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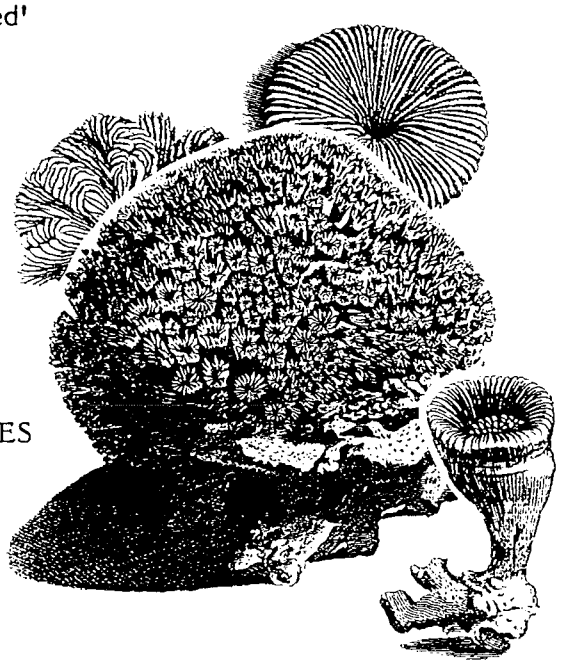

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PEOPLE'S TRUST FOR ENDANGERED SPECIES

101 in CITES

St Vincent and the Grenadines acceded to CITES on 30 November 1988, effective 28 February 1989, and becomes the 97th Party to the Convention.

Chad, Gabon, Ethiopia and Malta have acceded to CITES. These accessions become effective on 3 May, 15 May, 4 July and 16 July respectively, and this will bring the total number of Parties to 101.

RECENT MOVES TO HELP CONSERVE THE AFRICAN ELEPHANT

EEC Introduces Stricter Ivory Trade Controls

CITES has been implemented in the European Community since 1 January 1984 through a Regulation which subjects imports of specimens of a great many species, including the African Elephant Loxodonta africana, to stricter measures than those provided for under the Convention.

An import permit for specimens of these species is only issued where:

- it is clear that the capture or collection of the specimen will not have a harmful effect on the conservation of the species or on the extent of the territory occupied by the populations in question of the species;
- the applicant provides proof by means of documents issued by the competent authorities of the country of origin that the specimen has been obtained in accordance with the legislation on protection of the species in question;
- there are no other requirements relating to conservation of the species which militate against issue.

In accordance with the provisions concerned, imports of ivory into the Community are prohibited in cases where ivory was exported from a country of origin in a year for which the country concerned submitted a zero quota, or where it was otherwise traded in non-compliance with the CITES Ivory Quota System.

In spite of the Ivory Quota System, elephant populations continue to decline at an alarming rate and poaching is believed to halve elephant populations every ten years. Without immediate action, a strong political will and an unprecedented level of international co-operation, poaching will result in the extinction of elephants in many parts of Africa.

Therefore the Commission of the European Communities has proposed a number of measures to help save the African Elephant:

1. To join the African Elephant Conservation Co-ordinating Group and support the Action Plan and Strategy for the Conservation of the African Elephant developed by that group.

2. To further restrict ivory imports.

The first decision involved a financial contribution of US$550 000 to the Action Plan at the end of 1988 and a further sum is likely to be contributed in 1989.

Further restrictions on ivory imports mean that after 1 January 1990, the commercial importation of African Elephant ivory shall be prohibited from countries in certain categories, namely:

a) from an exporting or re-exporting country that is not a Party to CITES;

b) from an exporting or re-exporting country that is a Party to CITES, but which does not adhere to the CITES Ivory Quota System;

c) from an exporting country that is a Party to CITES adhering to the CITES Ivory Quota System, but which:

- does not implement an elephant conservation programme based on the best available scientific information;
- does not base its ivory export quota submissions on such information;
- makes insufficient progress in obtaining the necessary scientific data concerned;
- exceeds its agreed ivory export quota, or
- does not effectively monitor and control the taking of elephants and its internal and international trade in ivory; and

d) from a re-exporting country that imports ivory from a country referred to in a) to c) above.

The import of ivory confiscated and disposed of in compliance with recommendations of the Conference of the Parties to CITES on the subject shall be exempted from this prohibition.

Under Articles 9 and 132 of the Lomé Convention, the Commission is committed to inform the ACP States of its intention to take measures that might affect their interests and to hold consultations should they be requested. In conformity with the above provisions the Commission shall inform the ACP States of its intention to restrict ivory imports as described above, and will hold such consultations as may be requested.

In response to the above proposals, the Council of European Environment Ministers, on 2 March 1989:

- expressed its concern over the serious decline in African Elephant populations and affirmed the Community's continued support to the African States in their efforts to protect these populations from poaching and to manage them on a sustainable basis;
- welcomed the Commission's intention, according to the procedures laid down under the relevant Community legislation, to propose stricter conditions for the commercial importation of African Elephant ivory, to inform the African countries concerned of these measures, and to hold consultations with them should this be requested; and
- invited the Commission to hold discussions with other third countries with a view to obtaining the widest possible consensus on the measures to be followed for the protection of the African Elephant.

The Commission will actively pursue the matter in order that the more significant ivory consuming countries adopt restrictive measures similar to those of the USA and the Community. It believes that only then the illegal trade can be wiped out without damaging the economy of African countries that exploit elephants on a sustainable basis. It further believes that this approach will provide the seventh meeting of the Conference of the Parties to CITES in October with an appropriate alternative to an Appendix I listing of the African Elephant.

Willem Wijnstekers, Commission of the European Communities

US Stops Ivory from Somalia

In its first action taken to enforce the new African Elephant Conservation Act, the US Government, in response to a petition from WWF-US, imposed an emergency moratorium on all imports of ivory from Somalia, on 17 February 1989.

This action is an effort to help save Kenya's dwindling elephant population from destruction by poachers, many known to be of Somali origin. Kenya's largest elephant herds, in the Tsavo National Park which borders Somalia, now number less than 5000 where once there were 42 000.

The African Elephant Conservation Act, signed into law on 12 October 1988 (see Traffic Bulletin 10(1/2):1) directed the US Secretary of the Interior to establish a moratorium on the importation of raw and worked African Elephant ivory from all producing or intermediary countries that are not party to CITES. The new law also requires the USA to ban ivory imports from any intermediary country that purchases or accepts ivory that was taken illegally in its country of origin or that came from a country already subject to a US moratorium.

Information compiled by WWF-US shows that the Somali Government has sold or stockpiled 25 000 tusks in the last three years, although the country contained less than 4500 live elephants two years ago. Much of the ivory is known to have been smuggled out of Kenya with the complicity of Somali officials, moved overland from Tsavo National Park by Somali tribesmen, or transported up the coast by dhow.

The ban is intended to prevent Somalia's poached ivory from entering international trade. The purchase of Somali ivory by another nation, such as Hong Kong or Japan, would trigger a moratorium against that nation's ivory exports to the US market.

Sources: *US Federal Register, 3/24 February 1989;*
WWF-US News Release, 21 February 1989

African Elephant Conservation Co-ordinating Group

IUCN - The World Conservation Union, WWF (World Wide Fund for Nature), TRAFFIC, Wildlife Conservation International and the European Economic Community have, in co-operation with the CITES Secretariat, formed the African Elephant Conservation Co-ordinating Group. The purpose of the AECCG is to provide a co-ordinated approach between the member organisations in developing and implementing a global strategy to help conserve the African Elephant Loxodonta africana.

The aim of the strategy is to stop the drastic decline in African Elephant populations by eliminating the illegal ivory trade and by providing a means to help African countries to manage the populations on a sustainable basis. The actions identified in the strategy call for the expenditure of about US$15 million over the next three years. Field activities will focus on about 40 'baseline populations', selected to assure that the essence of the species and its range of habitats are conserved, and emergency holding action will be taken to secure the most threatened 12 or so such populations. Other activities will include improving trade control procedures, population monitoring and ivory trade studies.

The trade studies are innovative and are intended both to yield valuable insights into future efforts to bring the ivory trade to sustainable levels and to form a basis for decisions on the best ways in which to control the trade. Three studies are currently underway: an economic analysis of the ivory trade and the economic factors which influence it; an examination of the trade within Africa, including the carving industry; and a study of the international trade outside Africa. The results of these studies will be forthcoming in the next few months.

Biggest Ivory Haul in Botswana

The largest-ever contraband shipment of ivory in Botswana was confiscated by Customs officers at Kasane in Botswana, on the border with Zambia, in October 1988.

Concealed in a secret compartment of a container lorry that had crossed the Zambesi River from Zambia were 382 elephant tusks, 94 rhino horns, 3 African Python Python sebae skins, 3 Leopard Panthera pardus skins, 2 crocodile Crocodylidae skins, a large amount of ivory jewellery, carved tusks and ivory sculptures, malachite items, and 3100 kg of cobalt from Zaire. The shipment has been valued at more than US$2 177 750.

Under the Botswana Customs and Excise Duty Act, the smugglers could have faced up to two years in gaol and fines three times the value of the goods. Yet, in November 1988, the owner of the lorry, Antonio Vieira of Johannesburg, South Africa, pleaded guilty in Francistown, Botswana, to a lesser charge of "conspiracy to effect an unlawful purpose" and was fined R6000 (US$2613). Similar charges against the driver of the lorry were dropped. According to a statement made to the court by Vieira, the shipment was consigned to a Chinese businessman, Ah Pong and Sons, in Pretoria, South Africa.

Ivory and rhino horn seized in Botswana

Diplomat's Ivory Smuggling Thwarted in Tanzania

In early January 1989, a senior diplomat, who had just completed five years service as Indonesia's Ambassador to Tanzania, was detained for questioning there as he boarded a British Airways flight en route to Singapore, accompanied by his wife and a container load of elephant tusks.

In addition to the ivory, which comprised 184 raw tusks, 24 partly worked tusks and 82 carved figures, police also discovered carved ivory necklaces and walking sticks, 16 Ostrich Struthio camelus eggs, zebra Equus spp. skin handbags and two stuffed gazelles Gazella spp.

The ex-Ambassador, H. Joeseif, was released after questioning and left the country shortly afterwards.

Illegal Ivory in Kenya

Kim Jong Kyu, the owner of Kim's Shipchandlers Limited, in Mombasa, Kenya, was charged on 18 July 1988 for being illegally in possession of 110 pieces of tusks weighing 258 kg, and other items, including three Leopard Panthera pardus skins and a zebra Equus sp. skin, worth a total of US$5190. The outcome of the trial is not yet known.

Sources: *National Parks & Wildlife Management, Zimbabwe;*
The Observer (UK), 29 January 1989;
Nairobi Standard (Kenya), 20 July 1988

Specific CITES Reservations

St Vincent and the Grenadines:

When depositing its instrument of accession to CITES, the Government of St Vincent and the Grenadines entered specific reservations with regard to the Humpback Whale Megaptera novaeangliae and Hawksbill Turtle Eretmochelys imbricata (both Appendix I). These reservations entered into force on 28 February 1989, when St Vincent and the Grenadines' accession to CITES took effect.

Austria:

Austria has withdrawn its specific reservation entered with regard to the Sharp-nosed Crocodile Crocodylus cataphractus and the Estuarine Crocodile Crocodylus porosus, listed in Appendix I, as well as to all amendments to Appendices I and II adopted at the fourth and fifth meetings of the Conference of the Parties. The withdrawals became effective on 6 January 1989.

Source: *CITES Secretariat, Notification to Parties, No. 526, 31 January 1989*

Additions to CITES Appendix III

The Government of India has submitted to the CITES Secretariat the following list of species for inclusion in Appendix III:

Marmota caudata	Long-tailed Marmot
Marmota himalayana	Himalayan Marmot
Canis aureus	Golden Jackal
Vulpes bengalensis	Indian Fox
Vulpes vulpes griffithi	-
Vulpes vulpes montana	-
Vulpes vulpes pusilla =377	-
Martes flavigula =380	Yellow-throated Marten
Martes foina intermedia	Central Asian Stone Marten
Mustela altaica	Mountain Weasel
Mustela erminea	Stoat
Mustela kathiah	Yellow-bellied Weasel
Mustela sibirica	Siberian Weasel
Arctictis binturong	Binturong
Paguma larvata	Masked Palm Civet
Paradoxurus hermaphroditus	Common Palm Civet
Paradoxurus jerdoni	Jerdon's Palm Civet
Viverra megaspila	Large-spotted Civet
Viverra zibetha	Large Indian Civet
Viverricula indica	Small Indian Civet
Herpestes auropunctatus	Small Indian Mongoose
Herpestes edwardsi	Indian Grey Mongoose
Herpestes fuscus	Indian Brown Mongoose
Herpestes smithii	Ruddy Mongoose
Herpestes urva	Crab-eating Mongoose
Herpestes vitticollis	Stripe-necked Mongoose

=377 includes synonym Vulpes vulpes leucopus
=380 includes synonym Martes gwatkinsi

The listing of these species became effective on 16 March 1989.

Additions to CITES Appendix III ctd.

The Government of Colombia has submitted to the Secretariat the following species for inclusion in Appendix III:

Semnornis ramphastinus	Toucan Barbet

This listing will take effect from 28 May 1989

Source: *CITES Secretariat, Notification to Parties, 16 December 1988/27 February 1989*

New CITES Law in Singapore

The Endangered Species (Import and Export) Act 1989 came into effect on 17 March 1989 in Singapore. This Act enables implementation of CITES, to which it became a Party in November 1986.

Anyone who contravenes the provisions of the Act relating to imports and re/exports, may be fined up to SG$5000 (US$2500) and/or sentenced to one year in gaol for the first offence, and fined up to SG$10 000 and/or sentenced to one year in gaol for a subsequent offence.

