

Briefly . . .

International

US–Iceland whaling agreement

On 16 September the US and Iceland concluded negotiations (which had been going on since the end of the IWC 1987 meeting), reaching an agreement that will allow Iceland to continue to whale. Under the deal Iceland may take 20 sei whales and 80 fin whales in 1987, without US sanctions, in return for Iceland's commitment to submit its research programme for 1988, and thereafter, for review to the IWC Scientific Committee, and to carry out the Committee's recommendations. Before the agreement was reached Iceland had been holding up construction work at the US/NATO airbase at Keflavik and said it would evict the US Forces from the base unless the US withdrew the threat of sanctions. The Department then put pressure on the Commerce and State Departments to resolve the whaling conflict. At its 1987 meeting the IWC had refused to endorse the Icelandic research whaling plan, which proposed to take a total of 200 whales.

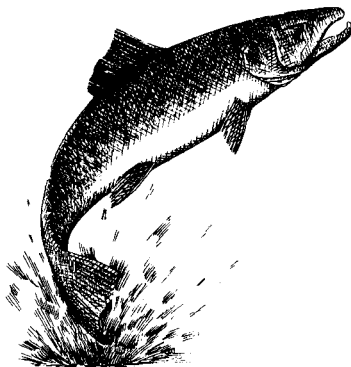
Monitor, 21 September 1987; *New Scientist*, 1 October 1987.

Conservationists call for sanctions against Japanese whaling

On 26 July Japan's Ministry of Agriculture, Forestry and Fisheries made the decision to continue research whaling, ignoring the IWC recommendation at its meeting earlier that month. Japan's Antarctic whalers were due to sail from Tokyo in mid-October with the intention of killing 875 whales. On 23 September a coalition of 11 conservation and animal welfare groups asked the US Government to reopen a lawsuit calling for US sanctions against the Japanese fishing industry for violating the ban on whaling. Conservationists lost a previous case when the Supreme Court overturned the decision of the lower courts in June 1986 (*Oryx* 21, 1), believing that Japan intended ending its whaling by March 1988.

Asahi Shimbun (Tokyo) (translation), 27 July 1987; *Globe and Mail (Toronto)*, 8 September 1987; *Monitor*, 24 September 1987.

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Atlantic salmon: making a dramatic resurgence (drawing by Sarah Wroot).

Salmon success

The dramatic resurgence of the Atlantic salmon *Salmo salar* in the past three years is a huge conservation success, according to the Atlantic Salmon Federation. From about 1968 to 1983 prime salmon rivers on both sides of the Atlantic were nearly barren of the fish, but since then the number of spawning salmon has tripled in some Canadian rivers. A major factor in the species's recovery is the international agreement limiting the number of salmon that may be taken in major ocean fishing grounds, and national governments have also taken stringent steps. Canada, for example, has reduced commercial salmon fishing by 50 per cent. Another factor is the growth of salmon farming in a number of countries, which has taken pressure off wild stocks.

International Wildlife, 17, 5.

Europe to ban wallaby imports?

On 18 September the European Parliament adopted a resolution to ban the import of all wallaby products and to closely monitor all kangaroo products from Australia. Final approval must be given by the European Commission and the Council of Ministers. Europe imports 90 per cent of Australia's kangaroo and wallaby exports.

Monitor, 21 September 1987.

Pheasant–panda pact

In exchange for 2000 eggs from a Sichuan pheasant and permission for Michigan, USA, biologists to conduct

pheasant studies in China, Michigan United Conservation Clubs has promised to help raise funds for panda conservation and provide equipment and other assistance. Michigan officials who visited China to negotiate the agreement presented Sichuan officials with a jeep for use in panda field studies.

International Wildlife, 17, 5.

Europe and North Africa

High penalty for egg snatchers

Two UK company directors were arrested by Customs officials in Finland as they tried to cross into Norway. Wild birds' eggs found in their car included those of rough-legged buzzard *Buteo lagopus*, redwing *Turdus iliacus* and several waders. The men were given a six-month suspended prison sentence, deported from Finland, banned from visiting all Scandinavian countries for five years, had equipment confiscated and were fined £20,000—probably the highest ever penalty imposed in Europe on egg-collectors.

Birds, 11, 7.

Danish ban on lead shot

Denmark has banned the use of lead shot for hunting on the 26 sites in the country that are listed under the Ramsar Convention. Non-toxic ammunition may be used instead. This is the first example in Europe of legislation against pollution through lead shot; in North America similar bans have been in force for several years.

Naturopa, newsletter-nature, 87–5.

Exotic aquatic threatens UK reserves

The Australian stonecrop *Crassula helmsii* is taking over Britain's ponds and has already eliminated native aquatic plants from about 100 sites, including 10 nature reserves. Introduced as an ornamental pond plant in the early 1900s, it appeared at its first natural site, in Essex, in the 1950s. Since then it has spread dramatically and is now even outcompeting a previous alien, Canadian pondweed. It is difficult to eradicate, being able to grow from tiny fragments, and there is fear that it could spread to lakes and rivers

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and create even more serious problems. Unfortunately, the Freshwater Biological Association, which has been conducting research on the plant, has suffered severe cuts in funds and may not be able to continue work on finding controls for the invader. *New Scientist*, 23 July 1987.

Barbary macaques reintroduced

Gilbert de Turckheim and Ellen Merz of La Montagne des Singes, Kintzheim, France, have supplied almost 600 Barbary macaques *Macaca sylvanus* for reintroduction into Morocco from their French and German (Salem) facilities. More reintroductions will take place as suitable sites become available. *International Primate Protection League Newsletter*, 14, 2.

Africa

Corruption killing rhinos

Eradicating corruption, rather than chasing poachers or halting international trade, is the key to ending rhino poaching, according to Dr David Cumming, Chairman of the IUCN's African Elephant and Rhino Specialist Group. The pivot of illegal exploitation, he says, is the alliance between corrupt politicians, businessmen and bureaucrats. Through political patronage the people involved are effectively above the law and immune to the efforts of wildlife agencies. The corrupt individuals must be identified and the alliance broken if there is to be any hope for rhinos, and the necessary steps are generally beyond the means of conservationists and wildlife officials, requiring the involvement of heads of state and key professionals at national and international levels. *Zimbabwe Wildlife*, 48.

