test. In 2008, a survey of nearly 1,000 people from six cities across China found that 1.9% of respondents had consumed a medicine or tonic containing tiger within the past 12 months². If this represents national consumption, it would mean a user base of around 25 million people.

In Vietnam, which is one of the largest markets for TCM outside China, traditional remedies are sought after. If incomes were to increase, so too would consumption of products containing endangered species³. This is hardly surprising, says Zain, given the perception that products such as rhino horn are capable of curing cancer — a medicinal property previously unheard of in traditional Asian medicine.

HORN OF PLENTY

So what of these purported health benefits? The use of rhino horn dates back at least 1,800 years and is referenced in Shennong's *Classic of Materia Medica*, the very first book of Chinese herbal medicine, says Huijun Shen, president of the UK Association of Traditional Chinese Medicine in London. Shen has nearly 30 years experience as a traditional medicine practitioner, having trained and practised in China before moving to the UK in 1995. Tiger bone is a more recent addition to the TCM apothecary but is similarly well established in the Chinese literature as a medicinal treatment. Yet despite their place in the East Asian medicinal tradition, the clinical applications of both rhino horn and tiger bone are limited, so their use is rare. Even before tiger and rhino products were banned in China in 1993, demand for them was weak, says Shen. "I never used them, even when they were legal," he recalls, "because they were so expensive."

In fact, in nearly two millennia, there is no record of rhino horn as a treatment for cancer, says Shen. Rhino has very few medicinal uses, the main one being to treat what is known in TCM as 'heat toxin in blood' syndrome (there is no direct modern medicine equivalent, although it is usually caused by serious infections and can lead to toxæmia or septicaemia). Today this condition is treated with cheaper and more effective alternatives. "Normally we just use antibiotics," he says. Modern TCM practitioners, he adds, are often

trained in both TCM and Western medicine.

According to Zain, anecdotal evidence suggests that using rhino horns to treat cancer was fabricated recently by illegal traders to boost their market. And, judging by the increase in poaching, it appears to be working. "Rhino is probably the most worrying trend," says Zain. That's because, until 2007, the number of rhinos being poached seemed to be dropping dramatically. Since then, however, there has been a resurgence, from 8–10 illegal rhino horn seizures a year to 200 or more in 2007. It's not entirely clear what has caused this increase, but seizures on the ground and at international borders are still on the rise — this year the tally is expected to reach more than 400. Moreover, Zain says, based on the number of poached rhinos, the number of illegally traded horns that evade capture by the authorities is also increasing (see 'The rhino toll'). Indeed, in autumn 2011, the International Union for the Conservation of Nature announced that wild populations of black rhino in West Africa are considered officially extinct.

It is a similar story with tigers, says Banks. Back in 1993, after intense international pressure and under the threat of sanctions from the US government, China's state council prohibited the import or export of tiger bone and rhino



Tiger-bone remedy for sale in Vietnam.

horn, and banned the sale of medicinal products containing them within the country (with an exception for research into substitutes) under penalty of death. In 1999, China established an anti-smuggling unit. Following these measures, according to Chinese CITES officials, seizures of tiger parts seemed to decline, as did the availability of tiger products on the street⁴.

INVESTING IN EXTINCTION

Since 2002 the declining trend has reversed, and seizures of tiger parts are now four times what they were a decade ago. Tiger skins alone can fetch in excess of US\$20,000 per hide, so this rise cannot be attributed solely to supplying traditional medicine. But with each set of tiger bones worth as much as \$7,000 it is unlikely that a smuggler would sell the skin without also trying to profit from the bones.

Even if ever more affluent consumers in

countries such as China and Vietnam are ramping up demand for traditional Asian medicines, why opt for hugely expensive products, and potentially risk the death penalty, when alternatives are available that are not only cheaper, but which are also claimed to be more effective? China's Northwest Institute of Biology has conducted many different studies into the properties of *sailong* (mole rat) bone and its use in treating rheumatism. Moreover, there are a number of drugs containing it approved by the Chinese regulatory agency to treat rheumatism. The Chinese authorities actively encourage using *sailong* bone as an alternative to tiger bone.

