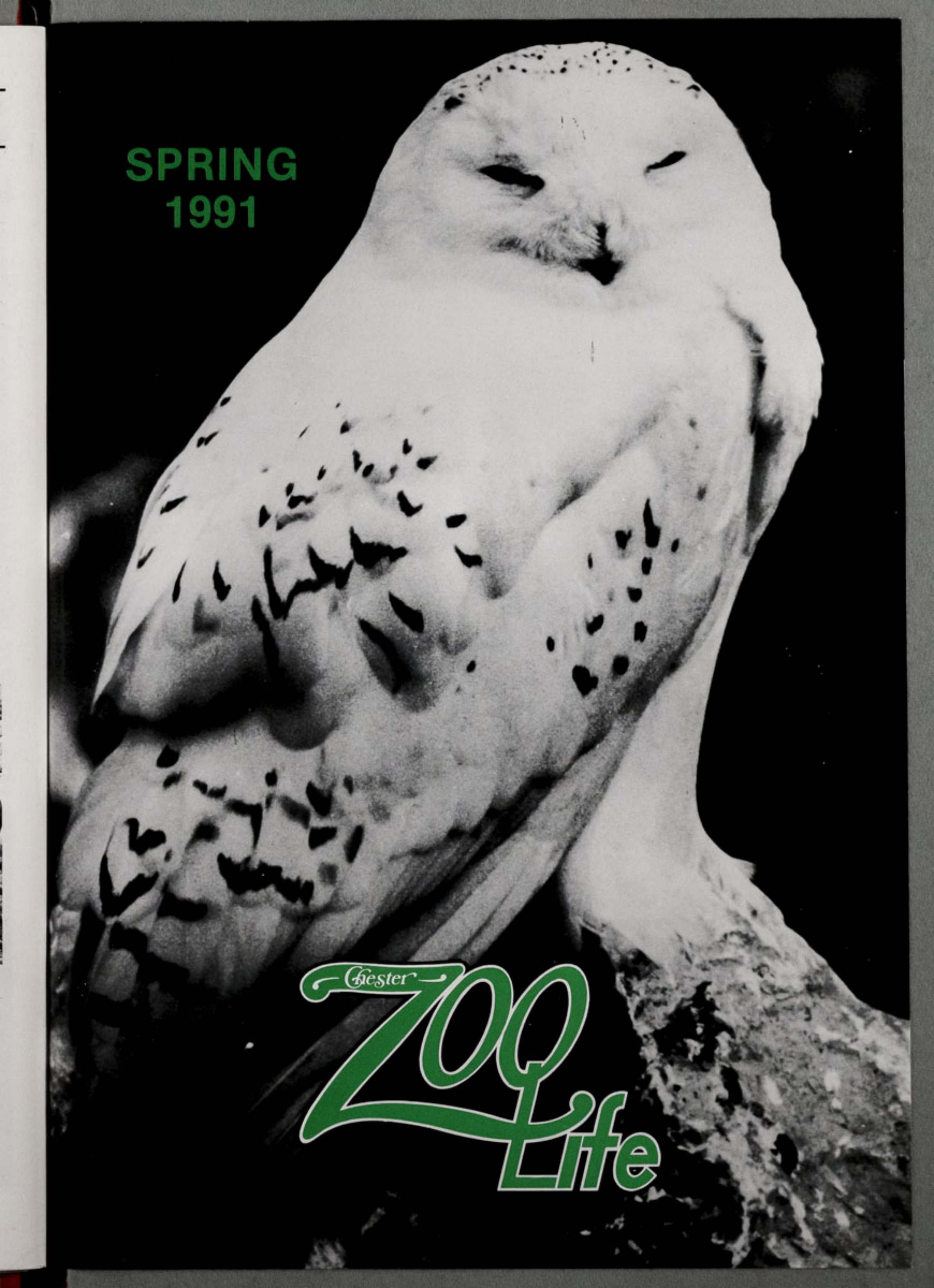


SPRING
1991

Chester
Zoo
Life



Chez Nous

Let us hope that 1991 is a happy new year for Chester Zoo and for all who visit it, work in it, or are members of it. The world's political and economic outlook is so much more gloomy than a year ago, and we must be prepared to face a tightening of belts. The prospects are of a more difficult year, offset by the benefit the overhead railway will give us. It is coming on well, and considering the nature of the work to be done, is being built with remarkably little mess and mud.