Vegetable ivory

The Sengalese Ministry of the Environment is reported to be interested in conducting field trials of *Phytelphas macrocarpa* from Brazil. The seeds of the plant are enclosed in a liquid endosperm, which hardens on exposure to air and resembles elephant ivory in colour, texture and hardness. If successful, plantations could provide



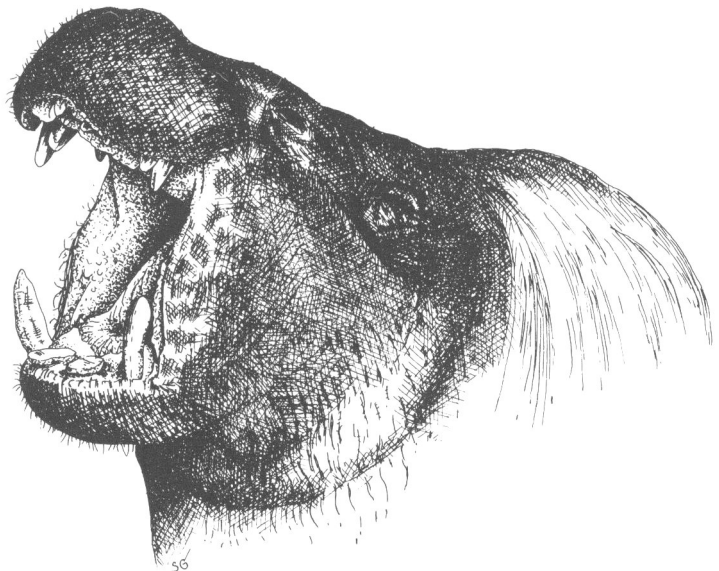
Red colobus monkeys: this species will be protected by Tiwai Island Wildlife Sanctuary (*Dawn Starin*).

alternative material for the traditional ivory carvers. *African Business*, July 1987.

Sierra Leone's new sanctuary

Tiwai Island Wildlife Sanctuary has been declared in Sierra Leone, effective from January 1987. It is the first area in the country to obtain legal protection primarily for wildlife conservation

purposes. The 1200-ha (3000-acre) island in the Moa River, about 60 km (37 miles) inland, has been farmed extensively in the past and is now covered with secondary rain forest 40–60 years old with some much older individual trees, palm swamp, riverine forest, young secondary forest and rice fields. There is a significant population of pygmy hippopotamus *Choeropsis liberiensis* and a diverse and abundant



Pygmy hippopotamus—one of the species to be protected by Sierra Leone's new sanctuary (*drawing by Shona Grant*).

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African hunting dogs—Zimbabwe is now protecting them (Mark Boulton/ICCE).

population of non-human primates—11 species, including the threatened red colobus *Colobus badius* and Diana monkeys *Cercopithecus diana*, and the western chimpanzee *Pan troglodytes verus*.

John Oates, Tiwai Island Project, Department of Biological Sciences, Njala University College, Private Mailbag, Freetown, Sierra Leone.

Marine park for Kenya

Mombasa Marine National Park has been established off Mombasa Island, Kenya. It covers 60 sq km (23 sq miles) within the Mombasa Marine Reserve, and fishing and collecting of marine organisms will be regulated there.

Swara, 10, 2.

Zambia's President to head conservation committee

The President of Zambia, Kenneth Kaunda, announced on 2 September that the threat to wildlife in his country was so serious that he will head a new, multidisciplinary conservation committee. He said that Zambia urgently needs external help in the fight against poachers and to run a mass conserva-

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tion education campaign. In Zambia's new approach the local people will participate directly in conservation and benefit directly from it, through job opportunities in tourism and cropping of wildlife. At present, many animals are killed illegally and ivory objects are sold everywhere in the country's major cities.

Via Earthtrust X* Press, 2 September 1987.

Protection for wild dog in Zimbabwe

Zimbabwe has made it illegal to hunt or remove any wild dog *Lycaon pictus* except under permit from the Director of the Department of National Parks. Numerous wild dogs have been shot on farmland, including members of a pack that was the subject of a study by a National Parks' Biologist. The wild dog population in Zimbabwe is believed to number around 400 and 3404 are known to have been shot in vermin control operations up to 1975 alone.

Zimbabwe Wildlife, 48.

Effort for black rhino

A new project in Natal, South Africa, aims to increase the country's black rhino *Diceros bicornis* population to

safe levels in a way similar to the internationally acclaimed recovery of the white rhino *Ceratotherium simum* achieved by the National Parks Board earlier this century. Africa's black rhino population has crashed from 63,000 in 1970 to fewer than 4000 now. South Africa's black rhino population numbers about 600 and is considered the safest in the continent, but there have been worrying declines even there recently. The first priority of the project is to create new breeding groups in safe areas.

Our Living World (Suppl. to Weekend Argus (South Africa), 6 June, 1987).

Farmer co-operates in rabbit conservation

The riverine rabbit *Bunolagus monticularis*, South Africa's most endangered mammal, has been the subject of an M.Sc. research project, financially assisted by the Wildlife Society of Southern Africa. Its riverine habitat has been destroyed for cultivation on at least three of the seven major rivers in its range, the central and southern Karoo Desert. The farmer on whose land the research was conducted wishes to conserve the rabbits and it is hoped that other farmers who still have areas of

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natural riverine vegetation will participate in a conservation and reintroduction programme. A captive breeding colony is being established at De Wildt Research Station near Pretoria. *African Wildlife*, **41**, 4.

Reserve in Little Karoo

A new 350-sq-km (135-sq-mile) provincial nature reserve has been created in the Little Karoo near Laingsburg in the Cape, one of South Africa's most important natural areas. It is one of the biggest reserves in the country—larger than 12 of South Africa's national parks. The Little Karoo Nature Reserve will protect five tortoise species, 34 lizard, 23 snake and eight frog species. Two lizards and one of the snakes are listed as rare or threatened in South Africa's Red Data Book. The area is also important botanically, with several endemic species and at least 15 Red Data Book plants.

Our Living World (Suppl. to Weekend Argus (South Africa), 6 June 1987).

Recovery of the shad

When the shad, a prized gamefish, declined in Natal due to overfishing, a programme to save it was set up by the Oceanographic Research Institute with the co-operation of anglers, conservationists and management authorities. It was found that the shad's spawning season coincided with the peak fishing period and measures were taken to limit anglers' daily catches, while closed seasons and a ban on commercial exploitation were introduced. The often controversial measures, which were implemented by the Natal Parks Board, eventually yielded dividends: the shad has recovered and the fishermen have been won round to the need for conservation management.

Our Living World (Suppl. to Weekend Argus (South Africa), 6 June 1987).

Silk from Botswana

The moth *Gonometa postica*, indigenous to Botswana, has been found to produce fine silk. Geoffrey Bailey, who discovered this three years ago, has been working with Botswana Game Industries Ltd to develop a village-based silk-producing industry. Research and consultation with world silk experts have shown that it is feasible, but now

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Four of 20 new stamps from Botswana, which depict some of the country's 160 mammal species. Further details are available from Crown Agents Stamp Company Ltd, Old Inn House, 2 Carshalton Road, Sutton, Surrey SM1 4RN, UK.

the size of the crop must be determined to ensure a sustainable harvest. The crop is of particular value to villagers because the moth thrives on trees, especially mopane, in degraded areas around villages where no other crop is possible.

