News and views

Butterfly ranches may save forests

Papua New Guinea, home of 700 species of butterflies and a butterfly hunter's paradise, long suffered the depredations of plunderers who carried away large numbers of rare butterflies in the first half of this century. By 1966 the populations of some species of birdwing butterflies had plunged so low that the Government designated seven species of birdwing butterflies as protected. It became illegal to collect them, with fines for Papua New Guineans and deportation of expatriates who violated the law.

While collection is a threat to some species, like the birdwings, which reproduce slowly, most of the world's butterflies are becoming rare because of habitat destruction. And to protect habitat in the face of pressure for economic development is a difficult and expensive task. Most of Papua New Guinea is still covered in primary rain forest and the country has taken an imaginative and pioneering step to ensure that at least some of it is safeguarded. Papua New Guinea considers insects as a national resource and specifies insect conservation as a national objective in its constitution. More specifically it has made butterfly farming a part of the national village economic development plan.

Butterfly farmers—or, more accurately, ranchers, because the breeding stock is free in the forest—are encouraged to increase their livestock by enriching small areas of land with butterfly food plants. Particularly useful in this respect is the Dutchman's pipe vine *Aristolochia tagala,* which is the food plant of the commoner birdwings and at least one of the protected endangered species *Ornithoptera victoriae.*

The Insect Farming and Trading Agency (IFTA), organised initially by Angus Hutton, a former tea-planter, amateur lepidopterist and FFPS member, provides a market for the butterfly farmers, purchasing butterflies from them to satisfy overseas orders and returning 75 per cent of the profits to the villagers. There is a huge international demand for tropical butterflies, from scientists engaged in research, from collectors and those who like expensive curios, as well as for everyday objects that incorporate butterflies in their decoration. The agency also offers advice and encouragement to farmers and promotes research on butterfly conservation.

Esekiel Eisolomi, with the larvae of a birdwing, *Ornithoptera caelestis* feeding on the *Aristolochia* vines that he has planted in his family's abandoned coconut plantation in Misima Island, Papua New Guinea *(Angus Hutton).*

By providing employment in rural areas where other income-producing activities are difficult to establish or are harmful to traditional lifestyles and fragile environments, the butterfly farming programme is also conserving butterflies and their habitats. The bulk of the land around the villages is left intact, which means that villagers can also retain their traditional hunting grounds. The alternative to butterfly farming might be to clear the forest for its timber or to plant cash crops such as coffee. The project has focussed attention on the status of all butterfly species in the country. The Government has already established wildlife management areas to save Queen Alexandra's birdwing *Ornithoptera alexandrae,* the largest and most threatened butterfly in the country, and is also setting up refuges administered by village councils to preserve and protect other birdwings.

Papua New Guinea is also applying the same concept of combining the conservation of species endangered by trade with economic gain at the village level to other animals. The Division of Wildlife is farming crocodiles, rusa deer, wallabies and two native bird species, the megapode and the cassowary. Other countries with tropical

forest resources would do well to follow Papua New Guinea's example.

Butterfly Farming in Papua New Guinea, a report in the series Managing Tropical Animal Resources, is published by the US National Academy Press, Washington DC (1983). An article on the project by Angus Hutton will appear in *Oryx* in the near future.

Whaling news
by Sidney Holt

As *Oryx* goes to press we learn that several whaling countries have announced that they will not abide by the decisions of the International Whaling Commission (IWC) regarding catch limits for commercial whaling during the 1984/85 season in the southern hemisphere and the 1985 season in the northern hemisphere. Brazil has objected to the 1984/85–1985 quota for minke whales in the southern hemisphere and stated that it will take practically the same number as the 1984 quota. At the same time Brazil reaffirmed its acceptance of the moratorium starting in 1985.

The USSR has objected to the entire southern hemisphere minke quota, saying it will take, during the 1984/85 season in the Antarctic, the same number of whales as it took in 1983/84. In the south-west Atlantic sector the USSR and Brazil, as well as Japan, have access to the same stock of minke whales, though in recent years Japan and the USSR have refrained, by agreement with Brazil, from operating in that sector. A corresponding objection by Japan is now expected. Japan and the USSR usually share equally the total quota; the USSR exports all the whale meat it produces to Japan. The Japanese Government has authorised its whaling industry immediately to begin catching sperm whales in the north-west Pacific. The catch limit there became zero as from the 1984 season, but Japan has a standing objection to that decision.