I don't suppose we will ever have a time when there is no mess or mud in the zoo - there is so much to do, and now we are able to do so much more to catch up on our programme.

We have just finished the Snowy Owl aviaries, made possible by a most generous anonymous gift. These first stage replacements of the time-expired ones at the back of the Oakfield, are beside the Jubilee Garden, looking down on the rejuvenated fountains that gush out of Noah's statue. Don't miss this part of the zoo - it's great!

The old gorilla enclosures are being converted into most imaginative new aviaries for hornbills. The canal bank and the paddocks bordering it beside the cattle house and the giraffe house are being tidied up and finished off, so that the animals can come closer to the canal, and the banks are stabilised against the wash of the busboats.

We've been working to keep the Oasis cafe up to scratch and everywhere there are small improvements going on. The zoo is a very busy place these days!

Reptiles

I promised I would comment on the reptiles and the fish this issue. Both areas have benefitted from new works. The reptiles have a new heating system which gives a much more easily controlled supply of warmed clean air into each of the exhibits. The aquarium has had a further bank of new tanks - dare I use the words - "come on stream."

Though many reptile species, when they breed, produce large numbers, it is not correct to believe that once we have solved the problems that are met up to the time of hatching, all problems are solved. The rearing stages require a lot of detailed support, and it

is a measure of our keepers' dedication and ability that we have successfully reared 236 young reptiles in 1990. Admittedly 109 were American Basilisks and 70 were Leopard Geckos - both requiring a lot of hard work in the early stages. However, the other 57 were spread among 13 species - one turtle, seven lizard and five snake species.

We believe that we are the first to have bred the Sunbeam Snakes in captivity. These are primitive snakes in a group all of their own, which live in the forest floor litter in South East Asia.

The Leopard Geckos require a lot of attention, because not only has each animal to be watched to see that it is feeding properly, but also because they are so prone to aggression between themselves, that they have to be continually separated into smaller and smaller groups. With 70 young, that presents a big problem.

The nine Sailfin Lizards also present great problems. They are large and very nervous hatching, requiring a lot of food and no stress, even from each other. The way we have solved it, is to give them a clear floor area, onto which their food can be placed and be readily visible. An elaborate covering of branches with greenery above the floor allows the animals to find secure refuge.

The male tuatara died 29 years after coming here as an adult. We have done as well as anybody outside New Zealand with these animals, with several years in which we believe eggs were laid. We are in touch with the

Species Co-ordinator to establish an ongoing breeding population here.

Our Prehensile Skinks from the Solomon Islands have done very well over the years, but the most productive animals were getting on, and it was time to bring in new stock from other collections. Hopefully there will be births quite soon. These animals do not lay eggs, but give birth to very large young. There seems to be no hard and fast rule with reptiles, to sort out which lay eggs and hatch their young, and which give birth.

Amphibia

Amongst the amphibia, we are now breeding second generation Red-eyed Tree Frogs - a U.K. first.

Our Partula Snails, from the Island of Moorea, are breeding away to a quite staggering degree! When they came, we found they did not really thrive on the traditional diet, and we changed to mineral and vitamin supplement, particularly the form in which Calcium was fed, and the levels of Vitamin E in the diet. The keeping staff immediately noticed most dramatic results.

The heating system for the reptile cages has been changed, and we are now able to control the temperature in each cage much more sensitively than before. This may yet prove to be a most significant development.

Michael Brambell

FRONT COVER

One of the Snowy Owls, settled in the newly built aviaries (below).

Chester Zoo is edited by Pat Cade.





MEMBERS' MEETING 1991

Monday 25th March 1991 -
President's Evening



Our President, His Grace the Duke of Westminster, has agreed to chair a presentation by the management team on the forward planning of the zoo to meet demands of the 1990's and beyond. Following this, His Grace will give an illustrated talk on the conservation measures taken on the Westminster Estates, including Eaton Hall. The Director will round off the evening with an update on local conservation measures being taken on the Society's own land outside the zoo.

There will be a buffet supper. Prior booking will necessary - contact Mrs Allsopp at the Membership Office for tickets.

Cost - £4.95, including buffet and glass of wine.