Kalahari Conservation Society Newsletter, **17**.

Elephant reintroduced to Swaziland

Elephants have been reintroduced to Swaziland more than a century after they were exterminated there. A herd of 10, a gift from the President of the South African Nature Foundation, was released in Hlane National Park and dedicated to King Mswati III and the Swazi nation. The operation was funded by Amarula Wild Fruit Spirit in recognition of the drink company's emblem.

Our Living World (Suppl. to Weekend Argus (South Africa), 6 June 1987).

Round Island rebound

Round Island is making a spectacular recovery now that rabbits have been eradicated. The rabbit control programme was carried out in 1986 at the request of the Mauritius Government by three experts from New Zealand, spon-

sored by the Jersey Wildlife Preservation Trust and the International Council for Bird Preservation. A follow-up visit in May–June 1987 confirmed that no rabbits remained and, aided by an unusually wet rainy season, a dense growth of plants has already colonized most eroding areas and many thousands of young palms are regenerating, including over 80 seedlings of the rare endemic bottle palm *Hyophorbe amaricaulis*. The populations of the eight species of reptile are flourishing, with some individuals weighing 50 per cent more than in previous years. The project team removed seedlings of non-indigenous plants and planted seeds of *H. amaricaulis* and the hurricane palm *Dictyosperma album* var. *conjugatum*. Conservation efforts will continue, especially controlling entry to the island to prevent rats, mice and house geckos from being introduced.

World Birdwatch, **9**, 3.

Asia (excluding Indo-Malaya)

Oryx reserve enlarged

Shaumari Wild Life Reserve in Jordan is to be increased in size and called the Azraq Desert Reserve. The herd of Arabian or white oryx *Oryx leucoryx* there now numbers 73 individuals. *Al-Reem*, **27**

Oryx Vol 22 No 1, January 1988

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China exporting huge numbers of birds

China has been exporting birds at a rate that could cause huge ecological problems, according to the State Council's Environment Protection Committee. In 1985, China officially exported three million birds, but it is suspected that illegal exports make the real total considerably higher. Under China's present export system, central and local governments, collectives and individuals all have the right to export birds and the only species whose export is banned are those on the verge of extinction. *South China Morning Post*, 11 May 1987.

Mai Po marshes need protection

At China's first international conference on wildlife conservation in July 1987, delegates called for measures to protect Mai Po marshes, a mangrove reserve at Deep Bay, Hong Kong. It is an important feeding ground for migrating shorebirds and supports one per cent of the world population of Dalmatian pelicans *Pelecanus crispus*, and the largest known wintering population of Saunders's gull *Larus saundersi*, both of which are endangered. In May, China announced plans to build a new international airport on land reclaimed from Deep Bay. The end of the runway would be only 7 km (4 miles) away from the edge of Mai Po and about 23 per cent of the intertidal area of Deep Bay where birds feed would be reclaimed. More than 37,000 waterfowl were recorded in Deep Bay last January and the number increases every year, perhaps reflecting the continuing loss of wetlands in South China. *New Scientist*, 6 August 1987.

Père David's deer breed in wild

Three of the Père David's deer *Elaphurus davidianus* reintroduced into Da Feng Reserve near Shanghai, China, from British zoos in 1986 (see *Oryx*, 21, 53) calved in 1987. A further 10 fawns were born in the Nan Haizi Reserve outside Beijing, which had been stocked from a private herd in the UK. *WWF News*, 48.

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Mongolian snow leopards as trophies

Following Mongolia's newly established diplomatic relations with the US, a Dallas firm of safari organizers, Kleinburger Bros, is charging clients US\$10,000 to stalk and kill a snow leopard *Panthera uncia*. The Mongolian Government is charging a US\$14,000 trophy fee on every animal killed. Mongolia is the only country in the cat's range that does not subscribe to the international treaty protecting the species, which may number fewer than 1000 individuals in the wild. *Asiaweek*, 3 May 1987.

Crested ibis project

The oriental or Japanese crested ibis *Nipponia nippon* is the subject of a special project by the West Germany-based Brehm Fund for International Bird Conservation, which is providing equipment for research and is training three Chinese biologists in research, conservation and captive propagation of endangered species. The total world population of the ibis is believed to be 34, of which five are in captivity in China and Japan, and 29 are in the wild in China and the USSR. Seven young were reared in three nests in Shaanxi Province, China, in 1986. *Avicultural Magazine*, 93, 2.

Indo-Malaya

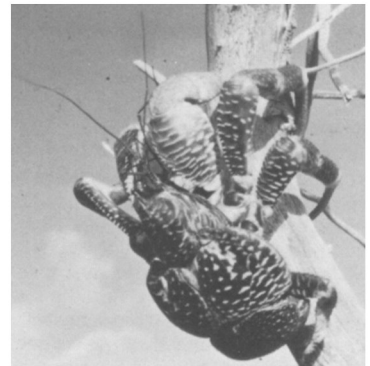
Pakistan's turtles need urgent study

Although the large, globally important population of green turtles *Chelonia mydas* nesting at Hawkes Bay and Sandspit near Karachi in Sind Province, Pakistan, has been well known for many years, virtually nothing was known about the turtles of the Mekran coast of adjacent Baluchistan Province. The 650 km (400 miles) of the province's largely undisturbed beaches and reports of human exploitation of the turtles there led Brian Groombridge of the IUCN Conservation Monitoring Unit in UK to undertake a preliminary field survey in January 1987. Villagers reported that turtles still nest in good numbers in the area and that there is a low level of local exploitation of eggs, mainly for medicinal purposes. However, they also told of large-scale commercial exploitation

by Karachi-based operators. Detailed surveys are needed urgently, and existing legislation should be used to stop turtle exploitation until a more complete picture of the marine turtle resource in Baluchistan is available. Brian Groombridge also recommends formal protection of the turtle cliff beach at Jiwani and the beach near Tak on the west side of Ormara West Bay. *WWF Pakistan Newsletter*, 6, 2.

Floods affect Kaziranga

Floods struck north-eastern India twice in July 1987, killing more than 100 people and affecting the livelihoods of two million more. Floodwaters covered three-quarters of the 165-sq-mile (427-sq-km) Kaziranga National Park, sanctuary for many endangered animals including the greater Indian rhinoceros *Rhinoceros unicornis*. *The Washington Post*, 30 July 1987.



A coconut or robber crab; the species is declining in parts of its range (A.M. Hutson).

