

elephant house an exhibition centre will be constructed, opening in June, offering visitors all kinds of information on elephant conservation. The pavilion will be an outpost of the Expo 2000 world's fair in Hannover. Opera enthusiasts can enjoy Georges Bizet's *Carmen* from 4 June through 1 October. The Tierpark's largest pond, virtually a small lake, has been drained to permit construction of a moated stage that can be flooded when not in use. Germany's largest tent will be constructed over the stage and the surrounding bank supporting the tiers for 2,000 people. Neither rain nor sun will then be an excuse not to visit, at least, Hagenbeck's version of *Carmen*.

Herman Reichenbach

HOWLETTS AND PORTLYMPNE WILD ANIMAL PARKS, U.K., Summer 1998 to Summer 1999

Extracts from *Help Newsletter* No. 21

Primates

At Howletts, 13 successful births were recorded, most notably that of another moloch gibbon – the tenth surviving infant of this critically endangered species to be born here. Our population of nearly 40 Javan langurs (*Trachypithecus auratus*) is now divided between Howletts and Port Lympne, with each collection holding three groups. This has doubled to six the number of males in a breeding situation, and allows for two poorly represented genetic lines to be increased. To integrate the 1998 Sumatran banded leaf monkey (*Presbytis melalophos*) arrivals with the existing Howletts population, a sequence of moves and introductions was required. Each one relied on a successful integration to allow the next step to proceed. As introduc-

tions of unrelated adults are often fraught with problems of dominance disputes and compatibility, we were greatly relieved that our plans went surprisingly smoothly. At present we have pure groups of three *P. melalophos* subspecies, and a fourth subspecies awaits the maturity of a male who will be introduced next year. The grizzled leaf monkeys (*P. comata*) have had a trouble-free year and we await the first captive birth of this species.

The total number of gorillas at the two parks grew to 63 (28.35). At Howletts, the 12-year-old female Tambabi was removed from Kouillou's group as she was not coping well with his violent displays. She was placed in an enclosure next to Kifu's group, with the intention of introducing her. We then discovered that she was pregnant, which posed a real problem, as adult males often will not accept infants that are not theirs. In due course, she gave birth to a female infant. Kifu showed a lot of interest in the baby through the weld-mesh, but we could not tell if he was happy about it or not. Tragically, he must have managed to grab hold of the baby's arm overnight, as one morning we arrived to find that her arm had been pulled off; the injury was so severe that she had to be euthanased. Later, Tambabi was successfully integrated into Kifu's group, where she has settled in very well and has been mated, so we are hoping she will fall pregnant again.

Carnivores

After several years of deliberately breeding very few small cats, it was decided to allow some kittens this season, so that our 'senior citizens' could have a last litter and our younger cats could get started. Births at Howletts included three servals, three ocelots and a caracal. But also,

most importantly, two female clouded leopards [see the photo in *I.Z.N.* 46:6, p. 358 – *Ed.*] were born to our young pair Chiang and Thai. Howletts is still the only animal park in mainland U.K. to have bred these rare and beautiful animals, perhaps the most difficult of all cats to breed in captivity. After the birth, the surrounding area was left as isolated as possible for the next six or seven weeks. Flying in the face of conventional zoo keeping, however, the father, Chiang, was left in with Thai and her cubs, as we felt it best to keep the situation as unaltered as possible, knowing how close the pair were and also how sensitive clouded leopards are to change. Thai did an instinctive and immaculate job of raising her first litter. She was hand-raised herself, and it is almost unheard-of for a hand-raised 'cloudie' to care for her own young.

The Indian desert cats at Port Lympne have been prevented from breeding for over six years, due to the difficulties of finding homes for their young. But we decided to let the female Tamil breed this year, before her age or health prevent it – most of our desert cats have suffered renal

failure from the age of eight. In August she gave birth to two kittens, and proved to be a good mother. New arrivals at Port Lympne were a pair of margays from the Ridgeway Trust. Their enclosure, probably the largest anywhere for captive margays, reaches a height of 21 feet (6.4 m) in places, and allows the cats to show off their arboreal behaviour. It is decorated with tree branches which stretch up to the roof, no fewer than 70 branches form aerial walkways, and numerous tree stumps adorn the floor. A waterfall runs down over big rocks and boulders into a large pond. Palms and other sub-tropical plants give cover to the enclosure floor. In giving the cats as natural a setting as possible, our hope is that they will settle quickly and hopefully reproduce in 2000.

