

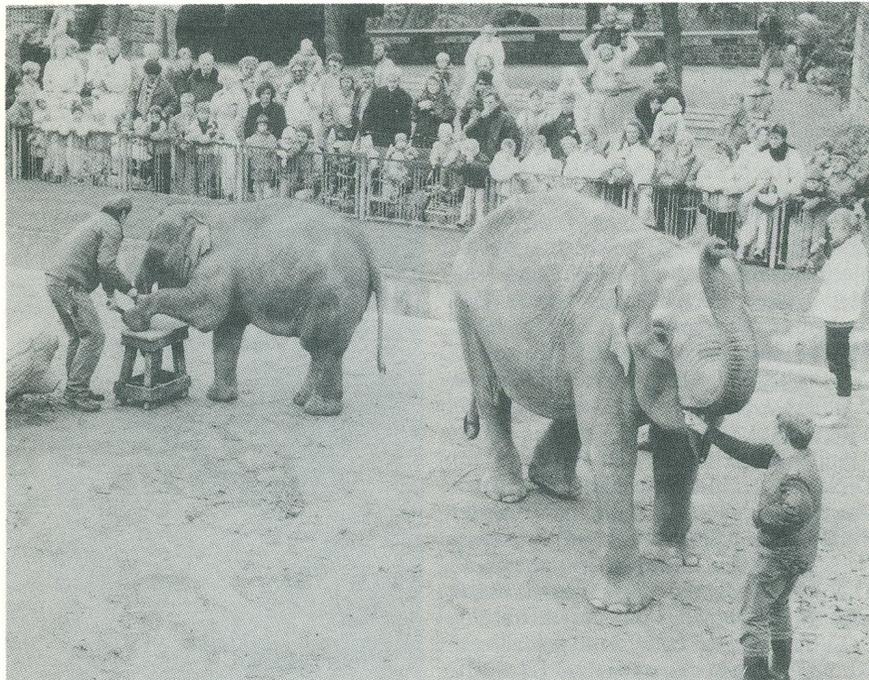
June and November 1989: 1 ring-tailed lemur, 1.0 black lemur, 1 fat-tailed dwarf lemur, 3 pygmy marmoset, 4 golden lion tamarin, 2 white-lipped tamarin, 2 Goeldi's monkey, 1.0 Bornean orangutan, 3 mara, 1.0 Californian sealion, 1.1 Przewalski horse, 0.1.1 onager, 0.1 llama, 0.1 guanaco, 0.2 wapiti, 0.1 Bactrian wapiti, 0.1 Chilean pudu, 1 Rothschild giraffe, 1 oystercatcher, 2 Knysna turaco, 3 kookaburra, 7 *Chelodina longicollis*, 11 *Chelodina novaeguineae*, 3 *Geochelone carbonaria*, 29 *Emydura albertisii*, 7 *Paleosuchus palpebrosus*, 3 *Amphibolurus vitticeps*, 18 *Crocodylus niloticus*, 7 *Physignathus cocincinus*, 3 *Eublepharis macularius*, 8 *Chamaeleo bitaeniatus*, 3 *Anolis equestris*, 14 *Morelia spilotes variegata*, 17 *Elaphe guttata*, 12 *Elaphe helena*, 28 *Elaphe obsoleta*, 1 *Elaphe tainiura friesei*.

Copenhagen Zoo, Denmark

In 1988 virus infection cut the Danish population of common seals by two-thirds, but the zoo seals were safe and sound. Three pups were born in the summer of 1989: unfortunately the first one died a few days after the birth because the mother neglected it, but the other two – a male and a female – are thriving and gain weight daily. Our seals last bred successfully 11 years ago, but then the pup was hand reared because the mother rejected it. Due to the disturbed behaviour patterns of some hand reared animals, we refrain from hand rearing in most cases; but the female seal born in 1978 proves that hand rearing can have a happy outcome, for she is one of the two females who have now produced viable pups.