Robber crab decline

The coconut or robber crab *Birgus latro* is reported to be decreasing in numbers in many parts of its range in the Pacific and Indian Ocean Islands because of exploitation for food and ornaments. In India, where it was once common in the Andaman and Nicobar Islands, it is now found in appreciable numbers only in South Sentinel Island, which is inhabited only by tribal people. In Indonesia it is being caught in enormous numbers for restaurants and as numbers decline the price is rising. *Davies, T. A. 1987. Environmental Awareness*, 10, 13–24.

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Thailand's controversial dam plan resurrected

When Nam Choan Dam was first proposed in the early 1970s it met with protests from conservationists and local people. The World Bank withdrew its offer of funds because of the controversy and it was eventually shelved in 1982. On 25 March 1986, however, the Thailand Cabinet quietly resurrected the plan, approving 143 million baht (US\$5.5 million) for a detailed study and the Japanese International Co-operation Agency has agreed in principle to lend funds for the project. The dam would flood 223 sq km (86 sq miles) of riverine forest in the heart of the Thung Yai Wildlife Sanctuary, affecting the lives of the tribal people and cutting off the seasonal migrations of many animals.

Asia-Pacific People's Environment Network, c/o Sahabat Alam Malaysia, 37 Lorong Birch, 10250 Penang, Malaysia.

Thai villagers stop loggers

Villagers in a remote part of north-west Thailand have acted to stop the Nankom Nan logging company from removing timber they have already cut and from further logging, despite a murder attempt on their headman. The head of Ban La Bro Ya village says the villagers are aware of the drastic floods and erosion that will occur if the trees are removed. The timber company had obtained permission to cut 5000 trees after a five-year halt to logging in the region, and they moved in rapidly with chain-saws, elephants and heavy machinery. In May and June 1987 hundreds of villagers marched to the logging site and succeeded in stopping the logging. *The Observer (London)*, 6 September 1987.

Malaysian logging threatens Thai reserve

The Perlis State Government of Malaysia is clearing the entire Mata Ayer Forest Reserve on the border with southern Thailand, ignoring the World Wildlife Fund's Conservation Strategy for Perlis. These hill forests abut the Thaleban National Park in Thailand, which at 110 sq km (42 sq miles) is relatively small and owes its richness to the fact that it is still contiguous with the

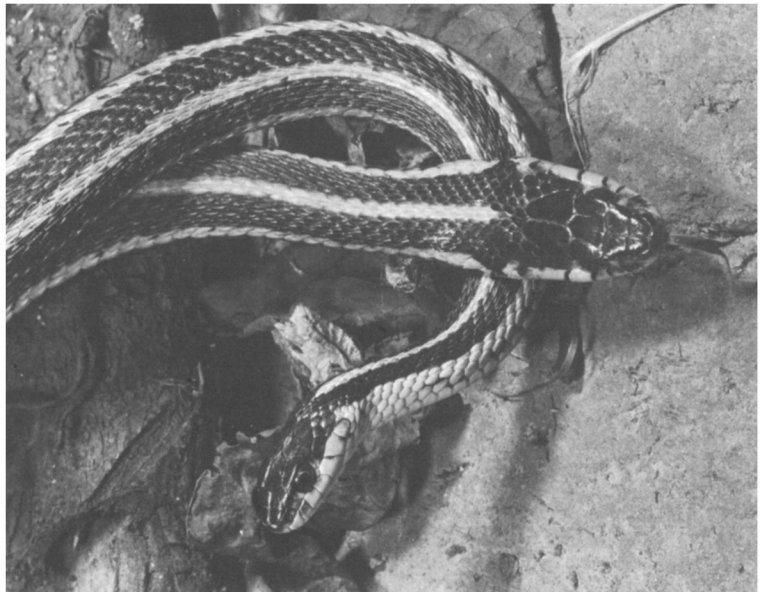


Maleo fowl, an endemic species from Sulawesi and focus of a conservation project (*John Mackinnon/ICCE*).

Mata Ayer forest. The clearance will have harmful effects in both countries, damaging water catchment in Malaysia and worsening the already severe dry-season water shortage in Perlis, and destroying the only seasonal Thai-type rain forest in Malaysia, together with

species such as the hooded pitta *Pitta sordida*, which do not breed elsewhere in Malaysia. In Thailand the logging will isolate Thaleban and larger forest animals such as hornbills and tapirs may be lost.

Bangkok Bird Club Bulletin, 4, 8.



Garter snakes are being threatened by the pet trade in Manitoba (*Joe B. Blossom/ICCE*).

Oryx Vol 22 No 1, January 1988

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Conserving the maleo

More than 200 maleo fowl *Macrocephalon maleo* chicks have been raised in captivity as part of a conservation project for this endemic bird of Sulawesi, which lays its eggs in sand heated by volcanic hot springs. The large eggs have been collected for years by local people for food, but social changes resulting from transmigration of people from Bali and Java have led to uncontrolled collecting in recent years. The conservation project is educating local people about the problem and constructing protected hatcheries. Egg collecting will have to cease and predators such as dogs removed from the areas of the nesting sites until the maleo populations have recovered. *WWF News*, 48.

North America

Too many garter snakes taken

Commercial harvesting is threatening the existence of the world's largest concentration of garter snakes *Thamnophis sirtalis* according to Stuart Macmillan, a graduate student at the University of Manitoba. The huge breeding dens of the snakes in the Interlakes region of Manitoba attract thousands of tourists, but they could disappear in 10 years if the snakes continue to be collected at the current rate—90,000 a year. Twenty years ago there were more than 100 mass dens in Manitoba; now there are fewer than 30. The harvest has grown rapidly as the red-sided, yellow-striped snakes have become popular pets—and substitutes for boa constrictors and pythons, which are now difficult to obtain.

The Globe and Mail, 4 February 1987.

Alberta's first ecological reserve

On 4 June, Alberta, Canada, designated the 10-sq-km (4-sq-mile) Kennedy Coulee Ecological Reserve in conjunction with the establishment of the 54-sq-km (21-sq-mile) Milk River Canyon Natural Area. These lands are the core of a 500-sq-km (200-sq-mile) area of prairie.

Wilderness Alberta, 17, 2.

Beehive Natural Area

In April 1987 the Alberta Government

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in Canada announced the formal designation of the 67-sq-km (26-sq-mile) Beehive Natural Area. It encompasses the eastern slopes of Beehive Mountain and Mount Lyall on the Alberta–British Columbia border and contains 9 sq km (3.5 sq miles) of old growth forest, but does not extend to cover the virgin forest of Hidden Creek, which contains some of the oldest and largest trees in Alberta and where clear-cut logging has started.

Wilderness Alberta, 17, 2.

