thus completely safe. To operate it, the egg is placed in a compartment in the machine and the lid closed. Pressing the 'on' button operates the system with an instantaneous display on the built-in screen of a pulse read-out and three-digit heart rate. The unit also indicates when the chick is moving, reverting to the heart rate display when the bird has settled. In the event that the chick is not alive, a black still heart is displayed with a flat pulse line and a zero reading on the heart rate read-out. The unit can be mains or battery operated, so it can be taken to the aviary for '*in situ*' testing. This facility will also be invaluable to conservationists working in the field.

The system, priced at £199.75, is available from Avian Biotech in the U.K. (*Tel.* 01872 262777, or visit **www.avitronics.co.uk** for further information).

Special zoo evenings for chronically ill and disabled children

In 1996, Rotterdam Zoo initiated an annual evening out at the zoo for children from the Sophia Children's Hospital. Amsterdam Zoo joined in this effort in 2000 with their own version of this special evening. In 2001 four other Dutch zoos, Ouwehands Dierenpark in Rhenen, Safari Beekse Bergen in Hilvarenbeek, Apenheul in Apeldoorn and Amersfoort Zoo, also organised an evening for chronically ill and disabled children. The event has not only grown in the number of zoos holding it, but also within the individual zoos. Rotterdam began in 1996 with cancer patients in one children's hospital, but by 2001 was able to issue invitations to chronically ill children in 13 different hospitals throughout the region.

We expect all members of the Dutch Zoo Federation to join us in this annual event in 2002. Most of the Dutch zoos will participate by opening their gates for these special guests, who do not often have opportunities to visit our zoos, from 18.00 to 22.00 on Friday 7 June 2002. The children are also invited to bring their parents, brothers and sisters or other people close to them for this festive and cost-free evening. Most of the children come from hospitals, others from schools and institutions for blind or disabled children. Each zoo organises this event in their own way, but in all the zoos the children are welcomed and treated as VIPs. They are allowed to open doors, ask the keepers questions, come into as close contact with the animals as possible and get a more intimate view of the zoo than the average visitor.

It is fantastic to observe all the happy faces of the children, and to see their relatives – who often have a very heavy burden to bear – also having a good time. It is also a very special and satisfying evening for the zoo employees. Making an unforgettable evening for these children and their families is a perfect team-building experience. Almost all of the zoo employees volunteer to work that evening, and no one complains, even if he or she has had to answer the same question a thousand times. It is fun and a rewarding job to do.

Many external companies and individuals are pleased to contribute in a variety of ways, for example by providing free transportation, snacks, ice cream, face-paint or flowers, and even money to be spent on whatever the organisers find appropriate. Famous bands and artists offer fantastic music or theatre acts. In some zoos the fire brigade allows the children to use the fire hose or have a look in the fire engine, police personnel offer their assistance, and the A.A. patrol takes care of flat wheelchair tyres.

Because arranging this special evening is such a rewarding experience, organisers in the Dutch zoos are pleased to share the experience they have gained, to encourage zoos in other countries to hold similar events. It really is a project that is well worth the effort.

Abridged from Ko Veltman in *EAZA News* No. 37 (January–March 2002)

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ANNUAL REPORTS

HOWLETTS AND PORT LYMPNE WILD ANIMAL PARKS, U.K., Summer 2000 to Summer 2001

Extracts from *Help Newsletter* No. 23

Primates

At Howletts, 18 infants were successfully parent-reared – one siamang, one moloch gibbon, seven Javan langurs, five banded leaf monkeys, three grizzled leaf monkeys and one dusky langur. Imran, the male of the original pair of the critically-endangered moloch gibbons who arrived from Java in 1984, sadly died on 1 January. He was our original breeding male and leaves six surviving offspring. In 1987 we only had three (2.1) adult molochs: we now have 19 (8.11), of whom 15 are captive-born (13 of these at Howletts). Our unique group of captive grizzled leaf monkeys (*Presbytis c. comata*) continued to increase in number, with one death and three (2.1) births. It is impossible to base too many hopes on this perilously small captive population (4.6), but it is encouraging to have had at least five individuals reproduce successfully, and to have four Howletts-born individuals in a species that was stated in 1994 (in the IUCN's PHVA report for the moloch gibbon and grizzled leaf monkey) to be of low captive-breeding potential as 'none have survived in captivity.' The banded leaf monkeys (*Presbytis melalophos*) had their most successful breeding year, with four females born in one group. The Javan langurs (*Trachypithecus a. auratus*) continue to increase in number; this species seems to consistently produce a higher ratio of female to male births.