Yet many believe that the Chinese authorities could be doing much more. China does have harsh punishments for those caught trading in illegal wildlife, and regular seizures of animal contraband are made at its borders. But within China there is little policing, says Banks; bones and skins are openly sold in markets. And, as of 2011, the death penalty is no longer applied to this crime.

What's more, the Chinese government's attitude to farming animals for use in traditional medicine is a concern, says Banks. Bears are farmed for their bile, which is used to treat gallstones. There are also many officially sanctioned tiger farms⁴. Most only hold a dozen or so tigers, says Alasdair Cameron, a campaigner with the EIA, but several house more than a thousand of the big cats. He estimates that there are between 6,000 and 10,000 captive tigers in the country. And with reports of China importing hundreds of live rhinos too, it raises the question of why they are breeding these animals if not for their bones and skin.

"The Chinese government has categorically denied that this is what they are doing — and that these live rhinos have been brought into the country to meet the demand for recreational zoos," says Zain. But the cramped conditions the animals are kept in suggests otherwise, he says. More to the point, some of these tiger farms were set up before 1993 with the stated aim of breeding tigers for use in traditional medicine and for their skins — before the ban on tiger bone was introduced — and have never closed, says Cameron.

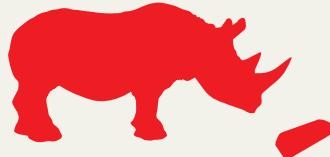
"You could argue that these breeding farms will take the pressure off wild animals," says Zain. This is the argument for crocodile farms, which produce meat and skin. But the reality is that farms maintain demand for the animal parts, yet cannot cope with any surge in demand. If this happens, the temptation will be to satisfy it by hunting — putting pressure on wild populations. "There are millions of crocodiles in the world," Zain observes, "but only a few thousand tigers." So farming tigers not only encourages the capture of wild animals for breeding but also stimulates demand for the products. With so few tigers left in the wild, it would only take a small increase in demand to push them over the edge into extinction, he says. What's more, it's not really in the interest of tiger farmers to prevent the extinction of wild populations: after all, once

THE RHINO TOLL

An upsurge in the cost of rhino horn has fuelled poaching. Increases have coincided with new medical claims about the use of rhino horn in traditional Asian medicines.

THE COST

Black rhino numbers have shrunk by 96%, primarily due to poaching.



BLACK RHINO NUMBERS

From 1970, large-scale poaching of the black rhino (*Diceros bicornis*) in Africa caused numbers to fall by 96% to an estimated minimum of 2,410. Numbers have since recovered a little, although one West African subspecies was recently declared extinct.



they are extinct there would be no reason to control the trade in tiger body parts.

But perhaps the most disturbing notion is the prospect that people might trade in endangered animals as a means of “investing in extinction”. This is the idea that by actively buying up and stockpiling rare animal parts, one can not only push up the price, but also encourage further poaching that will eventually force the species into extinction. In cold-blooded business terms it makes an awful lot of sense, says John Scanlon, secretary-general of CITES in Geneva, Switzerland. “If something is rare it becomes more attractive,” he says. “And the rarer something is, the more valuable it becomes.”

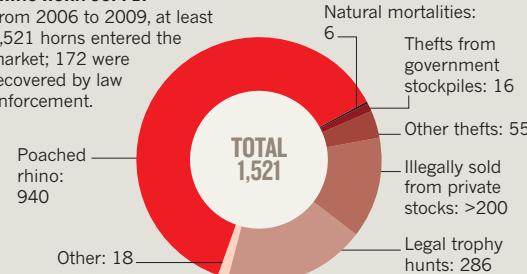
Scanlon concedes that he only has “rumour and anecdotal evidence” that anyone is actually ‘investing’ in the demise of a species. “It’s still speculative,” he adds. According to the EIA, however, tiger farms are stockpiling the bones and skins of tigers that die. Indeed, Chinese authorities have set up two operations — one in Guangxi and one in Geilongjiang — to dismember the carcasses of dead tigers and destroy all but the bones and skins⁴. The Chinese authorities say this is to ensure there is adequate supervision of the carcass and body parts, but why the bones and skin are then not destroyed is not clear. So although there is no proof of people stockpiling wild tiger parts, it is certainly happening in farms.