Dioxins linked to embryo death in herons

After eggs in 57 nests at a great blue heron *Ardea herodias* colony on Vancouver Island in Canada failed to hatch in 1985, the eggs were analysed and found to contain 2,3,7,8-TCDD—one of 75 dioxins, all of which are deadly poisons. The Canadian Wildlife Service, which is researching into the use of the heron as an indicator of pollutants because it feeds in industrialized estuaries, has found dioxins in eggs before, where the colonies were near wood processing operations. There is no direct evidence that the dioxins come from sawmills, but laboratory tests show that the dioxins involved are most similar to those found in chlorophenols used by wood processing industries to kill natural organisms on wood. The Council of Forest Industries of British Columbia says that some mills have already switched to alternative chemicals, but conservationists are calling for a ban on all chlorophenols.

The Vancouver Sun, 11 September 1987.

Recovery of white pelican

For the first time ever, Canada has removed a species from its list of threatened species. The American white pelican *Pelecanus erythrorhynchos* had declined because of harassment by fishermen, and by the 1970s the Canadian population had dropped to fewer than 15,000 breeding pairs. It was listed as threatened in 1978 and in 1984 Canada Life Assurance Co., which had used the bird as its corporate symbol for 140 years, paid for research and a public information campaign, mainly in Manitoba and Saskatchewan. As a result fewer people now disturb the birds

and the population has increased to 50,000 pairs.

The Globe and Mail, 28 May 1987.

Co-operation over caribou

The US and Canada have signed an agreement calling for co-operative efforts to conserve the 186,000-strong Porcupine caribou *Rangifer tarandus* herd, which migrates between Alaska and Canada. The herd is named after the Porcupine River, which drains a significant portion of the caribou's 96,100-sq-mile (249,000-sq-km) range in north-east Alaska and north-west Canada.

Outdoor News Bulletin, 7 August 1987.

South Moresby a park at last

On 11 July, Canada's Prime Minister and the British Columbian Premier signed an agreement designating South Moresby a national park, Canada's 33rd. It embraces 138 islands covering 140,000 ha (540 sq miles). The islands have some of the largest populations of rare birds and plants in North America, including Peale's peregrine falcon *Falco peregrinus pealei*. The British Columbian Government dropped its demand for 10 more years of logging on South Moresby, favouring a gradual phase-out instead.

The Vancouver Sun, 7 July 1987; *National Parks*, September/October 1987.

Two plants and seven animals listed

During April 1987 two plants and seven animals were added to the US List of Endangered and Threatened Species. The plants are both endemic to scrub habitat in central Florida—the wide-leaf warea *Warea amplexifolia*, an annual, of which there are only two populations growing on Lake Wales Ridge, and the scrub lupine *Lupinus aridorum*, reduced to about 16 sites. Their habitat has been destroyed by urbanization and conversion to orange groves. Five endemic mussels from the Tombigee River in Alabama and Mississippi—Marshall's *Pleurobema marshalli*, Curtus's *P. curtum*, Judge Tait's *P. taitianum*, the stirrup shell *Quadrula stapes*, and the penitent mussel *Epioblasma* ('*Dysnomia*) *penita*—were

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listed because their remaining habitat is threatened by gravel dredging and siltation. Fewer than 50 cave crayfish *Cambarus zophonastes* exist in a single cave pool in the Ozark Mountains of Arkansas and they are threatened by ground water contamination. The Waccamaw silverside or glass minnow *Menidia extensa* is a small fish endemic to Lake Waccamaw, North Carolina, and it was listed because a high rate of phosphate input is making the lake eutrophic.

Endangered Species Technical Bulletin, XII, 5–6.

Cheetah's diet has damaging contents

Cheetahs in North American zoos have not been thriving. The latest figures show that in 1985 there were 29 deaths, most attributable to liver degeneration, and only 18 young born, seven of which died before reaching maturity. The probable cause has been shown to be the accidental presence of reproductive hormones in the cheetahs diet—a commercially prepared mixture of meat and soyabean products. Analysis revealed the presence of daidzein and genistein, which come from soyabeans and act as weak oestrogens. These have been shown to cause liver damage and can also damage the uterus. In contrast to the cheetahs in North American zoos, captive breeding groups in South Africa, which are fed on whole carcasses, breed successfully and show no signs of liver degeneration.

New Scientist, 1 October 1987.

Ferrets breed

Six young black-footed ferrets *Mustela nigripes* were born on 6 June 1987 at the Wyoming Game and Fish Department's Sybille captive breeding facility. Several other litters were anticipated. The captive population now numbers 24. This breeding success in the first year of the programme offers real hope for the re-establishment of the species in the wild.

Endangered Species Technical Bulletin, XII, 5–6; *International Wildlife*, 17, 5.

Diseases threaten Minnesota wolves

The 1200-strong Minnesota population 56

of grey wolf *Canis lupus* is threatened in the long-term by human development of its habitat, but two new problems have appeared—canine parvovirus and heartworm. Both are potentially fatal and are new to wild grey wolves. Canine parvovirus is a newly discovered disease believed to be an escaped laboratory artefact and first found in 1976 in domestic dogs. It is spread via faeces and reached the dog population in the heart of the Minnesota wolf range in 1979, killing 11 of 12 wolf pups and yearlings in a captive wolf colony north of Minneapolis. Heartworm is spread by mosquitoes and has gradually made its way northwards from the southern US, being first found in dogs in the Minnesota wolf range in 1986.

Endangered Species Technical Bulletin, XII, 5–6.

Hamburger connection broken

Burger King, one of America's largest fast-food chains and the target of a US consumer boycott by the Rainforest Action Network, announced on 20 July 1987 that it would no longer buy beef from tropical rain-forest areas and would rid its system of all rain-forest beef by 1 September 1987.

Rainforest Action Network, September 1987.

Illness strikes rare cranes

An unknown illness, which first appeared on 19 September 1987, at the Patuxent Wildlife Research Centre in Maryland, USA, killed 14 cranes, including the endangered whooping cranes *Grus americana* and one endangered Mississippi sandhill crane *G. canadensis*, and affected more than 100 others. By the end of September the sick birds appeared to be improving after treatment with fluids, antibiotics and vitamins, and no death had occurred since 27 September.

Department of Interior News Release, 30 September 1987.

Selenium suspected in bird deaths

When early in 1987 millions of fish and 1500 birds died at Stillwater Wildlife Management Area in Nevada in the US, researchers blamed avian cholera for the birds' deaths (see *Oryx*, 21, 190).

Now scientists suspect that the birds' immune systems were weakened by the accumulation of trace elements—selenium, mercury, boron and arsenic. A young pelican was found recently with a grossly twisted bill, the kind of deformation caused by selenium at Kesterton National Wildlife Refuge in California, and tests on pelicans have revealed selenium concentrations as high as 51 parts per million. Deformities are known to occur at 15–20 parts per million. The likely source of mercury is sediment from mining in the 1800s; it is not known where the boron, selenium and arsenic are coming from, but it could be from effects of irrigation. Other sites of contamination and deformed birds are being discovered regularly now in California, Nevada and Utah. The US Bureau of Reclamation is funding research at Kesterton that could produce a biological solution to the selenium contamination problem. The method employs fungi that can turn toxic forms of selenium into a non-toxic gas.