Sperm whales are now formally protected in all regions from commercial whaling, and international trade in products from them—mainly industrial oil—is prohibited under CITES. A very few sperm whales are still caught for human consumption by subsistence whalers in Indonesia, which is not a member of the IWC. Commercial whaling is still carried out in the Azores Islands; Portugal is also not a member of the IWC. The oil is certainly leaving the Azores, but its destination has been a mystery—except to those engaged in this illegal trade. Portugal is a party to CITES and did not enter a reservation on the sperm whale. There have been recent reports that the oil is reaching world markets by being smuggled through the port of Rotterdam, but it is not known where it is being subsequently refined.

Tightening controls on the ivory trade in Japan

Japan is the second largest importer of raw ivory after Hong Kong, but the largest consumer in the world. Its ivory industry uses approximately 300 tonnes of ivory a year, half for making seals (since the Japanese do not regularly use handwritten signatures) and the rest for jewellery, piano keys, Japanese traditional musical instruments, netsukes (carved button-like ornaments) and very high quality sculptures.

In 1983 Japan imported 476 tonnes of raw ivory, an all-time record. Unfortunately, a considerable amount came from dubious sources without proper documentation conforming to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which was ratified by Japan in 1980. Japanese traders have been importing ivory from Burmese elephants, which is illegal, from Burundi, which has only one elephant, and thus its origins are suspect (mostly it is smuggled in from Tanzania and Zaïre) and from Zaïre, which outlawed almost all commercial shipments of ivory in 1978.

Furthermore, since 1982, some companies in Japan have been importing large quantities of raw ivory, also without proper documentation, for Hong Kong. The Hong Kong authorities would not allow ivory to be imported directly from Europe or Africa, but will allow these imports to come in from Japan, because Japan is a CITES member. In other words, Japan is 'laundering' large quantities of ivory for the Hong Kong market. This practice only began in 1982, but involved about 140 tonnes in 1983. This re-export trade should stop because its original sources are central African countries where poaching and illegal trade in ivory are rampant.

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On account of these problems, and especially because the Japanese Government authorities are not correctly implementing the CITES directives on the importation of raw ivory, Dr Esmond Bradley Martin, Vice-Chairman of the International Union for the Conservation of Nature and Natural Resources (IUCN) African Elephant and Rhino Specialist Group, and a specialist on trade matters, went to Hong Kong and Japan to try to rectify the situation. In August 1984 he met with the members of the Tokyo Ivory Arts and Crafts Association, the largest group of ivory traders and carvers in Japan, and after several days of discussions the Association's members agreed that there is a crisis concerning the international trade in ivory and accepted the following recommendations with immediate effect:

(1) All imports of ivory from Asian elephants would stop.
(2) Members would not import any more ivory from Burundi, either directly or indirectly.
(3) Members would not import ivory from Zaïre, once their major suppliers in the past and the source of the highest quality hard ivory required for the making of seals and sculptures. (This was an extremely difficult decision for the Japanese traders to make, but one which will be greatly appreciated by conservationists all over the world.)
(4) Members of the Association would only import individual tusks weighing 8 kg (17.6 pounds) or more, in order to discourage the poaching of young elephants and breeding females in Africa. The only exception to this 8 kg minimum would be ivory from South Africa and Zimbabwe where there are surpluses of elephants, which are culled yearly by the governments. In Zimbabwe whole herds are killed to prevent disturbance and the breaking-up of family units and the resultant ivory is legally marketed.
(5) The Association, which is not involved in the 'laundering' of ivory for the Hong Kong market, will support efforts to stop this practice.
(6) The Association will continue to support financially projects for the purpose of conserving the African elephant. In 1983 the Association, along with the Osaka Ivory Manufacturers Association, donated $10,000 for a study of the ivory carving industries of southern Africa, which showed that about 25 tonnes of ivory are consumed by the local carving industries of Zimbabwe, Botswana, South Africa and Malawi.

Dr Martin carried out similar discussions with the Osaka Ivory Manufacturers Association and although members of this group did not act as quickly as their associates in Tokyo, they agreed to discuss all the points at a joint meeting with the Tokyo Ivory Arts and Crafts Association in September 1984. It is likely that the Osaka Association will agree to implement most of the same proposals.