Source: *Republic of Singapore, Government Gazette Acts Supplement, 17 March 1989*

Seasonal Ban on Live Animals into France

Between 1 November of each year and 31 March of the following year, the import into France (including transit) by air or sea of live animals of tropical species will be banned.

This ban is not applicable to fish; certain bird species for zoological gardens; pet animals accompanying their owners and not destined for sale; and animals sent to airports with appropriate premises (the Basle-Mulhouse airport is presently the only one suitably equipped).

The Management Authority of France urges exporting countries to help it to implement these provisions.

Source: *CITES Secretariat, Notification to Parties No. 523, 31 January 1989*

CITES Law Strengthened in Austria

On 30 December 1988 a new amendment to the Austrian CITES implementation law came into force. The law enables the Minister of Commerce to make the permits and certificates issued by his Ministry subject to any further conditions he feels are necessary for the improvement of CITES implementation. Those not abiding with these specific conditions could receive the same penalties as CITES offenders.

More significantly, the period during which a CITES violation may be prosecuted has increased from six months to three years after the offence took place.

Source: *TRAFFIC(Austria)*

Macao Prohibits Internal Trade in Rhino Horn and Musk

Traders in the tiny Portuguese territory of Macao on southern China's coast were some of the largest importers of African rhinoceros horn and hide in the mid-1980s. The traders re-exported most of these two rhino products to mainland China and to Hong Kong; the remainder they sold to the owners of Macao's traditional Chinese medicine shops for local consumption. In 1987, 65% of the 34 pharmacies surveyed in Macao offered rhino horn for sale, and 56% had rhino hide. These percentages were among the highest recorded for retail trade in rhino products anywhere in South East Asia.

In order to restrict the availability of rhino products and to try to curtail further trade internationally, the sixth meeting of the Conference of the Parties to CITES, in July 1987, passed Resolution Conf. 6.10 which urged Party states to ban their internal sales of rhinoceros products. On 24 March 1988, the Macao Government, through the Director of Economic Services in the Departamento do Comercio, responded by issuing an official circular (No. c.c. 13/88/DCO) in Portuguese and Chinese to the owners of pharmacies, stating that all internal trade in rhino commodities would be prohibited on 1 July 1988:

> " ... We hereby give notice to all those with musk and parts of the rhinoceros that they should get rid of them without fail by 1 July, it being forbidden from that date to trade and keep stocks of these products."

This circular was followed up with a media campaign, informing the general public of the importance of not purchasing rhino horn and hide.

The Macao Government is to be congratulated for its new law, and it is hoped that other governments in Asia will also soon implement CITES Resolution Conf. 6.10 which should greatly enhance efforts to conserve the remaining 10 500 rhinos in the wild.

Source: *Esmond Bradley Martin and Direccao dos Servicos de Economia, Departamento do Comercio, Macao*

Rhino Horn Smugglers Arrested in the USA

Three US citizens were arrested on 2 November 1988 for conspiring to import rhinoceros horns and specimens of other protected wildlife species illegally into the USA from South Africa. Three South African nationals were charged for their roles in the conspiracy.

John Lukman, a US citizen, was arrested on his return from South Africa where he had travelled to obtain rhino horns from a friend and member of the South African Defence Force, Marius Meiring. According to a Press Release issued on 3 November 1988 by the US Department of Justice, the defendants had agreed to sell five to seven rhino horns for US$40 000 each to a Fish & Wildlife Service (USFWS) undercover agent. At the time of his arrest, Lukman was carrying two rhino horns which he had apparently obtained, with the help of Meiring, from Angola the previous week. A further 14 rhino horns were being transported to Namibia from Angola in South African military vehicles for subsequent shipment to the USA.

The investigation began in February 1988 when the USFWS learned that Lukman was attempting to sell a leopard mount. Between April and June that year, in violation of both the US Endangered Species Act and CITES, Lukman sold to an undercover agent two Leopard Panthera pardus rugs for US$2000, a Leopard head mount for US$550 and a Cheetah Acinonyx jubatus rug and Cheetah head for US$2400.

Rhino Horn ctd.

Subsequently, Lukman indicated that he could obtain an "unlimited" number of rhino horns and AK-47 machine guns from Meiring, who was on active duty in Namibia, and from Mrs Meiring. As the investigation progressed, two other US citizens, Mary Ann McAllister and Russell Beveridge were found to have assisted Lukman in the importation and distribution of the illegally imported goods.

Another member of the South African Defence Force, Sgt. Major Waldemar Schutte, illegally smuggled a rhino horn into the USA, in August 1988, for which he was paid US$1800 by Lukman. The horn was purchased for US$40 000 by the undercover agent.

An affidavit filed in the US District Court by the principal undercover agent, Richard Moulton of the USFWS, disclosed that the horns involved in this case were apparently obtained from rhinos killed by South African army troops in Angola.

The six defendants have been charged only with conspiracy to commit an offence against the United States. This charge carries a maximum term of five years imprisonment and a US$250 000 fine. The US Attorney has stated that he expects each will be charged with several other offences, including violations of federal wildlife laws and firearms and Customs statutes. Charges may also be brought against other, unidentified, individuals.

Source: *Press Release, US Dept. of Justice, 3 November 1988*

USA Declares African Chimpanzees "Endangered"

A US proposal to change the legal status of the Chimpanzee Pan troglodytes and the Pygmy Chimpanzee Pan paniscus in Africa from 'threatened' to 'endangered' under the Endangered Species Act, is expected to come into effect at the end of April 1989. From that date, the import into the USA of any wild-caught or captive-bred specimen from Africa will be prohibited.

The proposal, submitted to the US Fish & Wildlife Service (USFWS) in 1987 by primatologist Jane Goodall, WWF-US and the Humane Society of the United States, requested the reclassification of the chimpanzees as 'endangered', citing as justification the drastic decline of chimpanzee populations in Africa due to massive habitat destruction, population fragmentation, excessive local hunting, and international trade. The international biomedical establishment was identified in the proposal as one of the greatest threats to the continued existence of wild chimpanzees, because demand for animals for research was encouraging poachers.

The National Institutes of Health opposed reclassification on the grounds that it could permanently preclude medical research on chimpanzees now in captivity in the USA. The new ruling thus does not include those chimpanzees outside of Africa, which will remain available for essential medical research. But by including captive chimpanzees in Africa within the 'endangered' classification, the USFWS will forestall the possibility for wild-caught animals to be laundered through "captive" colonies and imported into the USA pursuant to less restrictive regulations.

Sources: *US Federal Register, 24 February 1989;*
WWF-US News Release, 27 February 1989

Australian Sea Snake Utilization - an Update

by Frank Antram, TRAFFIC(Oceania)

In April 1988, the Western Australian (WA) Department of Conservation & Land Management issued a letter of warning to a company which had possession (contrary to Section 16A(1) of the WA Wildlife Conservation Act 1950-1980) of sea snake skins, allegedly 'imported' from the Northern Territory. The specimens were allegedly from 'incidental kills' in the Northern Territory prawn fishery, and tanned illegally in WA. The numbers and species involved were 1 Hydrophis sp., 10 Aipysurus eydouxii, 10 Aipysurus laevis, and 10 Lapemis hardwickii.

Also in April 1988, in a separate incident in WA, a prawn trawler, en route to Fremantle, was intercepted by a wildlife officer and found to have sea snakes in its freezer. The skins were allegedly for sale in WA, contrary to Section 17(2)(e) of the WA Wildlife Conservation Act. The numbers and species involved were: 1 A. laevis, 2 A. laevis pooleorum, 63 Hydrophis elegans, and 6 Hydrophis major. The case is still pending.

The WA government is considering allowing the 'importation' from the Northern Territory of 3000 sea snake skins (Department of Conservation & Land Management, pers. comm., February 1989). Whether or not 'importation' is permitted is presumably likely to depend on the outcome of current investigations in the Northern Territory. The Northern Territory government has received proposals to utilize sea snake skins based on the incidental catch by prawn trawlers in the Gulf of Carpentaria, and is establishing a research programme on sea snake populations, with a view to preparing a management programme (Conservation Commission of the Northern Territory, in litt., 6 March 1989).

In Queensland, sea snakes caught incidentally in prawn trawling operations have been utilized locally for some years. The status of this industry has been documented by Antram (1986). Currently, no overseas exports are permitted, under the Wildlife Protection (Regulation of Exports & Imports) Act 1982, because there is no Federally approved management programme.

The Australian National Parks & Wildlife Service (ANPWS) funded a study of the distribution, population densities and harvest potentials of sea snakes in northern Queensland (Anon., 1986). One conclusion of this study (Heatwole & Burns, 1987) was that sea snakes are generally long-lived species with low reproductive rates and, consequently, have low 'usability' ('usability' being the level of exploitation which can be achieved and maintained without endangering the species). It was recommended that target species should be restricted to H. elegans and L. hardwickii, as both these species are numerically abundant, widely distributed, and exhibit relatively high reproductive potentials. It was further recommended that the total number of skins taken should be restricted to 5000 of each of the two species. This number (10 000 individuals) is estimated to represent about 2% of the total sea snake population in the Gulf of Carpentaria. The report recommends that annual monitoring of catch rates will be necessary as it is uncertain what effect a continuing annual harvest would have on future stocks.

However, the Northern Prawn Fishery Management Committee (NORMAC), at its 14th meeting held in Canberra on 1-2 July 1987, "resolved to totally oppose the commercial targetting of sea snakes in the Northern Prawn Fishery", after representations by the Queensland Fish Management Authority (Anon., 1987). It appears, though, that NORMAC is not opposed to the export of skins taken incidentally during prawn trawling. The issue of sea snake skin exports was again considered by NORMAC at its 16th meeting held in Cairns on 17 February 1988. After an address by the major tanner of sea snake skins, and the withdrawal of objections by the Queensland Department of Primary Industry, NORMAC resolved to advise ANPWS that it could see no reason why the proposal to export skins could not be considered (Anon., 1988).

At present, the Queensland Fisheries Department issues three licences to processing establishments for obtaining sea snakes taken as a by-catch: one for 20 000 from the Gulf fishery and two for 10 000 each from the eastern seaboard (Queensland Dept. of Fisheries spokesman, pers. comm., March 1989). Heatwole & Burns (ibid.) estimate that approximately 117 000 sea snakes were taken during tiger prawn trawling operations in the Gulf in 1986; of those, an estimated 49 000 died. They also state that the major factor influencing mortality is trawl-time, and it appears that banana prawn trawling is not as detrimental to sea snake populations as tiger prawn fishing (in which the trawl-time is significantly longer).

Heatwole & Burns (ibid.) conclude their report by saying that the present catch limit set by Queensland Fisheries (i.e. 40 000) is about equivalent to the number of snakes that are dead by the time they reach the sorting tray, and that these animals are potentially usable without adding further to the pressure on the snake populations. However, they point out that that a policy of using only incidentally killed individuals is not easily enforceable, and the long-term effects of commercial prawn trawling on sea snake populations are unknown. They may already have been adversely affected by prawn trawling operations.

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Jellyfish Trade Set to Start

According to the Sydney Morning Herald (29 June 1988), a company in Sydney, Australia, Down Under Marine Exports, has recently started sending small amounts of salted, dried jellyfish Catostylus mosaicus to Japan. The company is reported to be trying to gain a foothold in a lucrative market which is estimated to be worth A$10 million (US$8 M) a year, and which is currently supplied by China, Indonesia, the Philippines and Thailand. The Australian Government has provided the company with a grant of A$88 000 to develop the trade.

Source: *TRAFFIC(Oceania)*

The Economic Value of Insects

by Cecilia Lindberg, Department of Zoology
University of Oxford

This report represents the result of research carried out by the author at the World Conservation Monitoring Centre, during July and August 1988.

The article is a departure from the Traffic Bulletin's general practice, in the past, of reporting on international and national wildlife trade. However we publish it both because we feel it will be of interest to a large number of readers and because it reflects the interest of WTMU/WCMC and the TRAFFIC Network in wildlife utilisation and the economic value of wildlife, an interest which is not widely appreciated.

This short paper makes no attempt at or pretence of being comprehensive but serves simply to provide a number of examples of the use of insects and their value to humans. In this way it is an illustrative introduction to the economic value of insects.

Some of the examples given refer to the success of certain introductions of exotic species, to areas where they do not naturally occur. We should anticipate readers comments by noting that we are well aware of the potential environmental risks of such introductions and nothing in this article should be taken as an endorsement of the practice of introducing exotics. IUCN has prepared a position statement on the 'Translocation of living organisms' and this is available from IUCN, The World Conservation Centre, Avenue du Mont Blanc, CH-1196 Gland, Switzerland.

INTRODUCTION

Many insects are of economic importance to mankind. Although a large number are pests, there is also a multitude of beneficial species which are utilized for pollination, biological control and the production of dyes, colourings, fibres and food for human consumption.

The rapid rate of global habitat destruction means that many insect species are threatened with extinction. The fact that insects are economically valuable is only one, but an increasingly significant, reason to ensure their survival. Not only is it vital to save insects that are valuable today; by preserving the existing wide range of insect forms we can ensure the availability of a large potential source of insects for future needs.

The following series of case studies indicates the economic benefits of not only wild insects, but also a number of domesticated forms, for which there is far better documentation, and which may provide an insight into the potential value of non-domesticated species. Although it is difficult to give exact financial values in many cases, examples are given that might indirectly serve to give some idea of the value of a particular insect.

NATURAL CONTROL

Forest Tent caterpillars

An example of a naturally controlled organism is the caterpillar of the Forest Tent Moth Malacosoma disstria in Canada.