New Scientist, 3 September 1987.

California acts for monarch

The California Legislature has passed a Bill that requires the Department of Fish and Game to make an inventory of the areas of critical habitat for winter roosting sites for monarch butterflies *Danaus plexippus* and to make recommendations for protection of the habitat, including possible State acquisition of those areas. The wintering sites of the western population of monarch butterflies in the US are located almost exclusively in the coastal regions of California and of 45 known sites seven have been destroyed in the past three years.

Los Angeles Times, 29 August 1987.

Sea otter range to be expanded

Up to 70 Californian, or southern, sea otters *Enhydra lutris nereis* are being captured in their existing range around Morro Bay, central California, and released at San Nicolas Island off the southern Californian coast. The US Fish and Wildlife Service, which is carrying out the reintroduction plan, predicts that San Nicolas will be able to support at least 280 sea otters. It is managed by the US Navy, providing additional protection for the new colony, and is separated

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from other islands and the mainland by wide, deep channels, which should help keep otters in the area. In order to mitigate the effects of impacts on shellfish resources, any otter that strays away from the vicinity of San Nicolas will be captured and returned to the mainland population or to the new colony. In the 1987 census 1650 otters were counted in California.

Department of the Interior News Release, 24 August 1987.

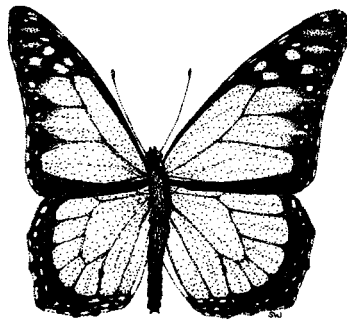
TBT in otters

Tributyltin (TBT), an 'anti-fouling' additive in boat paint, which has been proved exceptionally toxic to aquatic invertebrates (see *Oryx*, **20**, 217–220 and **21**, 113), has been found in the tissues of five dead Californian, or southern, sea otters *Enhydra lutris nereis*. The highest TBT level recorded was 1.2 parts per million, 50,000 times the concentration known to be harmful to oysters. The significance of the findings is not yet known, but it is hoped that the proof that TBT can accumulate in mammals will stimulate further research. Because of the potential human health hazards posed by TBT accumulation in fish, US state and federal legislation has been introduced to ban the sale and application of TBT paints on commercial and recreational vessels. However, the US Navy has proposed using TBT on its entire fleet.

The Otter Raft, 37.

Woundfin threatened by shiner

The endangered woundfin minnow *Plagopterus argentissimus* is being replaced by an exotic fish species, the red shiner *Notropis lutrensis* in its last stronghold. Red shiners had already replaced the minnows in the Nevada and Arizona sections of the Virginia River, and it had been hoped that the Virgin River Narrows, a 10-mile (16-km) long canyon, which is usually dry, would stop the spread of the shiner. However, the exotic species has now been discovered above the Narrows in the Utah section and near St George, 84 per cent of the fish collected at the end of 1986 were red shiners compared with only 3.2 per cent of woundfin. The fear now is that red shiners will move above the Washington Fields Irrigation Dam



The monarch butterfly, threatened on migration
(drawing by Sarah Wroot).

and replace woundfin in the last 8–10 miles (13–16 km) of the Virgin River. *Endangered Species Technical Bulletin, XII, 5–6.*

Leopard frog die-off

Leopard frogs are declining in the US, according to the US Fish and Wildlife Service, particularly in the south-west. Populations of several species of leopard frogs and other *Rana* species are disappearing, some experiencing sudden, complete adult die-offs. Herpetologists meeting in Phoenix, Arizona in April 1987 recommended that the Service pursue toxicological studies, concentrating on the lowland leopard frog *Rana yavapaiensis*, which may be experiencing the same type of adult mortalities that resulted in the extirpation of the Tarahumara frog *R. tarahumarae* from the US. *Endangered Species Technical Bulletin, XII, 5–6.*

Squawfish rediscovered

Two adult endangered Colorado squawfish *Ptychocheilus lucius* have been captured in the San Juan River, New Mexico, by biologists. It is the first confirmation of the species in New Mexico for over 25 years and further surveys are being done. *Endangered Species Technical Bulletin, XII, 5–6.*

Snowbells in cages

A new population of Texas snowbells *Styrax texana* was planted in 1986 on a private ranch in the endangered shrub's

native Hill County habitat west of San Antonio, Texas. Until then only 39 wild plants were known, mostly on cliffs inaccessible to livestock and deer. The 25 seedlings grown by the San Antonio Botanical Gardens were planted in protective wire cages at various cliffside locations and they will be monitored to determine which sites are most suitable for the plant.

Endangered Species Technical Bulletin, XII, 5–6.

Whooping crane habitat protected

The US Nature Conservancy has purchased the 18 sq miles (47 sq km) of Matagorda Island, Texas, that contain winter territories of several whooping crane *Grus americana* family groups and have a suitable habitat for expansion of the Aransas flock. The US Fish and Wildlife Service has paid for a portion of the acquisition, and as funds become available will purchase the rest from the Conservancy over the next two years.

Endangered Species Technical Bulletin, XII, 5–6.

Insecticide spraying threat to monarchs

The State of Florida's plan to spray insecticides to control dipteran flies along the Panhandle coast from September to December has been criticized by Lincoln P. Brower, Professor of Zoology at the University of Florida. He says that the peak southward migration of a substantial portion of the entire north-eastern North American population of monarch butterflies *Danaus plexippus* occurs during that time, that the Panhandle is one of their principal routes and that spraying could wipe out 50 per cent of the migrating butterflies.

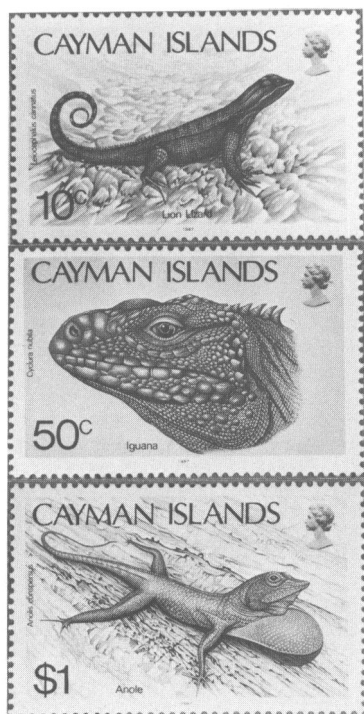
Central America

Marine reserve for Belize

Hol Chan Marine Reserve, a 4.5-sq-mile (12-sq-km) area at the south end of Ambergris Caye in Belize, was made a national park on 2 May 1987, following the combined efforts of the New York Zoological Society, Belize Audubon Society, World Wildlife International, World Wildlife Fund, the Peace Corps

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and the United States Agency for International Development.
Belize Promotions, May 1987.