During the last year visitors have

Elephant training display at Copenhagen Zoo.



been able to watch some animals being trained by their keepers. This is a stimulating and exciting activity for the animals; but it also takes place for the visitors' sake. Research has shown that one of the activities zoo visitors value most is a keeper interacting with his animals. Well-planned training programmes are also an opportunity to illustrate important aspects of the natural history of the species. A commentary accompanying the displays emphasizes this point. For example, when the sealions are trained to stand on their front flippers and arch their backs, as in a traditional circus act, this performance highlights the animals' strength and agility, vital characteristics of an aquatic predator. Again, displays can draw attention to aspects of husbandry – when the elephants lift their legs in the training programme, this is not a trick they have learned to please the visitors, but an important part of the daily routine in the Elephant House, enabling the keepers to check and care for the animals' feet. We now have plans to train several of the domestic species in the zoo – camels, reindeer, yaks, etc. – so that not only our two tame llamas will walk the zoo's paths, but perhaps a whole caravan of animals which man has been dependent on for thousands of years.

Fossil Rim Wildlife Center, Texas, U.S.A.

In the past year Fossil Rim has assembled a major herd of white rhinoceros, which it is hoped will not merely breed, but also make possible basic research into why this species has until now proved so difficult to breed in captivity. At present, the white rhino's situation is almost as critical in captivity as in the wild, with zoo births barely outnumbering deaths. For example, only seven calves were born in the United States in 1988, and six in 1987, of whom three died within a

month. A white rhino *may* live 60 to 70 years in captivity: norms have not been established. Prime breeding years *may* be between the ages of 20 and 30, but no one really knows. Nobody knows the age at which a young rhino is capable of breeding, much less the stimuli that may result in breeding. The problem is compounded by the white rhino's long gestation period (16 to 18 months), and the fact that after exhaustive research neither accurate estrus nor pregnancy tests exist. We even lack adequate knowledge of their social habits.

Fossil Rim's herd currently consists of three bulls, three cows and one male juvenile. A fourth cow is expected shortly from the San Diego Wild Animal Park. Two year old juveniles like the one at Fossil Rim are considered calves. But we have determined that this young bull can ejaculate when artificially stimulated, which in turn has led to an important juvenile research program. The theory has been advanced that older captive rhinos have lived in pairs so long that they have developed something akin to platonic relationships. Two male and two female rhinos in Fossil Rim's collection certainly seem to conform with such a theory. Their ages range from 16 to 30 years, none have bred to this date, and it is believed they have been in sibling relationships (but not with each other) since they were calves. They have also been kept until now in relatively small pens.

The rhino facility at Fossil Rim, constructed in late 1988, duplicates as closely as possible natural breeding conditions. Currently one bull and two females occupy a large, 13 acre pasture – quite different from the typical rhino facility in a zoo. A second, much smaller, pasture is located across from the main facility and holds the second bull, who acts as a competitor. All four can move back and forth to an elaborate rhino barn, but even there the lone male is kept apart from the herd. A behavioral study indicated that the

original lone 'stimulator' bull showed normal reproductive behavior, while the primary herd bull did not. They were therefore switched, but so far, in the absence of rhino pregnancy tests, with unknown results.

A third male and female pair arrived at the facility in November 1989. Both were born in the wild and were approximately 13 years old when they were moved from San Diego Wild Animal Park to a ranch in Texas. They mated immediately on arrival at the ranch in March 1983, but the resultant calf was still-born and the date of its birth was not noted; it is assumed to have been around July 1984. They bred again no more than two or three months after the still-birth, and a male calf was born in November 1986. Now, three years later, it is believed that the female was pregnant on arrival at Fossil Rim.

Our mission is to propagate endangered white rhinos, but obviously there is more to this than just successful breeding. A primary objective now is to set up a capture/restraining routine that may be easily carried out on a daily basis. If such a routine can be devised, then procedures for drawing blood for various tests will be established and base lines drawn. Urine, feces, even uterus and semen assays will become possible over time if the capture/restraining methodology can be implemented, and the white rhino data banks will grow. White rhino propagation presents unusual problems and opportunities, because of the animal's size and temper. Success will come with time – but only if there is time.