Saturday 13th April 1991

The Director's Annual Review: Dr Michael Brambell will talk about the zoo's work and achievements over the past year.

Saturday 11th May 1991

Annual General Meeting

MEMBERS' CONCESSIONARY TICKETS

Price increase from 25th March 1991

The entrance price to the zoo will be increased on 25th March to £4.60 per adult. The concessionary tickets available to all members will therefore be increased to £2.30 each. Members may purchase up to 20 of these half price tickets annually, sold in blocks of five - £11.50. As before, each ticket admits either one adult or two children/O.A.P's. These tickets must be purchased in advance of the visit. They are obtainable only through the Membership Office, and are not on sale at the gate.

We are happy to accept postal applications. Please make cheques payable to Chester Zoo, enclosing a stamped, addressed envelope.

Sorry Juniors! Concessionary tickets are not available to junior members.

Maureen Allsopp, Membership Secretary.

MAGAZINES FOR JUNIORS

In families where there is more than one Junior, it has always been our practice to send a magazine to each member. However, we have had lots of phone calls saying one copy per family would be enough, as brothers and sisters are happy to share.

The magazine packing is done by an outside firm, and it would be too complicated to instruct them to distinguish between

families wanting just one copy, and those Juniors who would like a copy each. Therefore, we will send just one copy in each envelope. If there are families who would like to keep receiving individual copies, please contact Mrs Maureen Allsopp at the Membership Office in the Zoo.

We believe our Juniors our conservationally sensitive young people, and it does make sense to save paper where we can!

UP TO HIS KNEES IN WORK

Have you noticed the great improvements to the Otter Fountain in the lawn in front of the gift shop? Project Engineer Ken Roberts has installed an extra ring, giving greater design and power to the fountain. Our picture shows Ken getting immersed in his task!

IRISH SYMPOSIUM

Some tickets are still available for the symposium on the conservation and environmental issues connected with the Irish Sea.

The day-long symposium will be held in the lecture theatre and chaired by Dr Shaw, Director of the Centre for Marine and Coastal Studies at Liverpool University.

Subjects will include marine conservation reserves; Irish Sea fisheries; estuaries for birds; seals and whales, and the impact of pollution.

Tickets, including coffee, buffet lunch, and afternoon tea are £10.00 and there is a concession price of £8.00 for students. Contact the Education Division for tickets.





PHOTOGRAPHIC COMPETITION 1991

We have an incredible collection of very valuable and exciting prizes for this year's photographic competition!

Top prize, for the Chester Zoo Photographer of 1991 is a fabulous safari holiday in Kenya with Sunmed holidays. The first week will be spent on Sunmed's "Big Five Safari" - seven nights, eight days, taking in Tsavo West National Park, the Amboseli National Park, Nairobi, the Masai Mara National park, and back to Mombasa.

The second week is spent relaxing in the Giriama hotel at Bamburi Beach, surrounded by palms and tropical flowers. Sunmed's "Go Kenya" brochure is full of dream holidays to tempt anyone keen on wildlife and photography.

The runner-up will receive a Canon Camcorder to the value of £899! Currently in this price range is Canovision A10 - a compact, lightweight video camera, equipped with the latest technological features. It has an auto tracking focus; Hi Fi stereo sound; a powerful 8x zoom lens and many other functions, like date, time and tilting. A wonderful prize - ideal for still photographers who want to expand into movement.

Our Junior Photographer of the Year will also win an

exciting holiday - a trip to Legoland in Denmark, with Scandinavian Seaways, including a visit to the Safari Park of Givskud! The prize is for two adults and two children, so our lucky winner will be able to take all the family.

There will be lots of other prizes too, including British Rail vouchers, gift tokens from Ness Photographic Laboratories and Fishwicks. The best photograph of the gardens will win the Bridgmere Garden World Trophy, and vouchers from Bridgemere.

New category this year will be for the photographs taken from the overhead railway! This is going to give visitors a totally new view of many of the enclosures, and should be a great opportunity for photography!

Our pictures show some of last year's winners. Above is Mr Geoff Mansell, who won the Kuoni/South African Airways holiday, pictured with his wife, Angela, who was fourth prize winner. Right is the 1990 Junior Photographer of the Year, 15 year old Alison Walsh from Lanarkshire, receiving her prize from Dr. Goronwy Wynne.