The Howletts pack of dholes once again presented us with pups, this time four (2.2). It is fascinating to watch these attractive dogs in their family unit with all members taking part in raising the young. Unfortunately, however, the hunting dogs at Port Lympne did not repeat their breeding successes of the past two



Male margay Calakmul at Port Lympne. (Photo: Neville Buck)

years; last year's mother, Ashanti, had three dead pups delivered by caesarean section after she became worryingly overdue. An old female maned wolf died in September 1998, and we moved her even older mate, Pedro, in with our four females. A week later he staggered out of the shed in pursuit of a young female. He became a father again in January 1999; both he and his family are doing well. Two litters of bush dogs died after three days, and it was subsequently discovered that the mothers had not been lactating. Before arriving at Port Lympne, both females had received contraceptive injections, and it is possible that this affected their ability to produce milk – the contraceptive used is known to cause abnormal lactation in felids, and it could be that the same effect occurs in canids.

The Barbary lioness (*Panthera leo leo*) Jade had a cub, the first in the park since she herself was born nine years ago. Unfortunately it died of a mystery lung virus at 16 days. But she produced two more cubs in July 1999, filmed by a hidden video camera. One failed to thrive and died, but at the time of writing (12 August) the other cub is fat, precocious and doing well. Our parks have maintained and successfully bred Barbary lions from as far back as 1979, when our foundation stock of sibling cubs arrived from the U.S. National Zoo. Although we have always believed our stock to be pure, and have therefore tried to continue breeding from them without diluting the bloodline with lions from other geographical areas, most other collections seem to have lost interest, and the few zoos still holding them are now faced with an ageing population of stock probably past breeding age. Ever since the launch of the programme, a major stumbling block has been the fact that many zoologists are not convinced

that the Barbary is a true subspecies. But now DNA fingerprinting may provide the answer. Port Lympne has joined forces with Rabat Zoo, Morocco, and the U.K.-based charity Wildlink International who, in conjunction with Oxford University's Wildlife Conservation Research Unit, are undertaking the research. Samples will be taken from known Barbary lion museum specimens from around the world, and there are even plans to excavate and examine lion skeletons from sites of gladiatorial contests in ancient Rome. These samples can then be compared with Rabat Zoo's and Port Lympne's animals and other lions, and hopefully establish once and for all a subspecies status. Early results are said to be promising, if not conclusive, but we expect more definite results by the spring of this year.

Hoofstock

Two new bongo bulls arrived at Howletts from Germany and the Czech Republic. However, the past twelve months have seen an unusually high number of bongo deaths, largely due to circumstances beyond our control. A female, Bomilli, gave birth to twin male calves in September 1998; despite much research and investigation, we were unable to find another example of a natural twin bongo birth in captivity anywhere in the world. But unfortunately Bomilli did not pass the placenta, and after five days became very ill, and died despite every effort being made to save her. While the twins were with their mother they had been progressing well, but when they were removed they ate a quantity of straw, something that their digestive systems were not developed enough for, and we lost them both. Shortly afterwards, old age caught up with one of our original females, Bomilli's mother

Siku, and she had to be euthanased at 15 – an admirable age for the species. On a happier note, we had two (1.1) bongo births in July 1999; both calves were integrated back into the herd within five days of their birth, and are healthy and strong.

It was a great year for the black rhinos at Port Lympne, with four healthy calves born between September 1998 and June 1999, three of them to first-time mothers. Two more calves were born in October and November, making a total of six black rhino births in 14 months. All the calves are being mother-reared and are doing well. Port Lympne has bred black rhinos since 1977. A total of 20 calves have been born since then, 15 of whom survived. This makes Port Lympne one of the most successful black rhino breeders worldwide, along with Dvur Králové in the Czech Republic, where 22 calves have been born to date.