Three stamps issued by the Cayman Islands in August 1987. From top to bottom: the lion lizard *Leiocephalus carinatus* lives at the foot of cliffs among coastal rocks and debris washed up by the sea; the iguana *Cyclura nubila* inhabits limestone scrubland and is rare, threatened by being a favoured human food; the anole *Anolis conspersus* is arboreal and most abundant in relatively open forests. Details of these stamps are available from Crown Agents Stamp Company Ltd, Old Inn House, 2 Carshalton Road, Sutton, Surrey SM1 4RN, UK.

Nicaragua saves forest

The Nicaraguan Government cancelled a timber contract with a Costa Rican logging company on 18 June 1987, after protests from environmental groups and individuals within and outside the country. Nicaragua's Minister of Agricultural Development and Land Reform said that after the contract was 58

studied he concluded that it was illegal under the country's conservation laws. The logging would have destroyed virgin forest in the San Juan River watershed on the Nicaraguan–Costa Rican border (see *Oryx*, 21, 191). *Atlanta Constitution*, 18 August 1987.

Costa Rica swaps debt for national park

Costa Rica has launched a programme through its Ministry of Natural Resources to swap its foreign debt for conservation. Potential donors are being asked to buy \$5.4 million of outstanding debt, to be recycled through the Central Bank for local currency bonds. On the strength of the high interest bonds, money can be borrowed at a lower rate of interest for land acquisition, park management and reforestation, and when the bonds mature the interest can be used to pay off the local loan as well as for more conservation. Costa Rica's programme aims to convert a little more than 10 per cent of its total debt burden and Bolivia's similar programme (see *Oryx*, 21, 255) about 15 per cent. The first area to benefit from the Costa Rican programme is in Guanacaste Province, where two new protected areas have been declared, making three-quarters of the proposed Guanacaste National Park secure.

New Scientist, 6 August 1987; *The New York Times*, 5 September 1987.

Woodpecker catalyst

The finding of the ivory-billed woodpecker *Campephilus principalis* in Cuba in 1986 (see *Oryx*, 20, 262) has had a galvanizing effect on conservation in the country. Following the find, each provincial governor was instructed to appoint an environmental officer and a detour was made in a major north–south road that would have crossed the woodpecker area. The authorities have enlarged the ivory-bill protected area to 220 sq km (85 sq miles), restricted access to scientists and are sending teams into the difficult to reach Jaquani reserve where ivory-bills may still exist. They are also building two biological field stations and have started an education programme for Havana's school-children, taking them to camps for environmental courses.

World Birdwatch, 9, 3.

South America

Oil exploration still threatens Yasuni

Blocks in the western half of Yasuni National Park in Ecuador have already been opened up for oil exploration and exploitation, but the future of the eastern half of the park has not been decided (see *Oryx*, 21, 255). It is the tribal territory of an unknown number of Huaorani (Waorani) Indians, some still uncontacted. If oil concessions and roads are permitted there the future of these people will be grim. The best way to prevent the oil exploration would be to have the park declared a Biosphere Reserve under UNESCO's Man and the Biosphere Programme so that it would receive international monitoring and protection.

Rainforest Action Network, July 1987.

US AID for Peruvian park

The US Agency for International Development (AID) has granted \$200,000 to the US Nature Conservancy and its sister organization in Peru, Fundacion Peruana para la Conservacion de la Naturaleza, to establish the Yanachaga-Chemillen National Park in the province of Oxapampa, 40 km (25 miles) east of Lima. The park is key to the larger Central Selva Project, which seeks to establish a model for the successful management of Amazon forests and their sustainable resources by native people. This project is the first to be funded with AID money earmarked by the US Congress for the preservation of biodiversity. The park, which encompasses the rugged Yanachaga range and much of the watershed of Rio Palcazu, was legally created in August 1986. There are tropical wet forest and high altitude dwarf forest as well as a number of rare and endangered species.

The Nature Conservancy, 14 September 1987.

World Bank helps a conure

The greater Patagonian conure *Cyanoliseus patagonus byroni* is to benefit from the World Bank's new decision to take wildlife conservation into account when it backs development projects. It is one of only two entirely Chilean parrots and it became so rare that it was given

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formal protection by the Government five years ago. The birds face two main threats—capture for the pet trade and killing because they sometimes eat maize and wheat—and the Government is tackling these problems. By 1983 it had been eliminated from all but 12 sites (it breeds only in perpendicular soft cliffs) and the World Bank-funded Pehuenche Hydroelectric Project will flood two of these. The Bank is helping to finance a conservation programme that will translocate parrots from the sites to be flooded to recently abandoned breeding sites and will run captive-breeding, education and surveillance programmes. *World Birdwatch*, 9, 3.

Australia/Antarctica

Australia's new move for endangered species

Australia's Labour Government has taken a major initiative in the protection of the country's endangered species and their habitats. The Hon. Barry Cohen MP, Minister for Arts, Heritage and Environment, has announced the establishment of an Endangered Wildlife Advisory Committee with the role of formulating and co-ordinating a national strategy for the conservation of threatened species, including the preparation of draft habitat protection legislation. An Endangered Species Unit within the Australian National Parks and Wildlife Service will be responsible for the implementation of the programme. *Michael Kennedy, Private Secretary to the Hon. Barry Cohen MP, Parliament House, Canberra, ACT 2600, Australia.*

Butterfly's survival depends on land swap

When a company of developers, Esanda Finance, discovered that a site at Eltham, a suburb of Melbourne, Australia, which it was about to bulldoze, contained two core breeding grounds of a nearly extinct butterfly, the Eltham copper *Paralucia pyrodiscus lucida*, it halted work to allow scientists to study this largely unknown insect. The studies revealed that the butterfly's life-cycle, being intimately bound up with a particular shrub and a protective ant, meant that the colonies could not

be moved successfully and that the only solution was to withhold the land from development. Esanda is willing to swap land, but the Government says none is available and that it cannot afford to buy the land from the company. The community at Eltham and its MP are planning a fund-raising campaign to save the butterfly site, and Eltham Council has offered to swap land with Esanda as long as the State Government purchases an additional area of twice the value.

The Bulletin (Australia), 19 May 1987.



Four stamps issued in September 1987 show the Norfolk Island green parrot *Cyanoramphus novaeseelandiae*.