Gettorf Animal Park, West Germany

One of the most important births of 1989 at Gettorf took place on 15th December, when Lola, the female white-handed gibbon (*Hylobates lar*), gave birth to a healthy infant (sex still undetermined). Lola, who has raised young before, is an excellent mother.

The male, who was in the same cage during the birth, was even more excited than the female and sang all day long.

Other species which bred during 1989 are: rhea, moustached parakeet (*Psittacula alexandri*), dusky lory (*Pseudeos fuscata*), black-capped lory (*Lorius lory*), macaw hybrid (*Ara ararauna* × *A. macao*), crested pigeon, cotton-top tamarin, common marmoset, squirrel monkey, Diana monkey, rhesus macaque, pigtail macaque, alpaca, eland, mouflon and Barbary sheep.

Granby Zoological Garden, Quebec, Canada

Granby closed its primate pavilion in October 1989. There will be no primates in the zoo for the next four years. During this time we expect to build a new primate house exclusively for New World monkeys. We are still trying to find a good home for our present apes.

The following mammals, birds and reptiles were bred at Granby during the period 1st January to 31st October 1989: 0.2 Bennett's wallaby, 2.2 ring-tailed lemur, 1.0.3 Canadian beaver, 0.0.4 grey wolf, 0.2.9 European polecat, 3.3 white-nosed coati, 4.0.1 puma, 0.0.1 Canadian lynx, 3.0.1 jaguar, 1.2 Siberian tiger, 0.3 grey seal, 0.2 Sicilian donkey, 0.1 hippopotamus, 0.2 red deer, 1.0 American elk, 0.1 woodland caribou, 5.7 white-tailed deer; 4.3 fallow deer, 0.2 prairie bison, 3.0 scimitar-horned oryx, 6.5 pygmy goat, 4.3 Barbary sheep, 0.0.1 black-footed penguin, 0.0.5 black swan, 0.0.4 ruddy shelduck, 0.0.3 roadrunner, 0.0.10 common peafowl, 0.0.7 blue-and-yellow macaw, 0.0.5 hill mynah, 0.0.4 leopard gecko, 0.0.4 African fat-tailed gecko, 0.0.1 Burmese python, 0.0.7 mangrove snake, 0.0.10 gopher snake, 0.0.8 Texas ratsnake, 0.0.26 California kingsnake, 0.0.9 Sinaloan milksnake.

Guernsey Zoo, U.K.

Our female two-toed sloth took everyone by surprise in October by producing yet another baby, only a year after giving birth to her last one. As ever she has proved to be an excellent mother, despite the fact that last year's youngster insisted on being carried around with the newborn one. This caused us considerable concern at first, as we were afraid the mother might not be able to suckle the baby adequately; but thankfully our worries were unfounded and she coped admirably.

In November Oliver, the three year old lar gibbon, departed on loan to a zoo in Wales to take part in their breeding programme. Only ten days later his mother successfully gave birth to another infant. Our programme for the captive breeding of marmosets and tamarins is proving very successful. London Zoo has sent us a female

common marmoset, to bring in new blood to our group. Last year's white-lipped tamarin female has been paired with the male we received from Reading University, which now gives us two groups of this species. At least two of our squirrel monkeys seem likely to give birth this winter, though we are not sure of this as they seem to expand and contract quite unpredictably.

This winter will see the building of the new agouti cage. At present we have sixteen animals, so it should be a very interesting exhibit. It is planned to allow the squirrel monkeys access to the new enclosures, as we have found in the past that these animals get on very well together.

The Guernsey Post Office and the Zoological Trust of Guernsey joined forces in 1989 over the issuing of a set of five stamps depicting Animals of the Rainforest. The designs, by Anne

Two-toed sloth and infant at Guernsey Zoo.