An attempt to run two adjacent enclosures as a mixed exhibit of colobus and De Brazza monkeys ultimately failed. Initially it all seemed quite hopeful. The pair of De Brazzas were very confident and utilised all areas, but the trio of young colobus were restricted in their movement. Unfortunately little progress was made by the end of two months, when the colobus were the focus of a more determined 'pincer movement' from the De Brazzas, and it seemed safest to separate them before any serious injury took place. It had been a stimulating time for the De Brazzas, and they became a much closer partnership as a result.

At Port Lympne, there were 13 successfully mother-reared infants born: four colobus, two howlers, one siamang, two Javan langurs, one capuchin, one De Brazza and two diana monkeys. The year saw a lot of restructuring of groups to help with breeding and prevent inbreeding. All the De Brazzas were repaired, as none were breeding and our only known breeding female had been without a male, due to her partner's death a year earlier. Since she was paired up again she has had another infant; she and her mate now form one of only two breeding pairs in this country, as a lot of zoos have been going out of De Brazzas.

At 30 September 2001, gorilla numbers at the two parks totalled 70 (31.39). New infants included a male born to Mushie, who doesn't have the use of her right arm. She tends to drag or push the baby around on a little bed of straw, and he copes well with this unconventional method of transport, as did his elder brother, gorilla babies being far more robust than human ones.

In August 2000, female gorilla Sounda (25) started showing signs of illness, with loose faeces, a drop in appetite and weight loss. On examination, her large intestine appeared inflamed and any citrus fruit or food high in fibre would exacerbate this. Using the treatment given to people with inflamed colons, we fed her little and

often with bland, cooked food, mainly potato, onion, bread and boiled chicken. We put some raw, minced garlic in these stews for its antiviral properties. Sounda gradually improved until we could put her back with the group in October, still none the wiser as to what caused the condition in the first place.

Another female, Tamki, was put onto contraceptive injections after producing three offspring and showing no interest in rearing any of them. There were several reasons for this decision: hand-rearing gorillas requires a great deal of work and effort, hand-reared gorillas are often socially inept and don't always fit into a group, Tamki's genetic line is well represented so placing her offspring will become a problem in the future, and finally it's not fair on her to have a baby every year. Unfortunately, a pregnancy test six months later showed that she was pregnant. If this infant has to be hand-reared, she will be put onto another form of contraceptive.

Carnivores

The two female Pallas cats at Howletts are still awaiting a male to breed with, but we anticipate that the search will shortly prove successful. The breeding pair of clouded leopards, Chang and Thai, did not breed in April 2001, but it is hoped that the break will help them for the coming season. We plan to put together two more pairs of clouded leopards to encourage breeding and give us new bloodlines. To our great disappointment, last year's litter of Asiatic wild dogs did not survive. We had almost resigned ourselves to the prospect of not seeing the pack grow any bigger, when on 28 April we realised that a new litter had been born. Of the seven pups, five survive at the time of writing.

At Port Lympne, the breeding Atlas lioness Jade bore a single female cub in March, and everything went smoothly for the first month. Then Jade came into season again, at least 20 months before she should have done, and deserted the cub in order to flaunt herself in front of the male, Kabir. The cub was not ready to be weaned, but we decided to leave her with her mother, but at the same time to bottle-feed her. The first sessions were quite stressful, but we persevered and began to win her trust, and more importantly to get adequate nutrition into her and wean her. When Jade finished her oestrus, some two weeks later, she allowed the cub to lie with her and began again to show some maternal care. Overnight the cub reverted to the snarling, hissing bundle of fur we had encountered two weeks previously. Jade never let the cub suckle again, so we continued to supplement her feeds. But Jade's unnatural cycling made us decide to retire her from the breeding programme and concentrate on the young hand-raised lioness Safiyya in future.