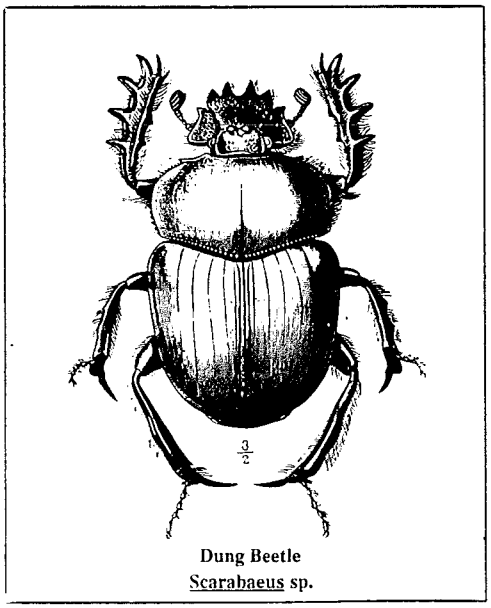
In 1977, an area the size of England was almost totally defoliated by the Forest Tent caterpillar. It shows preferences for Trembling Aspen Populus tremuloides, oak Quercus and Sugar Maple Acer saccharum, but will eat almost any broadleaved tree or shrub. Host trees are often completely stripped of foliage during 'outbreaks' (when the caterpillars are extremely abundant) which usually last for 3-6 years at any one location. Although the caterpillar does not cause lasting damage to forests, it does reduce the radial growth of trees: in 1977 this resulted in the loss of approximately 2000 million (M) cubic feet of wood. The damage to the foliage of commercial Sugar Maples resulted in reduced quality and quantity of sap harvested in 1978. The damage also generally weakens trees and makes them more susceptible to natural diseases.

The most important predator of the Forest Tent caterpillar is the Flesh Fly Sarcophaga aldrichi, which eats into the Forest Tent cocoons and destroys developing pupae. It has been considered preferable to tolerate some damage to plants rather than introduce chemical control, since insecticides may harm natural enemies before the pest itself is affected, so that low levels of insecticide may actually aggravate the pest problem. The possibility of supplementing the Flesh Fly with biological control, e.g. in the form of viral or bacterial pathogens, has been investigated.

Dung beetles

The activity of dung beetles Scarabaeidae not only reduces dung fouling of pastures but their tunnelling and spreading of dung also improves soil structure, rain infiltration and nitrogen retention, and helps to control dung-breeding flies and parasitic worms.

In Australia, the native dung beetles are adapted to make use of marsupial droppings and cannot cope with those of the more recently introduced cattle. As a result, extensive fouling and reduction of pasture areas has occurred and fly populations, especially those of the Bush Fly Musca retustissima, rose to pest levels. With 30 M cattle, each producing approximately 12 pats of dung (each of 0.4 kg dry matter) a day, enough dung was deposited annually to cover a million hectares. Although this constitutes only 0.13% of the total area of Australia, it caused considerable inconvenience to individual farmers. Under the prevailing conditions, pats could take up to three years to disintegrate fully, covering valuable grazing land (in practice this includes also the area surrounding each pat that is avoided by grazing animals) while the nutrients in the dung could not be released as it slowly dried.



Dung Beetle
Scarabaeus sp.

During the 1960s, dung beetles from Africa were introduced into Australia and, having evolved in close association with bovines, were found to be effective in dispersing dung, and thus controlling fly populations.

Calculations have shown that under a density of 1-2 cows per hectare, effective dung beetles might increase the area accessible to grazing by up to 4%. When beetles are well established and fully active in an area, each newly dropped pat may be colonized by several hundred individuals, causing it to be dispersed within 24 hours.

In a recent report (McCracken, 1987), the effect of Ivermectin on the dung fauna is discussed. Ivermectin is an extremely potent anthelmintic agent which is used against gastro-intestinal parasites of livestock and various agricultural and household pests. It is also effective against arthropods and, therefore, following treatment with Ivermectin, cattle faeces may contain enough drug to prevent the development of certain fly larvae. However, in the UK there has been concern that it may adversely affect dung-degrading insects, threatening endemic species, which might cause fouling of pasture land and hence also affect plants. Which insects are killed depends on the degree of contamination, which in turn is affected by the method of administration of the drug, since at lower concentrations some Diptera are killed while dung beetles are not. Hence, if the use of Ivermectin is not carefully controlled, it seems possible that the problem prevailing in Australia prior to the introduction of African dung beetles could be repeated in the UK.

BIOLOGICAL CONTROL

Water Fern

The free-floating Water Fern Salvinia molesta is regarded, together with the Water Hyacinth Eichhornia crassipes as one of the world's most undesirable aquatic weeds. It is indigenous to south-east Brazil but has been spread, intentionally and accidentally, by man in the tropics over the last 50 years and is now found in 22 countries. It is a serious problem in a number of African countries as well as in Australia, Fiji, India, Malaysia, Papua New Guinea and Sri Lanka.

The spread of the plant is facilitated by its extremely rapid vegetative propagation which occurs by growth and fragmentation. It can double its dry weight in as little as 2.2 days under optimal conditions. Since it is free-floating it can be moved by winds and currents or carried by boats to invade new areas. Its spread is also favoured by the creation of stagnant and relatively nutrient-rich water bodies such as reservoirs.

Due to its rapid growth, chemical control of S. molesta is uneconomical. It has been estimated that, to reduce and keep the Salvinia infestation to less than 10% of the water surface in the Sepik River flood plain (Papua New Guinea), one of the worst hit areas, an initial outlay of US$1 M, followed indefinitely by an annual US$500 000 would be required. Conversely, biological control has clear economic and environmental advantages over other methods of control and could be achieved at a cost of US$100 000 to US$500 000 over 2-3 years.

Research has revealed the weevil Cyrtobagous salviniae to be a suitable control agent and it has now been successfully introduced into several countries, including Papua New Guinea. The weevils have so far caused no detectable deleterious effects.

Although no exact figures are available, the great value of this control method can be realised when considering the advantages brought about by reduction of S. molesta infestations.

Prior to the introduction of Cyrtobagous salviniae in Papua New Guinea, in 1983, 250 sq. km of the water surface in the Sepik River flood plain were covered with dense mats of S. molesta. The plants prevent the passage of large diesel-powered boats and even a single layer severely impedes paddle-powered canoes. In this area, which is almost devoid of roads as a result of annual flooding and extensive swamps and waterways, the Salvinia infestation posed a major threat to the existence of 80 000 people. The dense Salvinia mats prevented transport by water to markets, medical assistance and schools and restricted access to drinking water by humans, domestic stock and wildlife. In addition, irrigation and drainage canals were blocked and during floods great mats swept fences and other light structures before them. S. molesta is also an important weed of rice and it harbours a host of vectors of human diseases such as schistosomiasis (bilharzia). By cutting off light to submerged plants, the mats depress oxygen concentrations and increase carbon dioxide and hydrogen sulphide levels beneath, which can lead to the death of most of the benthic fauna.

The staple carbohydrate of the Sepik flood plain people is obtained from the pith of the Sago Palm Metroxylon sp., and use of canoes is vital for harvesting trunks and towing them from swamps to villages. The developing Saltfish Tilapia Sarotherodon mossambicus industry has provided suitable protein and income for the native population and is a viable rural industry of considerable significance to the country's programme for rural advancement. However, in 1979 it was estimated that the yield from this industry was 30% less than it could have been, due to the interference by S. molesta and this decline also has national significance since there is a need for a protein source.

In addition the Salvinia infestation interfered with the development of a promising tourist industry based on river journeys in luxury house boats, and limited access to lakes adjacent to the river. Fouling of bathing beaches also occurred and swimming, water skiing and other water sports were prevented. The blockage of waterways will also interfere with the movement of any other boats in the river system and this could affect other potential development projects, such as proposals to ship copper concentrate by barge from proposed copper mines upriver.

Although attempts have been made to make use of the huge biomasses of Salvinia (e.g. as compost, mulch and cattle fodder and for the generation of biogas and treatment of sewage effluent), the solution is clearly eradication. Following release of Cyrtobagous salviniae in May 1983 the 250 sq. km area covered by S. molesta had been reduced to 2 sq. km by August 1985. The weevil Cyrtobagous salviniae has now been successfully introduced into several other countries, notably India, and has been providing control in Australia since 1981.

Leafy spurge

The Leafy Spurge Euphorbia virgata, is a herbaceous perennial of European origin that has become a pest species in North America. It is particularly prevalent on the Canadian prairies and in north central USA.

Euphorbia virgata is unpalatable to most grazing animals except sheep, and tends to displace other herbaceous vegetation. Investigations in Canada revealed that there was 65-72% less grass within E. virgata stands than just outside. In Canada there are active programmes for its control and in 1979 at least US$150 000 a year were spent on control. In 1982, in Saskatchewan, the full cost of treatment of E. virgata was US$640/ha since the stands were scattered or on rough terrain. The chemicals used were expensive and had harmful ecological effects. However, the discovery of Picloram (4-amino-3,5,6-trichlorpiclinic acid) lowered the cost to US$140/ha and had the additional benefit of leaving grass cover rather than bare patches of ground. Despite these successes, the chemical control programme has not been particularly effective; while E. virgata had disappeared on cereal land under normal cultivation and with the application of 2,4-D, the infestation on uncultivated land had more than doubled after 30 years of chemical control. There is also the risk of contaminating the ground run-off water if chemicals continue to be used on a large scale.

Attempts have been made to find a suitable biological control agent for E. virgata. It is necessary to find such a species whose target is restricted to E. virgata, since there are a number of spurges in North America to which damage should be avoided: E. antisyphilitica (a source of high quality wax in Mexico), E. pulcherrima (the ornamental Poinsettia), E. lathyris (a plant suggested as a source of hydrocarbon) and native North American spurges in general. Investigations have revealed the existence of five flies of the genus Pegomya which appear to be restricted to a few species of Euphorbia. Other insect species have also been tested and various releases have been made although none has yet been entirely successful.

POLLINATION

Bees

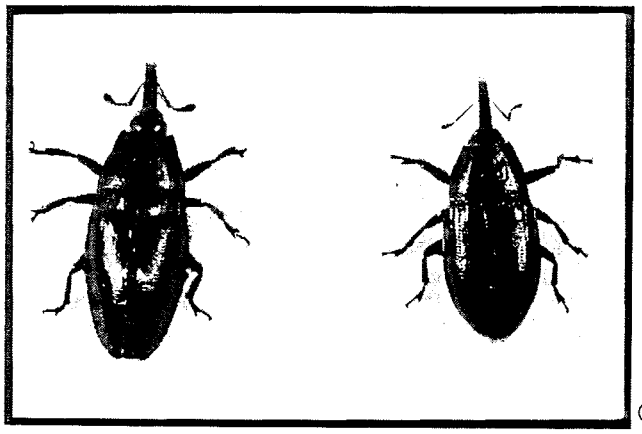
An important ecological role of the Honey Bee Apis mellifera and various other bee species is in the pollination of both wild and crop plants. Bees are the major pollinators since, except for a few wasps and beetles, only bees depend exclusively on pollen and nectar for food throughout their life cycle. Their co-evolution with flowers, shown by many morphological and behavioural adaptations, makes them more efficient at flower utilization than most other organisms. Not only do bees pollinate crops, they also help to maintain existing natural diversity since a huge number of flowering plants rely on their activities for reproduction.

The low fecundity of bees, which produce only a few offspring that are carefully looked after, means that they are very slow to recover from insecticide sprayings and other disturbances, such as unfavourable weather. This reduced fecundity also results in less genetic variability than in other insects, causing bees to be much less likely to develop resistance to pesticides. In the USA, for example, the number of A. mellifera colonies has been reduced, mainly as a result of pesticide treatment. In the UK, changing agricultural practices, involving the disappearance of open farmland with clover and flowers, reduction of pasture areas and of bees' favourite trees (especially lime Tilia and Sycamore Acer pseudoplatanus), the shrinking of moorland with its consequent disappearance of heather, and the removal of hedgerows, all serve to endanger the existence of many bumble bee Bombus species. Two of eight species of Bombus are now extinct in the UK.

It has been estimated that about US$3000 million-worth of food crops are pollinated annually by A. mellifera. In addition, Bombus spp. help to pollinate crops such as Alfalfa (Lucerne) Medicago sativa more effectively since they work faster and over a longer period than A. mellifera, will come out in worse weather conditions and have larger, furrier bodies that transmit pollen more readily, especially on certain varieties of apple and plum. According to scientists at Rothamsted Experimental Station, UK, Oilseed Rape Brassica napus gives higher yields if pollinated by bees than if it is self-pollinated. Pollination by bees also results in the pods ripening more evenly so that all seeds can be harvested at the same time. The increased acreage used for Oilseed Rape in the UK has helped A. mellifera since it is a good source of honey, although this also has its problems; the resulting honey is somewhat bland and crystallizes rapidly so must be removed from the combs almost immediately.

Two species of solitary bee are also used commercially for Alfalfa pollination in North America, the Alkali Bee Nomia melanderi and the Leaf Cutter Megachile rotundata. The Blue Orchard Bee (probably Osmia sp.) has been found to be more efficient at pollinating fruit trees: 60 000 Honey Bees are required to pollinate one acre of almond trees, while 300 females of Blue Orchard Bee would evidently be sufficient.

A study by the US International Trade Commission revealed that, of the total income from beekeeping earned by 118 commercial beekeepers in various states from 1971 to 1975, the proportion derived from pollination fees averaged 7.9%. It was also estimated that the total value of crops resulting from pollinating activity in 1980 approached US$20 000 M, which can be compared with US$140 M worth of honey and beeswax produced. This implies that the activity of bee pollinators is worth over 140 times the value of honey and beeswax, on which most beekeepers must make their living. A study by Scott and Winston (1985) indicated that the best income is obtained if a combination of colony management for pollination, honey production and bee production is used. The profitability per colony was found to vary between US$109 and US$14.36. Not included in these calculations are the undocumented contributions of various bee species, both feral and domesticated, to crop plants and thousands of wild plants.