The IUCN African Elephant and Rhino Specialist Group, the World Wildlife Fund-Japan and TRAFFIC-Japan are extremely pleased with the Tokyo Ivory Arts and Crafts Association's voluntary action. The steps they are taking towards controlling the ivory trade are much stricter than those of many governments in ivory importing countries and they exemplify how commercial traders can and do co-operate with world-wide conservation bodies.

Airport would ruin unspoilt reef

by Sue Wells

Shiraho Reef, off the south-east coast of Ishigaki Island, is one of the few healthy reef systems left in the Okinawa chain of islands in Japan. Most of these reefs have been seriously damaged by siltation and pollution, the results of intensified agriculture and rapid coastal development. Survey work by Dr Katy Musik, a marine biologist currently working in Japan, suggests that favourable currents and topography at Shiraho are probably responsible for the near-pristine condition of its reef. Subsistence fishermen still derive their living from fish, shellfish, seaweed and marine invertebrates collected from the reef.

But this situation may not last for long. A proposal is going forward to construct an airport, capable of handling jumbo jets from Osaka and Tokyo, with a 2.5-km runway on land reclaimed from Shiraho lagoon. This would result in the almost total destruction of the reef. Needless to say, the new airport is to deal with the increasing numbers of tourists visiting Ishigaki Island, many of whom of course come to see the reefs. Opposition to the airport proposal is being organised by a coalition

of Ishigaki fishermen and farmers, and Shiraho-born professors working at the University of the Ryukyus in Okinawa, and a campaign has been mounted by Friends of the Earth in Japan.

Construction was due to start in October and it is feared that unless international pressure is brought to bear on the Japanese Government, the Shiraho reef will be lost. The World Wildlife Fund was holding a symposium in Tokyo in October 1984, to be opened by Prince Philip, which was to discuss the development of a conservation strategy for the Nansei Shoto region which includes the Okinawa islands. Efforts were to be made to raise the Shiraho issue in the course of this meeting. Japan has a long tradition of interest in marine conservation, and was one of the first countries to develop a system of marine parks. It will be a pity if this good track record is broken, at a time when the management of coastal resources and coral reefs is being given high priority in other parts of the world.

Project Wallace
by Mark Collins

The Royal Entomological Society is commemorating the 150th anniversary of its foundation and the centenary of its Royal Charter by mounting a major year-long scientific expedition to the tropical forests of Sulawesi. A joint programme of research and training with Indonesia's Institute of Sciences (LIPI) will take place during 1985 in the Dumoga-Bone National Park in the northern limb of the island.

Only gazetted in 1982 the Park is already famed for its importance as a refuge for vertebrates. Included within its boundaries are the two species of anoa or pygmy buffalo *Bubulus depressicornis* and *B. quarlesi*, Sulawesi's largest remaining population of the extraordinary four-tusked endemic pig, the babirusa *Babyrousa babirussa*, and the giant palm civet *Macrogalidia musschenbroeki*, all of which are accorded threatened status by IUCN. The rare Celebes tortoise *Geochelone forsteni* has its type locality not far away, and Dumoga-Bone is also the most famous site for the Maleo bird *Macrocephalon maleo*, a strange peacock-like ground bird that abandons its eggs in gravel beds warmed by hot springs. At many of its nest sites egg-collectors are threatening the birds through over-exploitation.

But what of the insects? Alfred Russel Wallace, a former President of the RES, who visited the island during his famous voyages in the East Indies, discovered an exceptionally rich fauna, separated from the Oriental and Australasian mainlands for long enough to evolve levels of endemism rivalling those of Madagascar. To give just one example, of the 30 species of swallowtail butterflies (Papilionidae) found on Sulawesi and its associated islands 20 occur nowhere else. Thousands of species of insects still remain to be discovered and described and teams of scientists will be joining Project Wallace to study their speciality groups. Others will be examining the role of insects in local agricultural and medical affairs, the pests, vectors of human disease, and useful predatory species. The importance of insects in the growth and regeneration of the forest will be tackled by ecologists and entomologists. They are interested in the way that decomposer insects help to control the destruction of over-mature trees, how seedling predators affect the species composition of the forest's trees, and in the role of insects as pollinators high up in the forest canopy.