DAMPENING DEMAND

There is no simple solution to tackle illegal trade in these endangered animals, says Scanlon. But the hope is that progress can be made by adopting diverse tactics, including controlled delivery, tracking illicit substances to the buyer. “It has

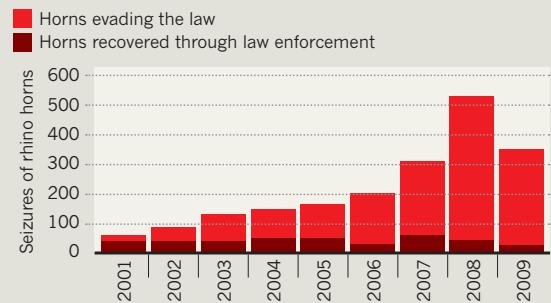
RHINO HORN SUPPLY

From 2006 to 2009, at least 1,521 horns entered the market; 172 were recovered by law enforcement.



SEIZURES OF RHINO HORN

Many more rhino horns now evade law enforcement.



and demand in Tibet has all but disappeared⁵.

The truth is that simply prohibiting trade or the use of animal parts doesn’t stop the poaching. “After the ban, demand still didn’t disappear completely,” says Shen. Even changing the traditional medicine formulae has minimal impact. “Most practitioners would not use these substances,” Shen says. But people don’t always go through a practitioner. “For TCM you don’t need a prescription — you can buy any Chinese medicine over the counter.”

Demand reduction will take time. “Cultural and historical beliefs play a big role,” says Shen, and with traditional medicine, attitudes and beliefs run deep. Providing sustainable and effective substitutes for tiger bone and rhino horn is one thing, but getting people to use them and believe in them is another. Indeed, one of the findings of Traffic International’s survey in Vietnam was that there is a powerful underlying belief that medicines made of wild animals are of a higher quality than those using farmed animals or synthetic substitutes. In essence, getting users of traditional Asian medicines to change their ways is as much about changing tradition as it is about advancing medicine. ■

been used to combat illicit trade in drugs and we are now training wildlife enforcement officials in the same technique,” says Scanlon. “We have employed two staff who have vast front-line experience with police and customs in China and South Africa to assist us in the fight against wildlife crime.” And CITES has scheduled a December 2011 training course on controlled delivery techniques for staff in 20 states in China.

Furthermore, in 2008, despite having a remit limited to international trade, CITES took the

unusual step of issuing an advisory notification to signatories, which include both China and Vietnam. The notification stated that countries in which intensive breeding of rhinos or tigers takes place should ensure that none of the animals are bred for their parts or derivatives. It even suggests the use of DNA profiling, so that illicit trade can be traced to source. But, as Scanlon points out, the notification is merely advisory and not binding.

Ultimately, Zain believes that the solution must come through demand reduction — “to make it socially unacceptable, or dispel the myths concerning these products”, he explains. “If there is no demand for a product then there is no trade.” Such an approach has already successfully reduced the demand for tiger skins among Tibetans. Following a campaign to raise awareness of the tiger’s plight, and an appeal by the Dalai Lama in 2006 for Tibetans to stop wearing the fashionable tiger-skin chubas, demand fell dramatically. Tiger skins were burned and it became socially unacceptable to wear or sell them,

The rarer something is, the more valuable it becomes.

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3. Venkataraman, B. (Comps) *Traffic Southeast Asia* (2007)
4. Chunyu, S. *CITES Communication SC61 Doc. 41*, Annex 2 (2011).
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