Weevil
Elaeidobius kamerunicus

Oil-palm Weevil

The Oil Palm Elaeis guineensis, a native of West Africa, is now grown commercially in many tropical countries. Until 1977, it was thought to be wind-pollinated because of its very small and inconspicuous flowers and the absence of any obvious insect pollinators. In Malaysia, where the E. guineensis has been introduced, the mechanism for cross-pollination needed to be supplemented by hand methods, although this has not been found necessary in West Africa. Following a study by the CAB International Institute of Biological Control in Cameroon, Syed (1979) demonstrated the importance of weevils (Coleoptera; Curculionidae) in the cross-pollination of the flowers. In Malaysia, only one species of moth pollinates the palm flowers and it is not very efficient. During the wet season, very little wind pollination can occur and thus in the absence of pollinating insects this mechanism is insufficient. To overcome this problem, it was decided to introduce a weevil to pollinate the E. guineensis, and the weevil Elaeidobius kamerunicus was chosen since it carried the largest number of pollen grains. Specimens were introduced into Malaysia in February 1981. These weevils cause more fruit to be produced since more flowers in each cluster turn into fruit. This results in a higher proportion of kernel oil which is more valuable. Following introduction of the weevil, yields increased by approximately 20% compared with hand-pollination. Hand pollination eventually became unnecessary and was phased-out, resulting in annual savings estimated at US$6 M. In 1983, it was estimated that the introduction of E. kamerunicus in Malaysia was worth roughly an extra US$115 M a year to planters there.

There was a dramatic increase in global production of palm oil between 1981 and 1982 followed by a fall in output in 1983. This was due mainly to a decrease in Malaysian production, partly as a response to drought conditions in the early part of 1983, but it also appeared to be related to further adjustment by E. guineensis to the influence of E. kamerunicus. This weevil has now been successfully introduced into Indonesia (Sumatra), Papua New Guinea, the Solomon Islands, Sri Lanka and Thailand.

INSECT PRODUCTS

Two important products derived from insects are honey and silk. These subjects have been thoroughly covered in a number of publications, notably by the UNCTAD/GATT International Trade Centre, and are therefore not addressed here.

Cochineal

The red dye 'cochineal' is obtained from the species Dactylopius coccus, a scale insect (Homoptera). There are two distinct forms of this species: the small, wild cochineal lives on prickly pear Opuntia and similar cactuses found in the USA from Florida to Arizona and New Mexico, and south into the drier parts of Mexico and central and South America. The slightly larger, cultivated (domesticated) form requires human care for protection during the cold and wet season and is the only one that is commercially utilized, although both forms produce the red colour.

Only the females are used to produce colour and 70 000 insects are required to make approximately 0.4 kg of dye. The dye is used for fabric and wool dyes, food colourings, medicinal tracers, colour photography, paints, microscope stains and a few cosmetics. It is chemically classified as carminic acid. It may constitute up to 10% of the body weight of females and its bitter taste provides protection from predators.

The cochineal insect has a long history of domestication and domesticated specimens cannot survive in the wild. Towards the end of the dry season, farmers cut off insect-infested cactus pads and store them under shelter until the start of the next dry season when they are used to repopulate cactus plantations by hand. The insects are scraped off with sticks or knives and are killed by immersion in hot water which also dissolves their wax coating. They are then dried in the sun for several weeks.

Prior to the invention of synthetic dyes, in 1856, cochineal was the most important red dye, and cacti were introduced into Brazil, the Canary Islands, Colombia, Ecuador, India, Nicaragua, Portugal, and several other countries for the cultivation of cochineal. In the Canary Islands cochineal farms replaced many vineyards and traditional agricultural farms and, by 1868, more than 3000 tonnes of cochineal were exported from there each year. Only Peru, the principal country of production, and the Canary Islands continue to produce cochineal commercially for export.

Shellac

Lac is the crude resinous material from which commercial shellac is prepared. It consists of a natural body secretion of the scale insect Laccifer lacca which inhabits fig, banyan and other trees in Burma, Ceylon, India, and the Philippines.

Lac is produced by the tiny immature 'crawlers' as a protective shield and will cover branches completely as crawlers feed in close proximity to one another. In areas where lac is collected, branches covered with lac ('stick lac') are removed and ground to produce 'seed lac'. This is washed and dried and bleached in the sun and, after drying, it is heated in cloth bags over open charcoal fires. As the lac is melted, it is squeezed out onto the floor and is very quickly pressed and stretched into thin sheets which are then flaked. Shellac is prepared by dissolving this 'flake lac'.

In 1981, it was estimated that US$9 M-worth of shellac is used annually in the USA.

ENTOMOPHAGY

Insects have a high nutritional value, being quite rich in proteins and lipids, and can therefore be a very important supplement to the diet of certain peoples, including those who are otherwise vegetarian. The very wide range of insect species represents a large and for the most part unexploited food source. In many African countries, insects form a significant part of the indigenous people's diet where there are few domestic animals and fish. It has been found that insects account for approximately 44% of edible invertebrates in north-east Thailand and various species, chiefly of beetles, are sold in markets and are important protein sources for rural people in this region. In tropical South America, entomophagy (eating of insects) helps to compensate for the general deficiency in animal proteins, although insect-eating is gradually disappearing.

Attempts have been made in South East Asia to breed the caterpillars of the Common Mormon Papilio polytes (Lepidoptera), a tropical butterfly, in order to fight malnutrition. These caterpillars grow to optimal 'harvesting size' in 17 days if kept under suitable conditions. Since their only function is to feed and grow, no energy is wasted and their position as primary consumers minimizes the energy loss that occurs in all food chains. Another advantage is that they have a quicker food conversion rate (weight of plant material converted into weight of animal material) than any other popular animal used for food production.

In southern Africa, the caterpillar of the Mopanie Moth Conimbrasia belina has made impressive gains in importance as a product for sale in recent years. According to an estimate by the South African Bureau of Standards, annual sales through co-operative markets now amount to 40 000 bags, each of which contains 40 kg of traditionally prepared dried caterpillars. There is also a recently established 'mopanie worm' cannery at Pietersburg, northern Transvaal. The nutritive value of the dried caterpillars can be compared with that of traditional maize porridge:

	Mopanie worm	Maize porridge
Protein	62.0%	9.0%
Fat	6.3%	4.3%
Crude fibre	12.4%	no data

It has therefore been suggested that the consumption of Mopanie caterpillars could form an important protein source to supplement the predominantly cereal diet of many southern African people.

A similar example is found in Mexico, where 'guanos de maguey' are considered a delicacy. These are the caterpillars of one of the giant skipper butterflies (Lepidoptera: Hesperiidae) collected from the leaves of maguey plants. The caterpillars are sold fresh in markets and are fried before eating. They are also available in cans.

Although it is difficult at present to estimate the world consumption and value of edible insects, mainly because entomophagy is not very widespread, it is obvious that insects represent a largely unexploited food source with a nutritive value that compares favourably with many other foods.

CONCLUSION

It is very difficult to find any estimates of the economic values of non-domesticated insects except in isolated cases. Increasing awareness of the environmental dangers of using chemical control of pest species means that biological control is becoming increasingly attractive and important, but the vast areas and environmental complexities involved make it difficult to specify financial values. Similarly, the financial value of natural control of plants and animals by insects and of pollination by insects in the wild, remain largely undocumented.

The discovery of various synthetic alternatives has made many insect products redundant, or at any rate limited their importance; hence the world production figures are fairly insignificant and generally not widely published. Exceptions are for honey and silk, both of which are thoroughly documented in the literature.

Although information on the economic benefits provided by insects is in most cases not readily available, the case studies above do demonstrate to some extent the enormous monetary values involved, as well as indicating in some cases the large potential values that exist. This in itself argues in favour of the conservation of insects.

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Seizures and Prosecutions

UK

Leopard Skins

A resident of Kenya was sentenced to three months' imprisonment on 28 November 1988 for attempting to smuggle seven Leopard Panthera pardus skins into the UK, through Heathrow airport. Grace Mugo had attempted to bring the skins into the country in wicker baskets.

This is the second occasion only that a UK court has imposed a custodial sentence for an endangered species smuggling offence.

Source: Portcullis, January 1989

Ibizan Wall Lizards

At Bristol airport, a British citizen returning to the UK from Ibiza, Spain, was found to be carrying a suitcase containing 500 Ibizan Wall Lizards Podarcis pityusensis. Most of the Lizards, mostly young or sub-adult, were still alive and have been returned to their country of origin and released into the wild. The animals are worth an estimated £30 each, a total of £15 000 (US$25 500). The accused is to stand trial.

Source: The Times (UK), 17 December 1988

BELGIUM

Coral

On 12 October 1988, 3.1 tons of stony coral loaded on a container which came from the Philippines, were confiscated at Antwerp harbour, Belgium. The seizure was carried out by the Customs investigation service, in close co-operation with the Belgian CITES Management Authority. The coral was exported by Platow, a company based in Hamburg, F.R. Germany, and destined for a well-known shell and coral importer, Leduc in Liège, Belgium. The shipment consisted entirely of CITES Appendix II species, including Pocillopora spp., Tubipora spp., Seriatopora spp., Stylophora spp., Acropora spp. and a clam Hippopus hippopus.

The export of coral from the Philippines has been prohibited since 1 May 1987. The CITES export permit accompanying the shipment was found to be a forgery.

Reptiles, Cat Skins, Ivory . . .

29 live reptiles were seized at a shop in Brussels in December 1988. The species included the Common Chameleon Chamaeleo chamaeleon, listed in Annex C1 of EEC Regulation 3626/82 (treated as an Appendix I species within the EEC); 2 West African Dwarf Crocodiles Osteolaemus tetraspis (CITES App. I); 15 Nile Monitors Varanus niloticus; 7 African Pythons Python sebae; 4 Yellow Anacondas Eunectes notaeus. All had been imported from the Netherlands, Zaire and Thailand without the proper documents.

In January 1989, a handbag made from Leopard Cat Felis bengalensis, sent through the post from Thailand, was seized at the Customs clearing office of the Central Post Office in Brussels. It was not accompanied by any documentation.

In March 1989, approximately 250 small ivory carvings and three teeth from Leopard Panthera pardus, posted from Zaire, were seized by Customs at Charleroie.

Staff at TRAFFIC(Belgium) assisted as the official CITES identification experts in the Brussels seizures.

BELGIUM ctd.

Poison Arrow Frogs

On 15 March 1989, a German citizen was caught at Zaventem airport, Brussels, trying to smuggle 1000 Poison-arrow Frogs Dendrobates spp. and 40 wild orchids Orchidaceae spp. into the country from Costa Rica. None of the CITES-listed species was accompanied by appropriate documentation, and the shipment was seized by Customs.

The accused had personally collected the specimens, which comprised three different species, one of which has been identified as the Flaming Poison-arrow Frog Dendrobates pumilio. They were packed in 240 plastic boxes, and the orchids, both bulbs and plants, were found in hand luggage.

All the frogs were transferred to Antwerp Zoo; 50 were dead on arrival and a further 100 had perished by the following day. The collector, said to be a herpetologist and writing a book on Poison-arrow Frogs, claimed not to be aware of CITES regulations concerning these animals. Poison-arrow Frogs fetch DM50-80 (US$25-40) each on the German market, making the whole shipment worth at least US$25 000.

Compiled by TRAFFIC(Belgium)

ITALY

Stony corals and turtles

In November 1988, five live juvenile Kemp's Ridley Turtles Lepidochelys kempii, and several live specimens of protected stony corals, all without CITES documentation, were confiscated by the Forest Guard at Fiumicino airport, Rome. The animals were concealed in various shipments of live tropical fish arriving from South East Asia, and have been placed in an aquarium at Rome Zoo.

Jaguar and Clouded Leopard fur coats

A number of seizures by the Forest Guard, in collaboration with the Finance Guard and with the assistance of TRAFFIC(Italy), took place in September/October 1988. At a furrier's shop in Naples, a fur coat and two skins of Jaguar Panthera onca, pre-CITES, but without the necessary documentation, were confiscated; following an inspection of the furrier's files, a further two Jaguar coats, already delivered to customers, were also seized.

At another furrier's shop in Pontecagnano, in Salerno, a Clouded Leopard Neofelis nebulosa coat was confiscated. The furrier had declared that the coat was in his shop for alteration, but checks carried out showed this to be untrue.

Compiled by TRAFFIC(Italy)

THE NETHERLANDS

Frozen monkeys

On 16 February 1989, a shipment of frozen meat, which included four-and-a-half specimens of Savanna Monkey Cercopithecus aethiops, other unidentified primates, swine and antelope species, Aardvark Orycteropus afer and "nutria", was seized from a Zairian freighter at Amsterdam harbour. The consignment, weighing 400-500 kg and, without documentation, was on its way to private individuals in Belgium.

Both the Savanna Monkey and the Aardvark are listed in CITES Appendix II. ▷

Seizures and Prosecutions ctd.

THE NETHERLANDS ctd.

Rhino horn

A total of 98 old rhinoceros horns were confiscated at Rotterdam harbour in October 1988. The shipment was investigated by the inspection service (Algemene Inspectie Dienst) as there was no accompanying documentation. The shipment, from the Humbold University Museum in East Berlin, German D.R., had arrived by truck and was bound for Taiwan.

The horns are said to have originated from the private collection of a German emperor who shot the rhinos in the German colonies at the beginning of the century. Dutch experts agreed that the horns were 'old' but could not give an exact age.

A decision as to whether the horns will be destroyed or returned to Germany has not yet been made.