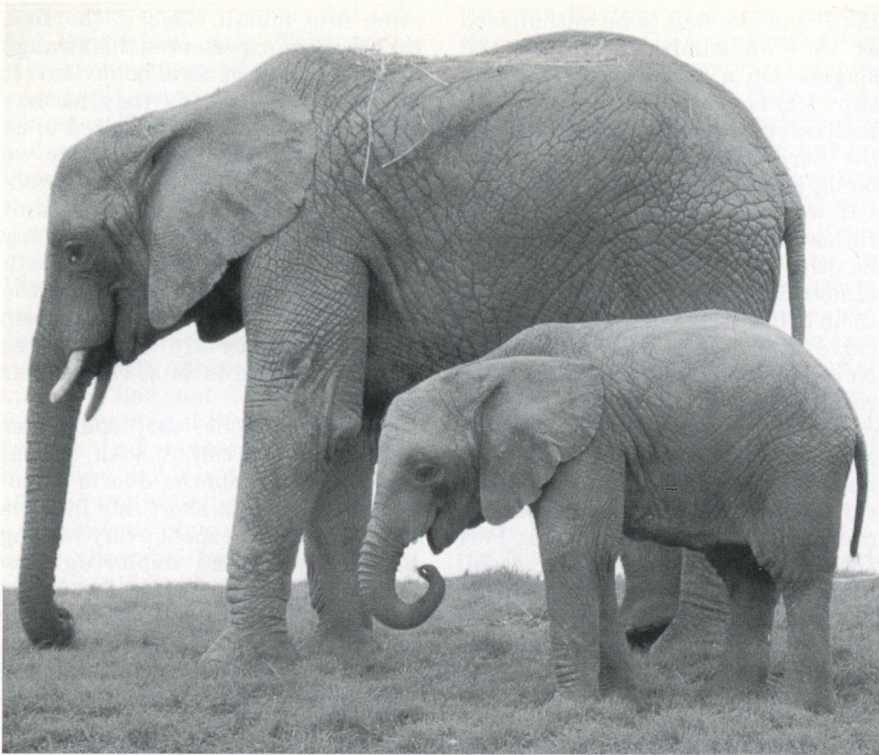
Elephants

The African elephant herd at Howletts continued to grow, with Stavit giving birth to her first calf, a very healthy female named Justa, in October 1998. Justa has become quite a character within the herd and enjoys playing with the other three calves, who have grown very quickly but still display the same playfulness when we enter their enclosures. The two bulls Ebeni and Jums have been sexually active this year. Ebeni mated Masa, Tammi and also Lara, and we are really hopeful that he has managed to impregnate them. He will then be a 'proven' bull, giving us another bloodline to work with. If all goes well, we could be in for a spate of births in 2001. Jums has mated Shara, and going by his past record it would not be surprising if she also gives birth in August 2001. Interestingly, both Ebeni and Jums have

come into musth. This is the first time we have experienced this strange change in their general behaviour. It is quite daunting, as they become extremely dangerous and need to be handled very carefully. Luckily we have not encountered any major problems, even though we have not shut them away in their stalls, as many other collections do. They have both remained outside with the rest of the herd, but obviously we separate them if we think they are becoming too aggressive towards the cows and their young.

At Port Lympne, very sadly, our little Asian bull calf, Ashoka, died at the age of 11 months due to osteoporosis. Although short, his life was full of fun and he spent every waking hour playing and exploring new things. He loved going for walks around the park, where he took delight in meeting people and, of course, he won the hearts of everybody he met. Although his death was a great setback to the elephant section, it was an invaluable and cherished experience, one that has hardened our resolve to continue and hopefully succeed in breeding Asian elephants. Late in 1999, several more elephants came from overseas to join the herd. La Petite, a 13-year-old female, arrived in October as part of a breeding cooperation between us and Ganserndorf Safari Park, Austria. Two other elephants from Ganserndorf will spend the winter at Port Lympne, hopefully returning to Austria next spring in the early stages of pregnancy. Finally, Rotterdam Zoo agreed to send us five of their elephants – three cows and two young bull calves – whom they needed to move due to successful breeding and an acute shortage of space. This will bring the number of elephants at Port Lympne to 14, with the two visitors from Austria making 16, dramatically increasing our breeding capacity.