There are about 15 individuals left in the wild and a captive-breeding programme is under way. Norfolk Island was declared a national park in January 1986 and rat control and forest regeneration programmes being carried out by the Norfolk Island Administration and the Australian National Parks and Wildlife Service should improve the parrot's chances of survival. The revegetation of nearby Philip Island following the eradication of rabbits means that an alternative predator-free habitat will be available for release of captive-bred birds. Further details are available from Crown Agents Stamp Company Ltd, Old Inn House, 2 Carshalton Road, Sutton, Surrey SM1 4RN, UK.

First for freckled duck

The first reported captive breeding of the threatened freckled duck *Stictonetta naevosa* has taken place in Australia in a colony maintained by the Commonwealth Scientific and Industrial Research Organization at Canberra. Two females have hatched young, another has incubated and a further three have laid eggs. A number of young have been reared. *Avicultural Magazine*, 93, 2.

Yellow-footed rock-wallaby needs help

The yellow-footed rock-wallaby *Petrogale xanthopus* was first reported in New South Wales, Australia, in 1966. A study by the state National Parks and Wildlife Service has found that there is only one, geographically isolated, population in the state, of fewer than 250 animals in two separate colonies in the Gap and Coturaundee Ranges, where they are confined to two cliff systems and two outcrops. In order to ensure the species's survival the researchers recommend extending the boundaries of Mootwingee and Coturaundee National Parks to include the foraging areas and watering places of all known groups. They also believe it would be wise to re-establish a third colony at Bynguano Range, also in Mootwingee National Park, where the species is known to have occurred until recently. This rare species also occurs in South Australia and Queensland.

Lim, T. L. and Giles, J. R., 1987. Australian Wildlife Research, 14, 147–161.

Old departments protect new areas

Just before two of New Zealand's government departments were replaced with the new Department of Conservation on 1 April 1987, they made two conservation gains. The 111-year-old Department of Lands and Survey opened the 740-sq-km (290-sq-mile) Whanganui National Park, New Zealand's 11th, and the 68-year-old Forest Service dedicated the 870-sq-km (340-sq-mile) Tasman Wilderness in North-West Nelson, which protects a sizeable section of the Karamea River. *Bush Telegraph*, 28 (*Forest and Bird*), 18, 2.

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Mining threatens serpentine endemics

The North Cape Scientific Reserve at the northern tip of New Zealand is home to more endemic species than any equivalent area in the country. Fifteen plants and at least four invertebrates are found only there, almost all being confined to the 17 ha (430 acres) of serpentine rock in the 638-ha (1576-acre) reserve. A serpentine mine, for magnesium fertilizer, which was small in the 1960s when the reserve was new, grew rapidly in the 1980s, and the network of roads and the mine site itself have left an eroding scar, 25 km (16 miles) long. Following a report from the Royal Forest and Bird Protection Society, and a recommendation from the National Parks and Reserves Authority stating that there is no need for serpentine, the Lands Minister has recently declined a new licence, but the area is still open to further mining applications and the Society is calling for the Minister of Energy, Lands and Conservation to implement a Section of the Mining Act to set apart permanently the North Cape Scientific Reserve from mining. *Forest and Bird*, 18, 2.

Swamp forests cause concern

New Zealand's ancient kahikatea *Dacrydium dacrydioides* swamp forests now amount to no more than 2 per cent of their original extent. Mature kahikatea forests survive only on the narrow coastal plains of South Westland, protected by their remoteness and surrounding physical barriers. Timber mill owners now want to log them as they exhaust available indigenous timber to the north. Conservationists want the forests included along with other publicly owned natural lands of South Westland in the South-West New Zealand World Heritage Area. The declining bird species of New Zealand's swamps—fernbird *Bowdleria punctata*, for example—find a stronghold in these forests. They are also important for bats—just over half the bat records from South Westland are from these forests. *Forest and Bird*, 18, 2.

Meetings

Reef symposium

The 6th International Coral Reef Symposium will be held at James Cook University, Townsville, Australia, 8–12 August 1988. Details from: 6th International Coral Reef Symposium, ACTS, GPO Box 1929, Canberra, ACT 2601, Australia.

Ungulate conference

An International Ungulate Behaviour and Management Conference will be held 16–22 May 1988 at Texas A&M University, College Station, Texas, sponsored by the Department of Wildlife and Fisheries Sciences. Details from Dr Elizabeth Cary Mungall, 342 Double Tree Drive, Lewisville, Texas 75067, USA.

People

Dr Brian Bertram has been appointed Director of the Wildfowl Trust, UK. He was formerly Curator of Mammals at the Zoological Society of London.

Dr Jeremy Greenwood has been appointed Director of the British Trust for Ornithology.

Dr Martin Holdgate has been appointed Director Designate of the IUCN. He was Chief Scientist at the UK's Department of the Environment.

Obituary: Kalang Anak Tot

Primatology in South East Asia prematurely lost one of its best friends on 14 April 1987, when Kalang Anak Tot died, aged 49, apparently from appendicitis. Kalang was a Jah Hut Orang Asli (aborigine) from Pahang in Peninsular Malaysia. He played a crucial part in primate field studies at the Kuala Lompat Post of the Krau Game Reserve

for 17 years, starting in 1970. His knowledge of the tropical rain forest, and his abilities to identify trees, locate and follow primate social groups, and to collect systematic data on feeding, ranging and social behaviour contributed significantly to several post-doctoral studies, and, perhaps more importantly, to about 12 doctoral dissertations—on squirrels, birds and trees, as well as on primates—submitted to the Universities of Cambridge, Oxford, Aberdeen, Malaya, Berkeley and Harvard, and a master's thesis to Universiti Pertanian Malaysia. He contributed to about 25 projects in all, some involving travel to other sites in the Peninsula, such as Pasoh, Tekam and Lima Blas, from which more than 60 scientific papers have resulted. His expertise and energy, and his cheerful disposition (especially in adversity), were essential to the success of this work. Our comprehensive understanding of the rain-forest community of plants and animals in Peninsular Malaysia just would not be where it is today without his contribution.

This collaboration has perhaps helped to perpetuate the traditional knowledge and wisdom of the Jah Hut, a proto-Malay people of the central part of the Peninsula. Inevitably, as the Jah Hut become more integrated into the mainstream of Malaysian life—as they become more 'modern'—much of their heritage of forest knowledge is likely to be lost. Having lived in the rain forest for centuries they have a rich reservoir of environmental knowledge, and their spiritual beliefs are fascinating. Modern cultural norms tend to be bewildering and fearful to such people; indeed, in refusing to seek modern medical aid before he died, Kalang can be seen as a victim of these stresses. Ways are now being investigated to perpetuate his memory and some of his 'ex-students' of the forest have clubbed together to help his family through a difficult time.

David Chivers, Sub-Department of Veterinary Anatomy, University of Cambridge, UK.