Parrots

During the period 14-15 January 1989, Customs officers at Schiphol airport confiscated six Eclectus Parrots Eclectus roratus and four Slender-billed Corellas Cacatua tenuirostris, both CITES Appendix II, which had been packed in plastic tubes. The origin of the birds, which had travelled via Malta, is unknown. A man has been charged.

Crocodile skins and ivory

450 crocodile Crocodylidae skins were seized in transit at Schiphol airport on 12 January. The skins had come from Nigeria and were on their way to a trading company in South Korea. Their declared value was US$1000.

Three trunks containing ten polished ivory tusks, en route from Taiwan to Nigeria, were confiscated at the beginning of February 1989.

Compiled by TRAFFIC(Netherlands)

ASIA

Asian Bonytongue

A man has been arrested for attempting to export Asian Bonytongues Scleropages formosus (CITES Appendix I) from Singapore to the Philippines, on 22 March 1989, without a permit. This is the first conviction under the new Endangered Species (Import and Export) Act 1989 (see page 27).

Tan Kok Jin of C & T Aquatics was fined SG$1000 (US$500) and the consignment of fish was confiscated by the Primary Production Department.

Macaws and tiger skins

In December 1988, two men were fined in Singapore for illegally exporting, importing and selling endangered birds and other animals without a permit.

Terence Loh Peck Soon, the proprietor of a bird-trading firm was caught exporting 12 macaws. He was fined SG$300 (US$152) for each bird.

Tan Hock Lye, a taxidermist, was caught by officers from the Primary Production Department selling a tiger Panthera tigris skin rug for SG$2500 at Golden Mile Tower. He was fined SG$500.

A shop proprietor has been fined SG$600 for illegally offering to sell tiger skins at his premises. Soh U Loh, who pleaded guilty to the charge, had offered the skins to a Briton at SG$4000 for a 2 m mounted tiger, SG$3000 for a 1.5 m mounted tiger, and SG$2200 for an unmounted tiger skin rug.

Sources: *Straits Times (Singapore), 8 April 1989/30 December 1988/ 3 March 1989*

1989 Ivory Export Quotas

Country	QUOTA No. of Tusks	Stocks*
Angola (n)	0	
Benin	0	
Botswana	1000	1113
Burkina Faso (N)	46 C	
Cameroon	298	110
C. African Republic	800	P
Chad	289	220
Congo	1042 °	350
Côte d'Ivoire (N)	x	x
Equatorial Guinea (n)	0	
Ethiopia	870	552
Gabon	0	
Ghana	0	
Guinea	0	
Kenya	0	
Liberia	0	
Malawi	238	178
Mali (n)	0	
Mauritania (n)	0	
Mozambique	17961	17710**C
Niger	0	
Nigeria	0	
Rwanda	0	
Senegal	0	
Sierra Leone (N)	0	
Somalia	0	
South Africa (Transvaal only)	2236	1508
Sudan	0	
Tanzania	0	
Togo	0	
Uganda (N)	0	
Zaire	x	x
Zambia	3772	4900
Zimbabwe	5000	

(n) non-Party
(N) co-operating non-Party
* ivory held from previous year above minimum export weight (i.e. government stocks, private dealers and provision for personal effects exports by private citizens). Stocks exceed quota for some countries where tusks are destined for internal use.
** pending confirmation
° includes 592 hunting trophies
x quota submitted, values pending confirmation
P pending receipt of documentation
C includes confiscated tusks from previous years

Parties are reminded that African countries with elephant populations are considered to have a zero quota until and unless the CITES Secretariat informs otherwise. Imports of raw ivory should be accepted from producer states only where the date on the export permit is for a year in which the producer state has a quota. A quota is accepted from a non-Party state only if it agrees to conform with all requirements of the CITES ivory trade control procedures.

Non-party states are eligible for trade in raw African Elephant ivory only if they have informed the Secretariat in writing of their intention to comply with the CITES ivory trade control procedures. The current list of these co-operating non-Party states that have agreed to comply is as follows:

Antigua	New Zealand
Côte d'Ivoire	Sierra Leone
Republic of Korea	Uganda

Source: *CITES Secretariat, Notification to Parties No. 36, 18 April 1989*

Fijian Clam Meat Seized in Australia

On 27 August 1987, the Australian Customs Service in Sydney seized 580 kg of giant clam meat (believed to be Southern Giant Clam Tridacna derasa and/or Scaly Clam T. squamosa (CITES Appendix II)). The meat had been illegally imported from Fiji, although it is understood that it had been destined for re-export to Taiwan. No export permit had been issued by Fiji (a non-CITES country), and while there is no legal requirement in Fiji for an export permit (T. Adams, Fiji Ministry of Primary Industries, in litt., 6 February 1988), one is required by the provisions of CITES. Moreover Australian law requires both import and export permits. The importer took legal action against the Australian Federal Government in an effort to reclaim the consignment, but later withdrew the action. The meat became forfeit to the Australian Government and, in May 1988, it was disposed of to Taronga Zoological Park, Sydney, and the Royal Melbourne Zoological Park, to be used as animal feed.

Fiji Bans Clam Meat and Beche-de-Mer Exports

Local exploitation of the giant clam Tridacnidae, or "vasua" as it is known in Fiji, has reportedly increased with the recent economic hardship being experienced in the country. An article on the "vanishing vasua", authored by the Ministry of Primary Industries, was published in The Fiji Times of 12 February 1988, appealing for restraint in the exploitation of giant clams.

On 13 September 1988, the Fiji Government decided to prohibit export of giant clam meat, and also impose new restrictions on beche-de-mer (Holothuroidea) exports. The Fisheries (Amendment) Regulations 1988, which came into force on 1 January 1989, were published in the Fiji Republic Gazette Supplement No. 40 of 16 December 1988. The new regulations stipulate that nobody shall export the flesh, including adductor muscle or mantle tissue, of Southern Giant Clam T. derasa, Scaly Clam T. squamosa or Small Giant Clam T. maxima (new Regulation 25B). The table below provides details of Tridacna meat exports for the years 1984-88. No exports took place during the period 1978-83 due to industry inactivity (Fiji Ministry of Primary Industries, in litt., 10 March 1989). (N.B. Other data accumulated during preparation of this report, suggest that the figures given in the table might represent a considerable underestimate of the size of the trade. However, it has not been possible to verify the accuracy of these data.)

New Regulation 25A stipulates that no person shall export, either in a natural or processed form, Holothuria scabra or any other holothurian species of a length less than 7.6 cm. Beche-de-mer harvesting is estimated to be far in excess of the maximum sustainable level (Fiji Ministry of Primary Industries, in litt., 15 February 1989). Beche-de-mer exports have risen from 62.5 tonnes in 1985 to 652.5 tonnes in 1988 (to end of November) (Fiji Ministry of Primary Industries, in litt., 10 March 1989). The new beche-de-mer regulations are only a preliminary measure until further research is done (Fiji Ministry of Primary Industries, in litt., 28 March 1989). The figure of 7.6 cm was arrived at from an experiment on shrinkage/weight loss estimates done by Fiji Fisheries Division (Ministry of Primary Industries) staff (Ministry of Primary Industries, in litt., 28 March 1989). The Fiji Fisheries Division, with assistance from the South Pacific Commission, is currently undertaking an intensive beche-de-mer survey.

New Regulation 30 provides exemptions from the provisions of Regulations 25A and 25B for animals produced by artificial spawning methods.

A spokesman for the Fisheries Division is quoted in a press release as stating that "the main reason for these restrictions is to protect the resources from overfishing." "Giant clams are likely to become extinct very shortly if we continue exporting at the present rate . . .".

Fiji exports of Giant Clam Meat 1984-1988
(including adductor muscle and mantle)
by weight - kilogrammes

Country	84	85	86	87	88
Australia*	4085	3105	1408	1750	2610
Canada					1313
Hong Kong		215	2200	2	1440
Japan	15				
New Zealand	1056			2	
Singapore				1405	
Taiwan		1824	2	4200	33140**
USA		421	720	410	200
Unknown	3				
Total	5159	5565	4330	7769	38703

Source: Fiji Ministry of Primary Industries in litt., 29 March 1989.

The species involved is believed to be almost exclusively Southern Giant Clam. Approximately 80% of the exports refer to adductor muscle.

* There has been no legal commercial importation into Australia during this period. It is believed that shipments consigned to Australia are probably transhipped to other countries (probably mainly Taiwan).

** includes 1400 kg of 'muscle/mantle/fish'

Abalone Fishers Convicted in Australia

On 11 January 1989, David Strachan, from Victoria, Australia, was convicted, on charges under the Victorian Fisheries Act 1968, of illegal Abalone Haliotis ruber fishing. He was sentenced to nine months gaol, fined almost A$13 000 and had his fishing equipment confiscated. Co-offenders, Craig Waugh and Kevin Wilton were fined A$8400 (US$6820) and A$5900 respectively.

The case was part of a harsh crackdown by the Victorian authorities on illegal fishing in the State. Concern about the level of exploitation of Victoria's fish resources, including major and recurrent breaches of fisheries legislation by people fishing without appropriate licences or taking undersized catches, resulted in an Abalone Task Force being established in January 1988, by the Department of Conservation, Forests & Lands (DCFL), to investigate the industry. During the week beginning 6 February 1989, officers from the DCFL, assisted by officers from New South Wales, South Australia and Tasmania, seized 1.8 tonnes of Abalone from various wholesalers, retailers and restaurants in Melbourne. It is expected that several people will be charged with various offences under the Fisheries Act relating to illegal possession of Abalone.

Licensed commercial operators in the abalone fishery in Victoria are subject to annual quotas, currently about 21 tonnes per diver (DCFL, pers. comm.). Most other States have also introduced quotas in an effort to limit the level of exploitation and ensure the conservation of stocks. In 1987/88, the national legal abalone harvest was estimated at 7610 tonnes (value A$11.3 million), the Victorian harvest amounting to 1900 tonnes (A$2.85 million) (DCFL, pers. comm.). Most of the harvest is exported, mainly to Japan.

by Frank Antram, TRAFFIC(Oceania)

A Strong Case for Hard Corals in CITES

by Sue Wells and Elizabeth Wood

"The corals constitute a chaotic collection of individuals, and the uncertainty as to what may be considered a species is the first problem that must confront anyone who happens to study corals....".

Thus wrote the early coral taxonomist Fredric Wood-Jones (1907), expressing a problem that continues to hinder coral reef workers and now conservationists some 80 years later. For scientists, the main problem is classification at the species level, but for many people the definition of the word 'coral' itself is not even clear.

The word 'coral' is loosely applied to a range of different animals in the Phylum Coelenterata (Cnidaria). Probably the most familiar corals are those in the order Scleractinia, which are often known as the stony or true corals. These are 'hard' corals which means that they have a hard, external skeleton of calcium carbonate. This is secreted by the individual coral animal or 'polyp' and is added-to as the animal grows. The scleractinians include most of the reef-building corals of the tropics as well as a number of non-reef building species found in temperate and deep tropical waters. Three other orders include hard corals. The order Coenothecalia comprises a single species of hard coral, Blue Coral Heliopora coerulea. More confusingly, two orders include many species of which only a few are hard corals: the order Stolonifera includes the monospecific family Tubiporidae with Tubipora musica, Organpipe Coral; and the order Athecata includes the families Milleporidae, the fire corals, and Stylasteridae, the lace corals. Many species of hard coral are colonial, and the skeleton is always non-jointed and has pores, cavities and tubes in which the individual polyps lie when the animals are alive.

The beautiful "precious" corals used in jewellery are in the order Gorgonacea. Unlike hard corals, they have an internal, calcareous skeleton which is jointed and has no pits or cavities since the living tissue lies outside it, even in colonial forms. Precious corals do not form reefs, although colonies may occur in large beds on the sea bottom or attached to rocks. Black corals, also prized for their beauty when polished, are in the order Antipatharia and have a flexible, internal skeleton made of a horny non-calcareous material. Finally there are soft corals and false corals. The former, in the order Alcyonacea, are fleshy and have spicules - sharp calcareous fragments - embedded in their tissues instead of a true skeleton. The false corals also have no skeleton but their soft parts resemble those of the scleractinian corals.

Hard corals, precious corals and black corals have been exploited by man for many centuries. Their continued, and in some cases increasing, value has led to the over-exploitation of some species. Coral reefs, built up over centuries by hard corals, are now under serious threat from pollution, siltation and other natural or human-induced environmental changes. It is now clear that action must be taken to develop strategies for the sustainable utilisation of corals and reefs, before a valuable resource is lost.

Unfortunately the management of coral harvesting often tends to fall between fishery departments and government agencies responsible for the exploitation of minerals or even building materials. The main sources of statistics on international trade are the official Customs statistics for the few countries which record coral as a separate commodity, and the CITES Parties' annual reports. The Food and Agriculture Organization of the United Nations (FAO) started to record coral production in 1988, because of the high value of the trade, even though the quantities involved may be small compared with the food fisheries. However, apart from a small involvement in the management of the Mediterranean precious coral fishery, FAO does not consider corals a priority, the policy being that food and agriculture must come first (Caddy, pers. comm. 1988). There are few international bodies to take the lead in this field, and attention has turned to the potential for using CITES. At the sixth meeting of the Conference of the Parties, in 1987, it was suggested that a working group should be initiated to address the issue of trade in coral prior to this year's meeting in October. Although no group was set up to tackle the whole issue, most aspects relating to trade have been dealt with over the last few years through the activities of TRAFFIC and its advisers, and a number of meetings involving coral researchers and international agencies, such as FAO.