Entry forms for this year's competition will be available in the zoo around Easter time.

ZOO REVIEW

GOURMET EVENINGS IN THE OAKFIELD

Restaurant and Functions Manager, Richard Casson, has a programme of very varied and exciting evenings in the Oakfield Restaurant.

Advance booking is essential - and as these popular evenings are usually very well supported, it's a good idea to book early! Party Bookings office have full details.

10th May: Vegetarian evening (But this menu will tempt meat eaters too!)

4th July: Independence Day American evening.

20th September: Across the Continents on the Orient Express.

31st October: Halloween Evening.

15th November: Beaujolais Nouveau Evening.

If you have any special celebrations coming up, Richard and his staff will be delighted to create a theme evening of your choice, for parties of 20 or more.



THE MAMMOTH COST OF TRUE LOVE

A news item about Kiev Zoo's way of solving fund raising appealed to our own Financial Controller, Alan du Cros. The item reads:

"A Kiev Zoo has increased its admission prices by 500% to help buy a mate for Boy, Europe's largest bull elephant. Zoo bosses fear Boy will smash his enclosure if a soulmate is not found soon."

If we followed similar tactics, the Chester Zoo entrance price for 1991 would be £23.00!

The J.C.B. - A New Zoo Species!

When work first started on the new overhead railway, many of the animals showed a great deal of curiosity about what was going on. However, within a very short time, they seemed to ignore the men and machinery. These eland, sharing their environment with J.C.B.s, show a total disdain for it all!

WATCH OUT FOR THE "WILD SHOW"

The BBC television cameras were in the zoo last August Bank Holiday, filming a programme for the children's series "The Really Wild Roadshow." Fifty of our Junior Members provided the audience for the programme, and they and their families will need to tune in at 4.35pm on Tuesday 26th March, when "their" programme will be shown.

Doubtless most of the juniors will make sure they have access to a video recorder for the afternoon. But for those who are unable to record the programme, Penny Rudd, our Junior Members Secretary, will have a copy, and maybe the opportunity will arise to show it at a future meeting.

REPTILE GIFT

Life Member Mr Brian Border, who died in September, had a particular interest in reptiles. His small collection of slow worms, Warren's zonure and grass snakes has been gifted to the zoo, and the reptiles are now settled in the Tropical House. The Society is grateful to Miss E. Townley for making the arrangements.



MAGICAL CHRISTMAS JOURNEYS

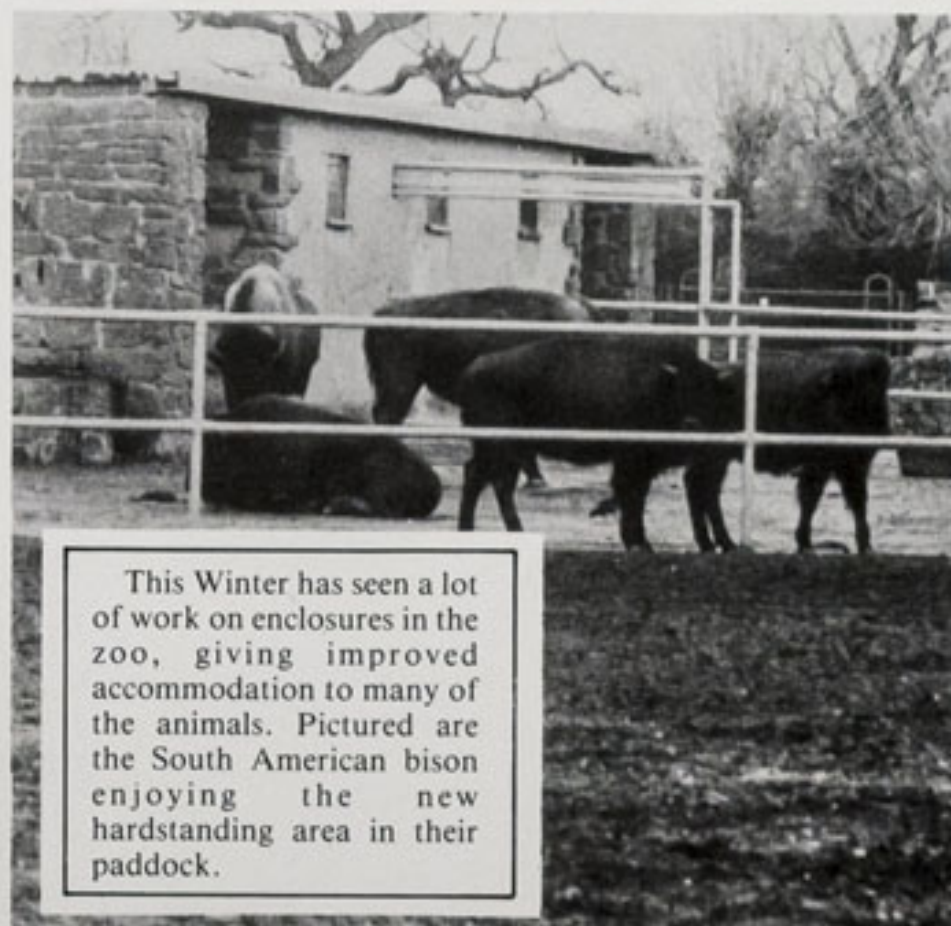
Over 3,000 people took the Christmas Journey around the zoo in December - more than ever before.