A litter of African hunting dogs was parent-reared for nine weeks without problems. Then the effects of an appallingly wet winter and spring began to show themselves. We noticed the pups were beginning to limp; then one of them was found dead with broken bones. The post-mortem and tests showed that we had been providing enough calcium, but that it had not been absorbed by the pups, who were lacking in vitamin D. This vitamin, while occurring in liver, for instance, is generally formed through the action of sunlight on the skin. This year we got very little sun at this important time in the pups' development. We had to remove them from the parents in order to treat them intensively and monitor their progress; they responded well and their bones strengthened.

November 2000 saw the birth of two litters of bush dogs, 2.3 and 3.1 respectively, and as far as we are aware all the pups survived to weaning. At ten weeks of age all the pups in both packs had become very confident and were actively following their parents around the enclosure. It came as a surprise when one young male was found sitting by himself

and unable to stand; he had lost feeling in his front right and rear left legs, and his eyesight and hearing were also impaired. With intensive care he began to recover, and after two weeks was strong enough to stand and walk for long periods, although his sight and hearing remained poor. But a week later his condition took a downward spiral, and soon hope of recovery faded, prompting the decision to perform euthanasia. The post-mortem revealed a viral brain infection; but happily none of the other pups were affected.

This year, again, we did not breed from our Siberian lynxes, Indian desert cats and caracals. Fishing cats and ocelots have also been prevented from breeding. Because most of our ocelots are from 'generic' stock (i.e. from mixed or unknown subspecies), it is likely that we will permanently prevent them from breeding.

Hoofstock

A female Brazilian tapir at Howletts, Mucca Mucca, is now 35 years old and still coping well. [This is probably a longevity record for a tapir of any species – *Ed.*]. The new breeding male nilgai, Laszlo, proved his worth and August saw several births, the start of a new bloodline. Movement of stock prior to the foot-and-mouth outbreak included the departure of the entire collection of parma wallabies to Wingham Bird Park, an exchange of male blackbuck with Colchester Zoo, and the departure to Ireland of a pair of bongo. Juma, the last of the original bongo who arrived at Howletts in 1984 from Woburn, died from old age in June at the remarkable age of seventeen and a half. Meanwhile, the first offspring of the new bongo bull, Narok, was born in March – a female calf to a first-time mother.

At Port Lympne, the banteng produced three calves. Two of these were from first-time mothers who have undertaken their task admirably; one of them, Scarlett, was hand-raised herself but has seen other calves reared by their mothers. A male Malayan tapir was born on 25 July 2001. Although rather small at birth, he gained weight rapidly and was trying out solid food and browse within a matter of days. Other births included seven barasingha, seven nilgai, three sambar, three water buffalo and four American bison.

An unexpected tragedy hit us on 2 July 2001, when black rhino Nakuru's son, Zambezi, was found lying dead in his paddock first thing in the morning. There had been no real signs of illness and he was seen running around the night before. The post-mortem found that he had died from encephalomyocarditis virus, a disease carried by rats and squirrels which affects the heart and brain, the first case ever recorded at Port Lympne. Four weeks later, Rukwa gave birth to her sixth calf, a little female, who was named Solio after Kenya's most successful rhino reserve. Rukwa, who is one of our founder females and originally came from Kenya, is our oldest rhino but is once again proving to be a wonderful mother. As she lost her calf Galana last year at three months following an intestinal infection and severe diarrhoea, we kept a close watch on Solio. At a similar age, she also developed a bout of diarrhoea, but was treated for it and at the time of writing seems to be making a recovery.

Anthony Hall Martin visited Port Lympne on behalf of the National Parks Board of South Africa, to see our rhinos and to discuss the rhino exchange programme we have with them. He also gave us news of Bwana's progress. Bwana was the first captive black rhino ever to be returned to Africa (to the Addo Elephant National Park). In October 2000 he was moved to Thaba Tholo in the northern province of South Africa. This is a privately-owned game ranch of 36,000 hectares, home to 16 black rhinos of our subspecies, *Diceros bicornis michaeli*, and the remaining *michaeli* rhinos from Addo

Three juvenile black rhinos at Port Lympne. (Photo: Berry White)

will be moved there by the middle of next year. Addo is now restocking with the original indigenous subspecies, *D. b. bicornis*, so any further rhinos sent from Port Lympne to South Africa will go to join Bwana at Thaba Tholo. To date, he has definitely sired three calves, two of whom were born in May this year.