Coral bleaching, Philippines © S.M. Wells

A particular concern has been whether the Berne Criteria for listing species in the CITES Appendices can be applied to marine invertebrates. The main problem is that, even when heavily exploited, marine invertebrates are unlikely to become threatened with extinction at the global level. This is because they produce large numbers of young which are dispersed as a planktonic phase in the ocean currents, often over enormous distances, resulting in very wide distributions for many species and comparative ease of replenishment for exploited stocks.

However, all black corals, 17 genera of hard corals and the giant clams Tridacnidae are already listed in Appendix II. This indicates the Conference of the Parties' acceptance that these groups can meet the Berne Criteria or that, if they do not, the level of trade and threats to these taxa are sufficiently serious that they should be listed nonetheless. Indeed, these species and the additional hard corals proposed for listing (see below) meet the Criteria in the following ways:

Table 1a Imports of CITES Appendix II listed corals 1986

Importing country	Quantity	Exporting country
USA	956284 raw corals	Philippines (54%), Indonesia (25%), Malaysia (13%), Taiwan (6%), Fiji (1.5%)
Japan	114652 pieces	Philippines and Indonesia
France	13750 raw corals	Philippines
Belgium	12500 'carvings'	Malaysia
Denmark	10625 raw corals	Philippines
UK	10120 corals	Philippines (4720 raw corals), Malaysia (5400 live corals)

Table 1b Imports of CITES Appendix II listed raw corals 1987

Importing country	Quantity	Exporting country
USA	1079687	Philippines (64%), Taiwan (17%), Indonesia (15%), Fiji (2%) and also Haiti, New Caledonia, Dominican Republic and Thailand
France	50871	Philippines
Netherlands	40179	Philippines
Belgium	6761	Philippines
Italy	1360	Philippines

Above figures exclude minor miscellaneous records, e.g. quantities listed by weight. Source: CITES annual reports

- there is some indication that they are threatened through decreasing population size;
- there are reports from various sources on habitat destruction and other threats;
- they are heavily traded, trade having increased over recent years.

Concern about the impact of the trade on all types of coral is evident from the number of exporting countries with legislation to control exploitation. Wood and Wells (1988) list nearly 30 countries with legislation or some form of management for coral exploitation and it is known that this list is not exhaustive. The study of corals is a recent branch of science and there is still comparatively little information available on coral life cycles and biology. For example, the synchronised spawning, on one night, of at least half the corals on the Great Barrier Reef in Australia, one of the most remarkable phenomena in the biology of corals, was discovered as recently as 1982. As recognised at a TRAFFIC workshop on the coral trade, held in the course of the sixth International Coral Reef Symposium in Townsville, Australia, in August 1988, it is essential to monitor and control the exploitation of corals through any mechanisms available, until better information is available to indicate sustainable yields. CITES is one such mechanism.

The following brief accounts of the current status of and trade in corals are based mainly on a report 'The Marine Curio Trade Conservation Issues', produced by the UK-based Marine Conservation Society, with funding from WWF-UK (Wood and Wells, 1988); additional references to the information given below will be found in this report.

Hard corals

Trade in hard, or stony, corals was reviewed by Wells (1985) when discussions were first underway about listing this group in CITES Appendix II. The review was updated by Wood and Wells (1988). The 1985 article provided trade figures up to mid-1984, taken mainly from Customs statistics, the only source for such data available at that time. At the fifth meeting of the Conference of the Parties to CITES, in April 1985, 17 genera of hard corals were listed in Appendix II. As a consequence, the annual reports to CITES now provide a valuable additional source of information.

Imports into the USA, the main importer of hard corals and the only country providing detailed data, show a marked increase since 1983 (Fig. 1). Imports reached a new record of 1456 tonnes (t) in 1988 according to US Customs statistics. Annual reports to CITES show that Japan and several European countries are also major importers (Tables 1a and 1b).

Despite legislation banning exports, the Philippines is still the main supplier. Collection and export of stony corals has been prohibited in this country since 1977, apart from a seven-month period in 1986 when the ban was temporarily lifted to allow the clearance of stockpiles. Nevertheless, the USA imported a record 641 t in 1987, and 601 t in 1988 from the Philippines, according to US Customs statistics. Table 1b shows that a number of countries were importing large quantities of CITES-listed coral from the Philippines in 1987. Philippine corals have also been offered to UK dealers recently: in February 1988, a letter was received from an American dealer in the Philippines wishing to export shells and corals to the UK:

"At this time the export of Sea Corals is banned by the Philippine Government but still some Corals are being shipped out. The shipper here will bribe the Fisheries and Customs officials."

Most recently, the Portuguese CITES Management Authority reported a consignment of six tonnes of coral arriving from the Philippines in March 1989.

Indonesian exports of hard corals started to rise in 1984 (Wells, 1985) and by 1986 exports had reached 425 t, most of which went to the USA. The Indonesian annual reports to CITES indicate large quantities being exported to the USA and Europe. In 1988, the USA imported nearly 480 t from Indonesia. Malaysia has also recently become an important supplier, as shown in CITES annual reports (see Table 1), and US Customs import statistics. Other important suppliers have included Fiji, Haiti, India, New Caledonia, and Taiwan. Imports into the USA from Fiji have increased from 54 t in 1985 to 133 t in 1988, the recent rise perhaps being an unfortunate consequence of the altered political situation in that country.

In addition to dried, bleached corals for the curio trade, an increasing amount of live coral is now being traded for marine aquaria. The only figures available are for the USA, from the US Fish and Wildlife Service import statistics. Recent imports into the USA are as follows:

1984	871 pieces
1985	6015 pieces
1986	40558 pieces
1987	20922 pieces
1988 (Jan-Oct)	39246 pieces

The main suppliers are Haiti, Indonesia, the Philippines, Singapore, Sri Lanka and Taiwan. The UK imported 5400 pieces of live coral in 1986 from Malaysia (Table 1).

Since the USA is currently importing over 1000 t of hard coral a year and since Europe and Japan are also evidently significant importers, it would not be unreasonable to assume that total world trade in raw corals is about 2000 t a year. Without further research it is difficult to know exactly what this represents in terms of coral colonies. Using existing known figures for the weights of coral skeletons, however, a very broad estimate of between two million and six million pieces or colonies can be calculated.

There are still few scientific studies on the impact of coral collecting on reefs (see Wells, 1985) but there are an increasing number of anecdotal reports of damage. Damage or potential damage has been reported in 44 of the 109 countries with reefs (UNEP/IUCN, 1988/89). The threat is particularly serious in countries such as the Philippines, where reefs are also under stress from siltation, pollution and intensive fishery and recreational use.

Collection of corals for the marine curio trade is particularly unnecessary. Ornamental corals are sold throughout the world as cheap souvenirs, bought on a whim and discarded as soon as they become dirty. Many of the holiday-makers who buy them are probably unaware that their souvenir is the skeleton of an animal - even less that it actually provides the essential structural framework of the coral reef they have just been snorkelling over. A single coral colony may appear relatively unimportant, but the accumulation of corals produces an ecosystem recognised in the World Conservation Strategy (Anon., 1980) as one of the World's 'essential life-support systems'.

A number of countries already prohibit exports of hard corals (see Wood and Wells, 1988) and other countries are bringing in legislation to this effect; in 1988, Malaysia notified the CITES Parties that coral exports from Sabah are illegal, and the 1988 Exports (Control) Order in India excludes coral from the list of wildlife which may be exported.

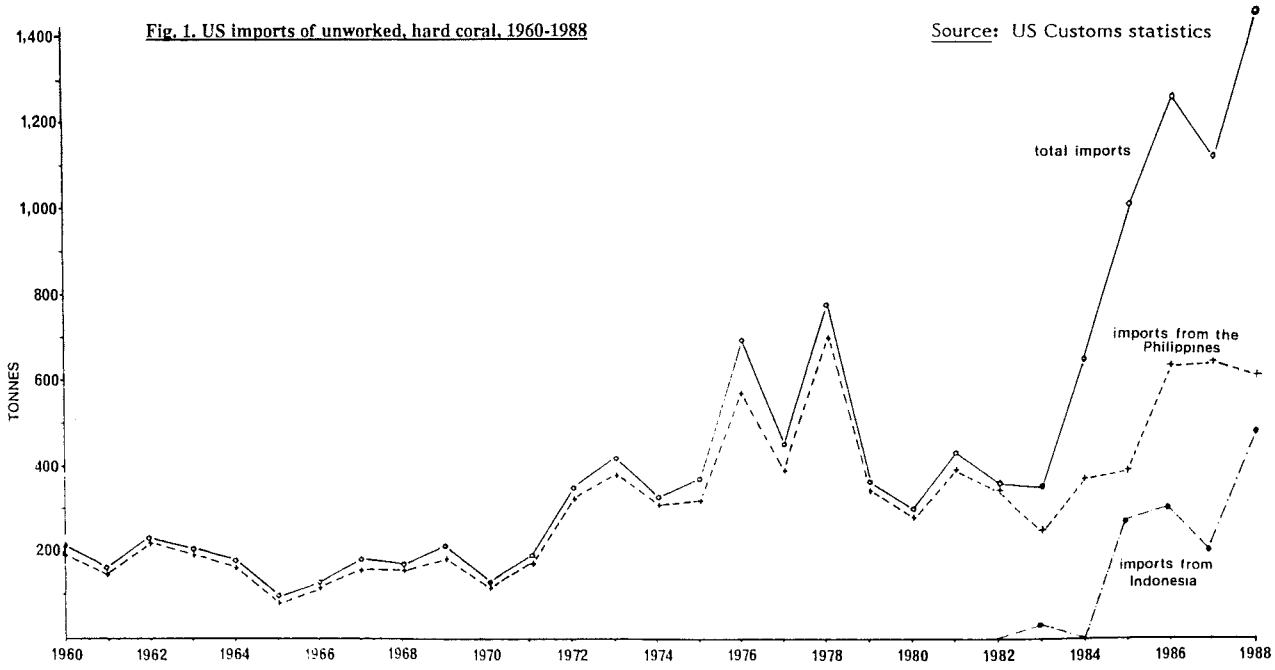
It is time that the importing countries did their bit. It is perhaps worth noting that the USA, the main coral importer prohibits coral collection in its own waters, and yet the Florida Keys, bordering the world's earliest established marine parks, are lined with shops piled high with coral imports from developing countries.

The listing of only 17 genera of hard corals in Appendix II of CITES presents considerable identification problems for Customs officers, and means that many genera important in the trade are not controlled. This year, at the seventh meeting of the Conference of the Parties to CITES, Israel, which has its own coral reefs, will be proposing the inclusion of all hard corals (i.e. the orders Scleractinia, Athecata, Coenothecalia and Stolonifera, as described above) in Appendix II.

Efforts are now underway to improve enforcement of the existing CITES regulations, particularly in relation to Philippine exports. The Philippine CITES Management Authority has stated that no permits have been legally issued by the Philippine Bureau of Fisheries and Aquatic Resources permit section since November 1986. Permits which have accompanied consignments since then have

Fig. 1. US imports of unworked, hard coral, 1960-1988

Source: US Customs statistics



Sun-bleached coral on sale in souvenir shop, S. Thailand
© S.M. Wells

therefore been issued in contravention of regulations. In November 1988, parties to CITES were requested to inform the CITES Secretariat and Philippine Management Authority of any such permits and to reject any applications for import of corals from the Philippines.

TRAFFIC(USA) has been trying to encourage improved enforcement of the Lacey Act with respect to corals in the the USA (Anon., 1988). The US Fish and Wildlife Service is now taking steps to improve enforcement and, on 31 January 1989, published a notice in the Federal Register stating that 'import into the USA of raw precious and semi-precious corals and of raw, processed, or finished stony corals from the Philippines or any of its territories or dependencies is prohibited.' In the UK, the Marine Conservation Society is lobbying for improved enforcement of CITES regulations with respect to corals, and is mounting a campaign to discourage the British public from buying marine curios.

Eventually it may be possible to devise sustainable management strategies. Grigg (1984) produced such a strategy for the hard coral Pocillopora verrucosa and estimated that in order to achieve a maximum sustainable yield, the minimum size of a colony at harvest should be 18 cm height. Similar studies have been carried out on the Great Barrier Reef and are now underway in New Caledonia, where it has been estimated that the current harvest is twelve times the calculated sustainable yield. A further model is provided by the fishery management plan for corals and coral reefs, drawn up by the US National Marine Fisheries Service for the Gulf of Mexico and South Atlantic reefs under US jurisdiction (these do not include any Caribbean reefs). Further research into the potential for sustainable management is urgently required. In the meantime attention must be paid to countries such as Indonesia and Malaysia where exports are increasing.

Precious corals

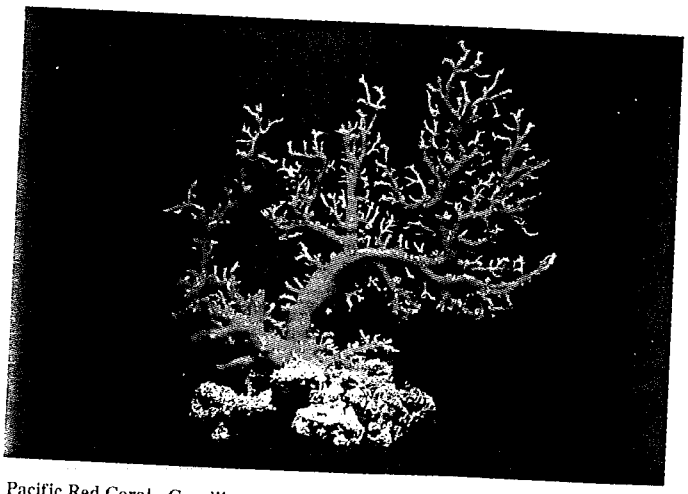
The main precious corals of interest in trade are the red or pink corals in the genus Corallium. Six species are of commercial importance, five from the Pacific and one, C. rubrum, from the Mediterranean. Certain deep water species in the genera Gerardia and Primnoa (gold corals) and Lepidisis and Acanella (bamboo corals) are also of commercial value, but are not used very often.