Running through all these enquiries is a vital vein of conservation concern. Insects are less well known than the vertebrates but already certain butterflies are believed to be threatened in northern Sulawesi, and may be protected within Dumoga-Bone's boundaries. Jordan's swallowtail *Papilio jordani* is listed in IUCN's forthcoming *Swallowtail Red Data Book* and is expected to occur in the Park. Sulawesi is rich in milkweed butterflies (Danainae), but of the 34 species 10 are in IUCN threatened categories. Five of these could be in the Park and will be searched for and studied. These include the crow butterflies *Euploea configurata*, *E. eupator* and *E. magou*, *Parantica menadensis* and the rare *P. kuekenthali*.

Despite the many superlatives used to describe the area, Sulawesi is no paradise. Development on the island has taken a heavy toll in terms of forest clearance for timber, shifting cultivation and agricultural schemes. Such habitat destruction threatens all forms of wildlife, from birds to

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beetles. Nevertheless, in Sulawesi the Indonesians have had the foresight to recognise that conservation of their resources is a prerequisite for sustainable development. The National Park owes its existence to a far-sighted agreement between IUCN/WWF, the World Bank and the Indonesian Government, recognising the essential watershed functions of the Park. Following several years of WWF-funded work to demarcate, manage and develop the Park, it now provides a constant water supply for the needs of an important irrigated rice scheme in the Dumoga Valley, downstream of the Park's mountainous and often steep terrain. Clearly the wildlife has benefitted too, and Project Wallace aims to document the little-studied insects of Dumoga-Bone and to discover just what their role might be in maintaining the structure and function of Sulawesi's magnificent tropical forests.

Snail kite hangs by a thread

The battle to save the snail kite (formerly called the Everglade kite) *Rostrhamus sociabilis plumbeus* from extinction in Florida is far from won. In fact, as long as people still live in Florida it will need to be continually fought at the level of management attention that is called for by an endangered species, concludes an article in *National Wildlife* (22, 5).

Over the last decade a lot has been done to help the snail kite, which in 1973 had a total population of 50–70. Firstly, more than 100 snail kites have hatched in special baskets built by Rod Chandler, a National Audubon Society warden at Lake Okeechobee, and others—an aid necessitated by the kite's preference for unfortified nesting supports. Secondly, in 1976 a high-voltage power line was rerouted around potential kite nesting areas at a cost of $700,000. Thirdly, aviation authorities conducted low level test flights at a proposed Everglades jetport site to ensure that snail kites would not be disturbed by air traffic. Fourthly, the US Fish and Wildlife Service has spent $2 million in building dams to rear apple snails, which are the kites' main prey.

The snail kite, which was first listed as endangered in 1966, numbered 437 at the most recent census but its numbers fluctuate wildly. Specialised to feed on apple snails, the birds need a reliable year-round supply and this is not always available. Florida's interior wetlands, once little disturbed and flooded annually, have shrunk to half their original size and the ebb and flow of water is dictated not only by rainfall but by man. During 1980 and 1981 an extended period of little rain dried up the marshes, the apple snails disappeared and the kites abandoned their traditional haunts. Their population fell from 651 in December 1980 to 250 one year later. Most of the birds are now found concentrated in small pockets of vestigial Everglades, inside the shallow dyked impoundments of the South Florida Water Management District. And as Florida's small ponds and marshes continue to disappear, the officials in charge of the kite recovery plan remain pessimistic.

Pipeline threatens marine life in Gulf

An oil pipeline is to be built from Iraq to Aqaba, Jordan, capable of carrying one million barrels of oil per day. According to the Society for the Protection of Nature in Israel the project threatens to destroy marine life in the Gulf of Aqaba. The Gulf, a narrow strip of water at the northern tip of the Red Sea, has an unusually rich assemblage of species and attracts many scientists as well as hundreds of thousands of tourists and naturalists each year. Parts of the coast of eastern Sinai were proclaimed protected nature areas by an IUCN Resolution at the 15th General Assembly in 1981 and were also recommended as World Heritage Sites.

The pipeline was planned and is to be implemented by the Bachtel Corporation with the approval of the US Government and although the Society has tried to obtain more detailed information it has failed. If it has not already done so, and there is no evidence that it has, the US Government should demand a detailed environmental impact assessment of this undertaking, as required by law for development projects in the US. It would then be in a position to assure the conservation community that its approval of the project is conditional on there being proofs and safeguards that the marine life in the Gulf of Aqaba will not be endangered.