INTERNATIONAL ZOO NEWS



African elephant Tammi with her bull calf Jumar at Howletts. (Photo: Jeremy Watson)

Overseas projects

The Congolese gorilla project has continued to thrive despite the enormous difficulties that have become the norm in an environment of political instability, rampant banditry and general anarchy. Currently the Lefini sanctuary is operating successfully, with 21 gorillas, some living free and some under human supervision but spending most of their time in the forest. Sadly, however, we have decided to suspend further confiscations of orphan gorillas until we have a better idea of what the future holds for the ones we already have – the sanctuary's capacity has already been stretched, so to accept more orphans might jeopardise those already here. There is no accurate estimate of the

number of gorillas being killed in Congo, but the large numbers of automatic weapons and the lack of employment have vastly increased the bushmeat trade. National and international laws mean that it is next to impossible for these orphans to find a home outside Congo; but the cost, danger and difficulty of finding and supplying another site in the country is unfeasible at the moment.

At our other site, Mpassa in Gabon, we now have 11 (4.7) gorillas, all under five years of age. They are doing extremely well, adapting to the forest and to each other. At the time of writing plans are in hand to send out two Howletts-born males to join them; they will be the first captive-born gorillas ever to be repatriated to semi-wild conditions in Africa.

Audubon Institute, New Orleans, Louisiana, U.S.A.

A domestic cat at the Institute's Center for Research of Endangered Species has given birth to an African wildcat in the world's first successful inter-species frozen-thawed embryo transfer. The birth, on 24 November 1999, marks a major breakthrough in the field of assisted reproduction technology for rare and endangered species.

This is the latest in a series of projects pioneered by the Audubon Institute's Senior Vice-President for Research, Dr Betsy Dresser, and Senior Scientist Dr C. Earle Pope. In 1989, Drs Dresser and Pope, then at Cincinnati Zoo's Center for Reproduction of Endangered Wildlife, led the team that produced the first successful Indian desert cat birth to a domestic cat, a procedure which utilized a fresh embryo [see *I.Z.N.* 36:4, pp. 12-13]. They also led the team that produced the world's first 'test tube' gorilla in 1995.

Recent accomplishments at the Center include the births of servals, saddlebill storks and Mexican wolves through natural breeding, and the hatching of 29 Mississippi sandhill crane chicks through artificial insemination. Researchers are working on a number of embryo transfer projects involving big cats, bongos and other animals. By using non-endangered surrogates for gestation and baby-rearing, endangered and rare animals can produce reproductive material at a more rapid pace, resulting in more births.

AZA Communiqué (January 2000)

Berlin Zoo, Germany

Two (1.1) musk deer (*Moschus moschiferus*) were born at the zoo on 17 and 19 July 1999. This is the first breeding of the species at Berlin, and the young are being mother-reared. The father, born in 1994 at Leipzig, came to Berlin in 1995. The mother is wild-born and arrived in December 1998 on loan from Paris Zoo. Their enclosure at Berlin is densely planted with bushes and is equipped with a wooden platform about 2.5 m high, because musk deer have been observed ascending steep rocks and other high obstacles in the wild. The animals like to rest, either standing or lying down, on their platform. Berlin Zoo received its first musk deer in 1888, but this animal lived only for a few months. Three others lived at the zoo in 1891-1893, 1905-1908 and 1929-1932. The musk deer is still a rare sight in zoos; the only other zoos in the EAZA region that have bred this species in the 1990s are La Torbiera (Agrate Conturbia, Italy), Leipzig (Germany), and Novosibirsk and Seversk (both in Russia).

Hans Frädriich in *EAZA News* No. 29 (January-March 2000)

Chessington World of Adventures, U.K.

The four hammerkop (*Scopus umbretta*) chicks [see *I.Z.N.* 46:7, p. 437] emerged from the nest in mid-September and were remarkably independent. Unfortunately they suffered from *Candida* infections and had to be isolated from the parents