The Mediterranean was traditionally the centre of the precious coral industry and an important carving industry is still based at Torre del Greco in Italy, producing high quality jewellery and carvings. However, the fishery for C. rubrum has declined since the last century. More recently, production has dropped from 60-70 t in 1982 to 30-40 t in 1986 and 1987. Most collection is carried out by boats out of Italy and Spain in waters off Spain and the North African coast. The status of the stocks in Spanish and Italian waters is known to be over-exploited, but off parts of the North African coast and in the eastern Mediterranean they have barely been surveyed and may still be abundant.

Most precious coral now comes from the Pacific, with Japan and Taiwan dominating the trade. Taiwan is currently responsible for over 90% of the harvest and also most of the processing. The amount harvested varies considerably from year to year and, since 1980, has ranged from 105-403 t. Much of the Pacific coral comes from international waters, in particular the Midway Beds on the Emperor Seamounts which lie some 800 km west of the Hawaiian Archipelago. A small amount comes from the Batanes Islands in the north of the Philippines. Many areas in the Pacific have been fished out, particularly stocks around Japan and Taiwan, and there is now concern that the Midway Beds are being over-exploited.

The six commercial Corallium species were listed as 'Commercially Threatened' in the IUCN Invertebrate Red Data Book in 1983 (i.e. not currently threatened with extinction but most or all of whose populations are threatened as a sustainable commercial resource, or will become so unless their exploitation is regulated). CITES has been suggested several times as a control mechanism for precious coral exploitation. At the sixth meeting of the Conference of the Parties to CITES, a Spanish proposal to list Mediterranean C. rubrum in Appendix II was put forward but was not accepted.

The issue was discussed further at a technical consultation on Mediterranean coral convened by FAO and the General Fisheries Council for the Mediterranean in November 1988. Most countries represented at this meeting, particularly the Italian representatives from the trade, considered that it would be counter-productive to pursue listing at present. This is principally because a regional proposal is being developed with the assistance of FAO to manage the Mediterranean fishery using rotating harvesting areas (Caddy and Savini, in prep.). An Italian Red Coral Group is developing a major coral research programme, involving some joint projects with other countries, and this will provide substantial data of use to the management strategy. The feasibility of this is currently being investigated. The effectiveness of this strategy, once implemented, should be monitored, and the necessity of listing C. rubrum in Appendix II re-assessed at a later date.



Pacific Red Coral Corallium sp. © S.M. Wells

At present, it also does not seem appropriate to list the Pacific precious corals in CITES, especially given the predominance of Taiwan in the trade, and the fact that most coral comes from international waters. Furthermore, if Pacific corals were listed without listing

Table 2
US imports of Antipatharia carvings
(number of carvings)

Exporting country	1982	1983	1984	1985	1986	1987
Taiwan	378927	399794	249506	487465	489118	496033
Philippines	7640	1266	7474	13507	15032	3877
other	10839	5716	3350	12503	2204	4808
Total	397406	406776	260330	513475	506354	504718

Source: US CITES annual reports

Mediterranean coral, identification problems would be considerable. However, there is clearly an urgent need to exert some form of control on the Pacific fishery. Perhaps the most effective method would be to approach the problem from a regional point of view, as in the Mediterranean. There are a number of regional organisations which could be approached for assistance. The Committee for Co-ordination of Offshore Prospecting, CCOP/SOPAC, which is responsible for the management of non-living resources in the South Pacific is currently assessing precious and black coral stocks and their potential for commercial exploitation in the waters of South Pacific Commission countries. The Forum Fisheries Agency (FFA) of the South Pacific Commission is responsible for the exploitation and management of living resources and oversees a number of bilateral treaties between Pacific nations and Japan, at present mainly for tuna fish. The Western Pacific Fisheries Management Council, responsible for fisheries management in Pacific US territorial waters, has developed a management strategy for precious corals which would provide a useful basis for a broader management plan.

Black coral

All black corals (the order Antipatharia) were listed in Appendix II of CITES in 1981. Very little information was available on the black coral trade until statistics became available through the CITES annual reports and the publication of a report by Carleton and Philipson in 1987 for the Forum Fisheries Agency. The main species involved are Cirrhipathes anguina and Antipathes grandis. According to Carleton and Philipson (1987), the Philippines is the main supplier of raw black coral for the jewellery industry and supplies Taiwan, the main processing centre. Smaller amounts of black coral are collected in several Pacific countries such as Tonga and Hawaii. An unquantified amount is collected in numerous Caribbean countries for the souvenir industry. Collection also occurs in some South East Asian countries, notably Indonesia.

The USA is the main importer and provides the most detailed statistics in its annual report to CITES. Taiwan is the main supplier of worked black coral to the USA by an order of magnitude, nearly half a million black coral carvings having been imported from this country by the USA annually since 1985 (Table 2). Smaller quantities are imported by many European countries.

There are numerous anecdotal reports of over-collecting of black coral, but there has been little research on the status of the main commercial stocks. Carleton and Philipson (1987) express concern at the quantities being fished in the Philippines and it would seem a high priority to investigate this fishery. Exports of unworked black coral are banned under Philippine coral legislation and the large exports to Taiwan, as well as smaller quantities to the USA and probably other countries, are therefore illegal. The US Fish and Wildlife Service has recently issued a notice (see above) pointing out that imports of raw black coral from the Philippines are illegal; other importing countries should also be made aware of this fact.

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Sue Wells and Elizabeth Wood are members of the Coral Reef Team of the UK-based Marine Conservation Society.

Wildlife Prosecutions in Australia

compiled by TRAFFIC(Oceania)

FEDERAL

On 20 October 1988, David Holmes and Peter Phippen, two Australians who had illegally imported exotic birds (see Traffic Bulletin 8(3):53 and 10(1/2):11 for details), had their penalties increased by the Court of Criminal Appeal. The Sydney District Court, on 11 February 1988, had discharged the two men, without proceeding to conviction, and had obliged each of them to enter into a recognizance to be of good behaviour. The Crown, however, appealed against the inadequacy of the penalty, and the appeal court increased it to a fine of A$6000 (US$4800) for Phippen and A$5000 for Holmes.

* * * *

On 3 February 1989, an appeal court hearing in Sydney dramatically reduced a convicted bird smuggler's sentence. Hans Klein, an Austrian citizen, had been convicted on 4 October 1988 on wildlife and quarantine charges. He had been sentenced to the maximum penalty, under the Wildlife Protection (Regulation of Exports & Imports) Act 1982, of five years' imprisonment, plus two years on the quarantine charge, to be served concurrently (see Traffic Bulletin 10(1/2):11). Klein appealed, and his sentence was reduced to four months on the wildlife charge and two months on the quarantine charge, to be served concurrently. As Klein had already served this time, he was released immediately.

* * * *

On 28 April 1989, Horst Selig, a German national, resident in the Philippines, was convicted in Sydney of attempting to smuggle Australian native fauna, and possession of a stolen passport. He was sentenced to two years on each of two charges under the the Wildlife Protection (Regulation of Exports & Imports) Act, and six months on a charge under the Passports Act.

Selig had attempted to leave Australia on 23 November 1988 with two suitcases containing 2 Gang-Gang Cockatoos Callocephalon fimbriatum, 2 Sulphur-crested Cockatoos Cacatua galerita, 17 Galahs Cacatua roseicapilla, 6 Major Mitchell's Cockatoos Cacatua leadbeateri, 4 Shingleback Lizards Trachydosaurus rugosus, 2 Western Blue-tongued Lizards Tiliqua occipitalis, and 5 Water Dragons Physignathus lesueurii.

He was charged under the name of Barry Trewern (Australian Customs Service News Release, 24.11.88), the name on the stolen British passport in his possession.

STATE/FEDERAL

On 18 October 1988, Daniel Bottlang from Switzerland, appeared in the Perth Magistrates Court. Bottlang was facing three charges under the Western Australian Wildlife Conservation Act 1950-1980 of illegal taking and possession of birds' eggs; one charge of attempting to export protected fauna contrary to the Federal Wildlife Protection (Regulation of Exports & Imports) Act 1982; and a charge of attempting to send electrical equipment by air, contrary to the Air Navigation Regulations.

The court heard that Bottlang had first come to Australia in July 1988 to investigate the possibility of exporting eggs, but had been told that permits were not available to private aviculturists. Bottlang had then allegedly sent two empty incubators back to Switzerland, and when they passed through Customs without being checked, he decided that he would return to Australia in

STATE/FEDERAL ctd

the breeding season to obtain some eggs. Bottlang returned to Australia in October 1988 and was kept under surveillance by officers of the Dept. of Conservation & Land Management, after residents in the Three Springs area, 250 km north of Perth, reported seeing him acting suspiciously. On 7 October 1988, Bottlang deposited two small crates with Qantas Air Cargo in Perth; one contained personal possessions and the other contained an incubator, powered by batteries, and eight eggs. Two eggs were of the Red-tailed Black Cockatoo Calyptorhynchus magnificus, three were Little Corellas Cacatua sanguinea and three were Galahs.

Bottlang was convicted and fined A$1800 (US$1460) on the three State law charges; A$1250 on the Federal Wildlife Protection Act charge; and A$250 on the Air Navigation Regulations charge - a total of A$3300, excluding costs.

STATE

New South Wales

On 31 October 1988, Allan Parmenter, an animal dealer from New South Wales, was convicted and fined a total of A$3500 (US$2840) on 11 charges under the New South Wales National Parks & Wildlife Act and Regulations. The charges included buying and selling protected and endangered fauna. In July 1988, Parmenter had been convicted and fined a total of A$2698 for six offences under the Act. Parmenter also has previous wildlife convictions dating back to 1973. The New South Wales National Parks & Wildlife Service has refused to renew Parmenter's fauna dealer's licence.

Northern Territory

Recent actions by the Conservation Commission of the Northern Territory have resulted in the following convictions under the Territory Parks & Wildlife Conservation Act:-

22 September 1988 - Alan Britton, on charges of killing and possessing protected wildlife (skin of Freshwater Crocodile Crocodylus johnstonii). Fined a total of A$500 (US$406).

24 October 1988 - Matthew Yorston, on charges of illegal possession of 2 Woma Pythons Aspidites ramsayi, 1 Death Adder Acanthophis sp., 1 Carpet Python Morelia spilota variegata and an unidentified small goanna Varanus sp. Fined A$250 (US$200), plus a further A$200 for possession of unregistered firearms.

3 November 1988 - Peter Gorman, on charges of killing protected animals (Freshwater Crocodile Crocodylus johnstonii and Antilopine Wallaroo Macropus antilopinus). Fined a total of A$700 (US$570) including costs.

17 November 1988 - Gary O'Connor, on a charge of possessing 'prohibited entrants' (i.e. species listed on Schedule 4 of the Territory Wildlife Regulations (six Java Sparrows Padda oryzivora). Fined a total of A$1250 (US$1015). This was O'Connor's second conviction for keeping Java Sparrows.

7 December 1988 - Brian Lush, on a charge of taking Crimson Finches Neochmia phaeton without a permit. Fined A$1010 (US$820) including costs, plus forfeiture of all trapping equipment and 4-wheel-drive vehicle.

20 February 1989 - Errol Woods, on charges of possessing 3 Olive Pythons Liasis olivaceus and 2 Blue-tongued Lizards Tiliqua spp., and killing protected wildlife (a variety of native birds and bats to feed the Pythons). Fined A$700 (US$568).

Wildlife Prosecutions in Australia ctd.

Queensland

On 9 August 1988, Claude Watson, from Queensland, was convicted under the Queensland Fauna Conservation Act on charges of taking and keeping protected fauna, contrary to Section 54(1)(a) of the Act. Watson was fined a total of A$300 (US$240) plus A$81.50 court costs. He was further ordered to pay royalties to the Crown of A$2280. Three bird traps, three Major Mitchell's Cockatoos and 69 Scaly-breasted and Rainbow Lorikeets Trichoglossus chlorolepidotus and T. haematodus, were seized and forfeited. The lorikeets were released and the cockatoos taken to National Parks & Wildlife Service aviaries until fit for release.

* * * *

On 11 October 1988, Graeme Cutmore, from Queensland, was convicted on charges of taking, keeping, and moving protected fauna, contrary to Sections 54(1)(a), 59(1)(a) and 62(1) of the Queensland Fauna Conservation Act. Cutmore had been apprehended by police on 3 August 1988 with 74 Major Mitchell's Cockatoos Cacatua leadbeateri in his possession. The birds had allegedly been trapped in the wild near Bollon, Queensland. Cutmore was fined A$2600 (US$2100) on the three charges and ordered to pay royalties of A$22 200; a total of A$24 800. This is believed to be the highest monetary penalty ever imposed in Australia for a fauna offence. In addition, Cutmore's 4-wheel-drive vehicle, trailer, equipment, and the 74 birds were ordered to be forfeited. However, on 3 February 1989, an appeal court hearing halved the royalties payable to A$11 100. Cutmore has a previous conviction in Queensland, dating back to 1982, for selling protected fauna.

* * * *

Other recent actions by the Queensland Police Fauna Squad have resulted in the following convictions under the Queensland Fauna Conservation Act:-

23 February 1988 - Leslie Brady, on a charge of keeping 1 Crimson Rosella Platycercus elegans and 1 Cockatiel Nymphicus hollandicus without authority. Penalty: A$258.25 (US$209) including costs and royalties.

29 September 1988 - Hermes Speziali, on a charge of keeping 2 King Parrots Alisterus scapularis, 2 Pale-headed Rosellas Platycercus adscitus, 1 Cockatiel and 1 Red-rumped Parrot Psephotus haematonotus without a licence. Penalty: A$188.25 (US$152) including costs.