Elephants

No breeding took place in the Howletts African elephant herd. It was a frustrating year, as we were not allowed to move four of the bulls to other collections due to foot-and-mouth restrictions. Our problem where breeding is concerned is due to our having two adult bulls. We have learned from Dr Thomas Hildebrandt, who has wide experience in the field of breeding elephants, that having two adult bulls will actually stop the cows from cycling. Dr Hildebrandt came to ultrasound Lara, who had very healthy ovaries but was not cycling as she should be. We now think this must also be the story with the other cows in the herd. It seems that the less dominant bull, Ben, is suppressed by Jums – and possibly vice versa! Consequently no pregnancies are happening. So we intend to move Ben, and also the young males Osh, Jassa and Jumar, to other collections abroad. We can then put Jums back with all the females, and hopefully breeding will start again.

In October 2000 we performed a standing sedation on Rani, one of the original Asian cows at Port Lympne, to remove fibrous tissue from around the vaginal area, which had been causing her discomfort. The operation was a success and she is now moving around more freely. Timber and Max, the two young bull calves who came to us from Rotterdam Zoo, are still as boisterous as ever. Their play-fighting has caused Timber to damage his tusks on two separate occasions. Thankfully Peter Kertesz, the zoo dentist, has been able to successfully repair them and save both tusks. In July 2001 Dr Hildebrandt and his team gave four of the Asian cows an ultrasound test to find out why they are not conceiving. The results are not yet complete as we are awaiting further tests, but we are hoping the outcome will be a positive one.

Overseas projects

The gorilla projects in Gabon and Congo made dramatic progress with both released and semi-released groups. The project in Mpassa, Gabon, has benefited from our ten years of experience in the Lesio-Louna reserve, Congo. Here we have had to remedy unpredictable problems that resulted from decisions taken years before. Mpassa has the advantage of being extremely isolated and having a large river separating the human camp from the gorilla territory. There is no effective river boundary in Lesio-Louna, and a human population of upwards of 15,000 exerting an enormous pressure surrounds the reserve. Despite these problems we have not yet lost a gorilla in the Congo to poachers, and have managed to protect the indigenous wildlife by protecting a keystone species. The long-term future of all the gorillas in Lesio-Louna reserve has improved with the decision to transfer a yet undecided number to an area of forest forty km to the north-west of the base camp. Unlike the present reserve that borders villages, leading to significant human/gorilla conflict and increased patrolling requirements, the new block is cut off from permanent human habitation and is situated in the middle of the Lefini reserve, which is already nominally a protected area. Quite what the gorilla capacity of this new area is we do not yet know, but it does look encouraging, with roughly 40 km^2 of forest, protected on three sides by rivers wide enough to halt canopy crossings. To the south there is a huge expanse of savannah isolating the forest and making surveillance of the area a good deal easier for us.

After breaking his leg in a fall, Marco, a young male in Gabon, showed how resilient gorillas in the wild can be by staying with the group and making a full recovery within months. He received no medication during this period, because it was felt that painkillers could cause further trauma by masking the pain. The accident and subsequent recovery was a reminder of the astonishing number of wild gorilla skeletons that have shown healed breaks and fractures.

The John Aspinall Foundation is helping to finance construction of a new facility at Ragunan Zoo, Jakarta, Indonesia, to assist the breeding of that country's most endangered primate species. Two years ago we started to train keepers and veterinarians from Ragunan in the animal care practised at our two parks, passing on the experience gained over the past few years with several Indonesian species – Malayan tapirs, banded and grizzled leaf monkeys, Javan langurs, siamangs and moloch gibbons. We feel that this ongoing project will contribute something positive to Ragunan Zoo, assisting Indonesia in the struggle to breed and conserve its own wildlife.

LORO PARQUE FOUNDATION, TENERIFE, SPAIN

Report on the 2001 Breeding Season

This year, the 2000 breeding record of 853 chicks was increased by 30%, reaching a total of 1,104 ringed youngsters. Also, the number of species and subspecies bred increased from 148 in 2000 to 167 this year. This development gives us hope for the future, since it has become more important than ever to renounce wild-caught animals and get back to those bred in captivity. With its parrots bred in captivity, Loro Parque Fundación (LPF) can contribute considerably to support this trend.