21 November 1988 - Lindsay O'Neill, on a charge of keeping 2 King Parrots, 1 Rainbow Lorikeet and 5 Cockatiels without a licence. Penalty: A$60.75 (US$50) including costs.

21 November 1988 - Kevin Marshall, on a charge of keeping a Major Mitchell's Cockatoo without authority. Penalty: A$490.75 (US$398) including costs and royalties.

22 November 1988 - James Kirwan, on a charge of dealing in fauna (93 untagged Eastern Grey Kangaroo skins Macropus giganteus) without a permit. Skins forfeited and ordered to pay costs of A$38.25 (US$30), but no penalty imposed.

South Australia

On 6 December 1988, Eric Gilles, from South Australia, was convicted on three counts of making false entries in a Record Book, and unlawful possession of three Regent Parrots Polytelis anthopeplus. The entries related to the 'breeding' and 'sales' of Regent Parrots. Gilles was fined A$1730 (US$1400) and the birds were forfeited.

Another man, Peter Spanos, also of South Australia, was convicted 13 December 1988 on three charges of illegal possession of birds (35 Regent Parrots and nine Mallee Ringnecks Barnardius barnardi). On each of the three charges, Spanos was sentenced to one month's imprisonment which was suspended upon his entry into a good behaviour bond. He was also ordered to pay additional penalties and costs totalling A$1580. The birds involved were forfeited.

* * * *

On 6 February 1989, John Anderson, alias Gunter Schindler, from South Australia, was charged under the South Australian National Parks & Wildlife Act 1972 & Regulations 1972-1974 with illegal possession of native birds (contrary to Section 60(1)(a)), keeping native birds without a permit (Section 58(1)(b)), not having an import permit (Section 59(1)(b)), and keeping birds in inadequate conditions (Regulation 17). The charges related to the discovery by a South Australian National Parks & Wildlife Service ranger, in August 1988, of 2 Major Mitchell's Cockatoos, 2 Mulga Parrots Psephotus varius, 2 Musk Lorikeets Glossopsitta concinna, 1 Princess Parrot Polytelis alexandrae and 1 Red-rumped Parrot in the false bottom of a caravan, at Peterborough. Anderson pleaded guilty to the charges and was fined a total of A$4200 (US$3400) including costs.

* * * *

On 15 February 1989, Raymond Borg, of South Australia, was convicted on eight counts of making false entries in his Record and Returns Books, relating to the 'breeding' and 'sales' of Mulga Parrots and Blue Bonnets Psephotus haematogaster. Borg was fined a total of A$1210.

Gould's Monitor Varanus gouldii © Dolder/WWF

Western Australia

On 15 February 1989, Mervyn Cooper, a shell dealer from Western Australia, was convicted on five charges of selling protected fauna contrary to Section 17(2)(e) of the Western Australian Wildlife Conservation Act. He was fined A$600 (US$490), plus A$150 costs. The species involved were stuffed specimens of native Australian fauna, including one Gould's Monitor Varanus gouldii.

TRAFFIC Network Activities

TRAFFIC(Austria)

TRAFFIC(Austria) is currently participating in the ivory trade study being initiated by the AECCG (see page 28). Although the Austrian trade in raw ivory is not very important on a world scale, a thorough examination of the worked ivory market in Austria is being carried out.

The office has assisted in a feasibility study concerning the establishment of a rescue centre for live animals and is also investigating the Austrian trade in tropical timber.

TRAFFIC(Belgium)

TRAFFIC(Belgium) is collecting material on trade in the Great Hornbill Buceros rhinoceros to assist the Belgian Management and Scientific Authorities in drafting a proposal to list the whole species in CITES Appendix II, to be considered at the seventh meeting of the Conference of the Parties to CITES.

The Belgian Customs administration requested TRAFFIC(Belgium) and the Belgium CITES Management Authority to repeat a series of lectures on CITES for Customs officers, which proved so successful three years ago. New, updated material was prepared by TRAFFIC(Belgium) and presented at six sessions held in Antwerp, Zaventem national airport and Brussels in March/April 1989 and further sessions are planned.

Staff are carrying out an extensive study of the ivory trade in the country, as part of the AECCG strategy to conserve the African Elephant, and should be finalised by the end of April. TRAFFIC is very grateful to the Belgian CITES Management Authority for its generous and encouraging support in this investigation.

TRAFFIC(France)

TRAFFIC(France) is currently preparing a CITES training programme, in co-operation with Customs, which will be used at seminars for Customs officers and veterinarians.

The office has provided information to the French authorities which has resulted in a number of seizures and prosecutions.

A magazine to improve public awareness on wildlife trade issues has been prepared with WWF-France.

A study of the implementation of CITES in New Caledonia and French Polynesia has been carried out. It clearly shows that local authorities are poorly-informed of their obligations under CITES. Some rare species are particularly threatened by illegal trade. These include Tahitian Lory Vini peruviana, Ultramarine Lory V. ultramarina, Kagu Rhynochetus jubatus, Horned Parakeet Eunymphicus cornutus, Hawksbill Turtle Eretmochelys imbricata and Green Turtle Chelonia mydas.

The study on French imports and exports of frozen frogs' legs and live frogs (for human consumption) has been completed and published. A study of France's trade in ivory is currently in progress.

TRAFFIC(Germany)

The German Wildlife Trade Education Kit ("Artenschutzkoffer") was presented at a press conference in April and was greeted by an enthusiastic response. The kits, which currently number 20, each comprise a suitcase containing a number of confiscated CITES-listed specimens, and will be available in 20 areas throughout the country, free of charge, to interested teachers. It is hoped that ten more kits will be available by the end of the year.

The expertise of TRAFFIC staff has increasingly been sought by Customs officers at Frankfurt airport during the periods when official CITES experts have not been available. A number of training sessions have been given to Customs officers to aid species identification.

The development of a computerised database on wildlife trade data continues and a study of the German ivory trade is in progress.

TRAFFIC(Italy)

In co-operation with the Italian CITES Management Authority, a study is being carried out on the Italian reptile skin trade, in particular Crocodilians.

A 70-page booklet on wildlife trade, CITES and TRAFFIC has been prepared for tourists abroad and buyers in Italy. 5000 copies have been printed and details of availability will be announced in the next issue of the Traffic Bulletin.

TRAFFIC(Japan)

TRAFFIC(Japan) is engaged in a comprehensive analysis of the ivory trade in Japan, Hong and Taiwan as part of the international ivory trade study. The Japanese ivory trade association, the Taiwanese and Hong Kong governments, and WWF-Hong Kong are co-operating, and draft reports should be available in May.

Staff have assisted local police efforts to enforce Japan's new wildlife trade law which went into effect in December 1987. The law controls sales and internal possession of live or whole-stuffed listed species. A number of seizures involving the illegal sale of live Asian Bonytongue Scleropages formosus have occurred. Most recently, action was taken against a Tokyo publishing house president who offered rare and protected wildlife for sale through a provocative mail-order catalogue. The arrest of the company president, together with the confiscation of 50 stuffed specimens, is bound to demonstrate that Japanese authorities are taking the implementation of the law seriously. The latter case was brought to the attention of the investigators through the efforts of TRAFFIC(Japan).

Among other activities, TRAFFIC(Japan)'s survey of the rhinoceros horn trade in South Korea is nearing completion and a draft report should be issued shortly.

New trade controls in Taiwan have also been effective in strengthening CITES implementation; Customs data for 1988 show that raw ivory imports dropped from over 80 tonnes in 1987 to less than 6 tonnes.

TRAFFIC(Netherlands)

As from June, TRAFFIC(Netherlands) plans to employ a part-time researcher, who will work on the investigation currently being carried out on the trade in and breeding of psittacines in the Netherlands.

Leaflets on wildlife trade and CITES will be distributed to travel agencies, in May. A computerised database on wildlife trade data has been set up.

Meeting in Lausanne

The seventh meeting of the Conference of the Parties to CITES will be held in Lausanne, Switzerland, from 9-20 October 1989.

The deadline for submission of proposals to amend the Appendices is 12 May 1989. Traffic Bulletin Vol. 11 No. 1 will contain details on the proposals to be discussed at the meeting.

TRAFFIC(Oceania)

TRAFFIC(Oceania) has completed its trade studies on the Tasmanian Brush-tailed Possum Trichosurus vulpecula and Short-tailed Shearwater Puffinus tenuirostris. These reports will be published in due course. A third study, which examined the trade in Australian native insects, is also complete. The report, which is confidential, was prepared under contract by a consultant entomologist, and a summary will be published in the Traffic Bulletin.

Preliminary investigations have been made into the Australian trade in Paphiopedilum orchids and a full-scale study of this trade is planned for later in the year.

In October, the Director visited the Solomon Islands for talks with officials at the Ministry of Natural Resources, and other agencies, in an effort to understand better the problems of the area, and establish a rapport with the various government agencies. The Director went on to Lae in Papua New Guinea to attend the ninth working meeting of the IUCN/SSC Crocodile Specialist Group.

At long last, thanks to WWF-Australia, the office now has a computer. A current major task is the transferral to the computer of existing record-keeping systems on wildlife trade data and market prices.

TRAFFIC(South America)

The Director has been designated by the countries of Central America, Caribbean and South America as the regional representative on the CITES Animals Committee; the second meeting of the Committee was organised by TRAFFIC and the Government of Uruguay and took place on 4-6 April 1989. The Director has also been appointed as the regional representative on the Steering Committee of the IUCN/SSC Crocodile Specialist Group.

In December 1988, TRAFFIC(South America) published (in Spanish, with a summary in English) Diagnostico y Recomendaciones sobre la Administracion de los Recursos Silvestres en Argentina: La Decada Reciente (Diagnosis and Recommendations on the Management of Wildlife Resources in Argentina: The Recent Decade). This is the culmination of a study carried out in 1987 and 1988. A brochure outlining the objectives of TRAFFIC has also been published.

An agreement between the Government of Brazil, CITES Secretariat, Sao Paulo Zoo and TRAFFIC(South America) to start a captive-breeding programme of Spix's Macaw Cyanopsitta spixii has been signed. TRAFFIC was involved in the rescue, in 1988, of two Spix's Macaws (CITES Appendix I) which have become part of the breeding programme.

Staff are currently involved in the preparation of proposals to amend the CITES Appendices and in other CITES-related matters, in preparation for the seventh meeting of the Conference of the Parties.

TRAFFIC(USA)

TRAFFIC(USA) played an instrumental role in developing the African Elephant Conservation Act, signed into law in October 1988 (see Traffic Bulletin 10(1/2):1). The Act prohibits the import of ivory from any country dealing in illegal ivory and from any country that does not adhere to CITES. As a first step to test the strength of the new law, TRAFFIC(USA) and WWF-US submitted a petition to the US Department of the Interior to impose an immediate moratorium on US ivory imports from Somalia, based on an analysis by TRAFFIC of Somalia's current ivory trade practices and information that high-level government officials in Somalia have been involved in illegal ivory trade. As a result of the petition, the US Government imposed an immediate moratorium on the ivory imports from Somalia.

In addition, the US CITES implementation study started by TRAFFIC(USA) in 1988 is now in full spate.

Data for Indonesia, Japan, the Philippines, and Thailand, for the Asian reptile trade study, have been compiled and actual trade documents and permits are now under review. US Government trade control procedures for live birds and chimpanzees are being examined, as are specific CITES-related activities of the US Fish & Wildlife Services offices of Management Authority, Scientific Authority, and Law Enforcement.

Data Needed on Birds' Nests Trade

The nests of several species of swiftlets are considered a delicacy, especially in China and in Chinese communities around the world.

In 1983 the best quality 'white nests' (made from just the adult birds' saliva or 'nest-cement') fetched US$8000 a kilo. It requires around 110 nests to make one kilo.

Unfortunately, the over-exploitation of the nesting sites, which these high prices encourage, disturbs the breeding cycle of the birds and some populations are being seriously threatened. The Earl of Cranbrook, a well-known authority on the swiftlets of South East Asia, recently expressed serious concern about the populations of Aerodramus fuciphagus in the Niah caves in Sarawak, Malaysia.

A preliminary study carried out for WTMU in 1987 (see Traffic Bulletin 9(2/3):45-46) indicated that 81 tonnes of nests were imported into Hong Kong alone, which represents about 11 million nests. This figure is probably made up from the nests of just two species, A. fuciphagus and Aerodramus maximus. Such a large volume of trade could potentially affect the populations of these two species and further work is urgently called for to quantify the recent trade and its effects.

WTMU is about to carry out a follow-up study on the trade and requires recent, reliable information on the following points:

i. any existing legislation designed to control the trade;
ii. the species involved in the trade, and their range;
iii. the main centres of collection;
iv. trends in the yields of edible birds' nests;
v. names and addresses of any person or organisation who may be able to provide us with further information.

Any information should be sent to:

Lionel Hithersay
Wildlife Trade Monitoring Unit
World Conservation Monitoring Centre
219c Huntingdon Road
Cambridge CB3 0DL, UK.

Subscriptions

From Volume II, subscriptions to the Traffic Bulletin will apply on a volume basis and will not relate to the date of subscription. Those whose subscriptions are current will receive Volume II without any further payment.

The subscription is £10.00 (US$20.00) to commercial enterprises and private individuals. Government wildlife agencies, conservation organisations and other institutions in a position to further the conservation of threatened species, may receive the Traffic Bulletin free of charge, but donations will continue to be welcomed. Subscriptions should be addressed to the Wildlife Trade Monitoring Unit, World Conservation Monitoring Centre, 219c Huntingdon Road, Cambridge CB3 0DL, UK, and cheques/ international money orders made payable to the World Conservation Monitoring Centre.

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