In its third year, the "Journey" is becoming well known as a unique Christmas outing for families. As in previous years, all the organising, costume making, script writing, and bookings were handled by the Education staff, with very many of the F.E.D.S (volunteers) giving many hours of their time. This year, there was an added task - making life size models! To enable many more schools to take the

journey, it was necessary to cut down on the number of people needed at each "station." This was achieved by making tableaux, featuring life size models of the shepherds, kings and Holy Family.

Brenda Norgain, Head of Education, said "I never realised that our staff and F.E.D.S. had so many different skills! We found there was someone who could do each of the different tasks needed."

Picture: "While Shepherds watched their goats by night..."



This Winter has seen a lot of work on enclosures in the zoo, giving improved accommodation to many of the animals. Pictured are the South American bison enjoying the new hardstanding area in their paddock.

THE ENIGMATIC CHEETAH

(*Acinonyx Jubatus*)

The fleetest of all mammals is the cheetah. Capable of speeds nearing 70 m.p.h., it can outpace all other animals. However, distance is critical and it can only run at this speed over short distances, rarely chasing more than 400 yards — and not all its chases are successful. Its technique is to get as close to its intended prey as possible before making the final dash probably needing four or five chases before a kill is made.

Although classified as a cat, 'Felis', when first described scientifically it was given its own genus, *Acinonyx*, in 1839, because of the differences in anatomy and behaviour — the non retractable claws being the most obvious.

The cheetah, now sadly an endangered species, existed in prehistoric times and fossilised remains have

been found worldwide, although these remains suggest that it was then a much larger animal. Probably then, as now, the population was never dense but certainly more widespread. Today the range has diminished and maybe no more than a hundred remain in Asia. The last stronghold is Iran and a few of its neighbouring countries. Recent reports suggest numbers are fairly stable and may even be increasing.

The African population is stronger and estimated to be about 8000 though declining. Once spread over most of Africa, its present distribution has also diminished and the remaining strongholds are in Kenya, Tanzania and Namibia. Although Namibia boasts one of the largest populations of cheetah the situation is not good.

Over half of the 1975 estimate of 6000 has since disappeared, due mainly to human persecution.

With the spread of agriculture and the ranching of domestic stock elsewhere, the cheetah is now regarded as a threat to livestock and shot in large numbers — in many cases illegally. Modern firearms have also taken their toll in the hands of poachers and will continue to do so until the trade in skins is stopped. The cheetah is also under pressure in reserves, not only from illegal poaching, but also from other predators such as lion, leopard, hyena, and hunting dog — all capable of taking its kill or inflicting injury should it resist a takeover.

Probably the best description of a cheetah would be to call it a dog



with the head of a cat. Its body is adapted for speed, it is long and supple with strong high shoulders and has a very flexible spine. Its legs are long, ending in paws which are narrow in comparison to other cats. The claws do not retract except during the first few weeks of life. The most characteristic of its markings are two black "tear stripes", running from the eyes to mouth corners.

The adult body length is 120-150 cms plus a long tail of 60-80 cms. The weight of an adult varies from 45-50 kgs.

Gestation

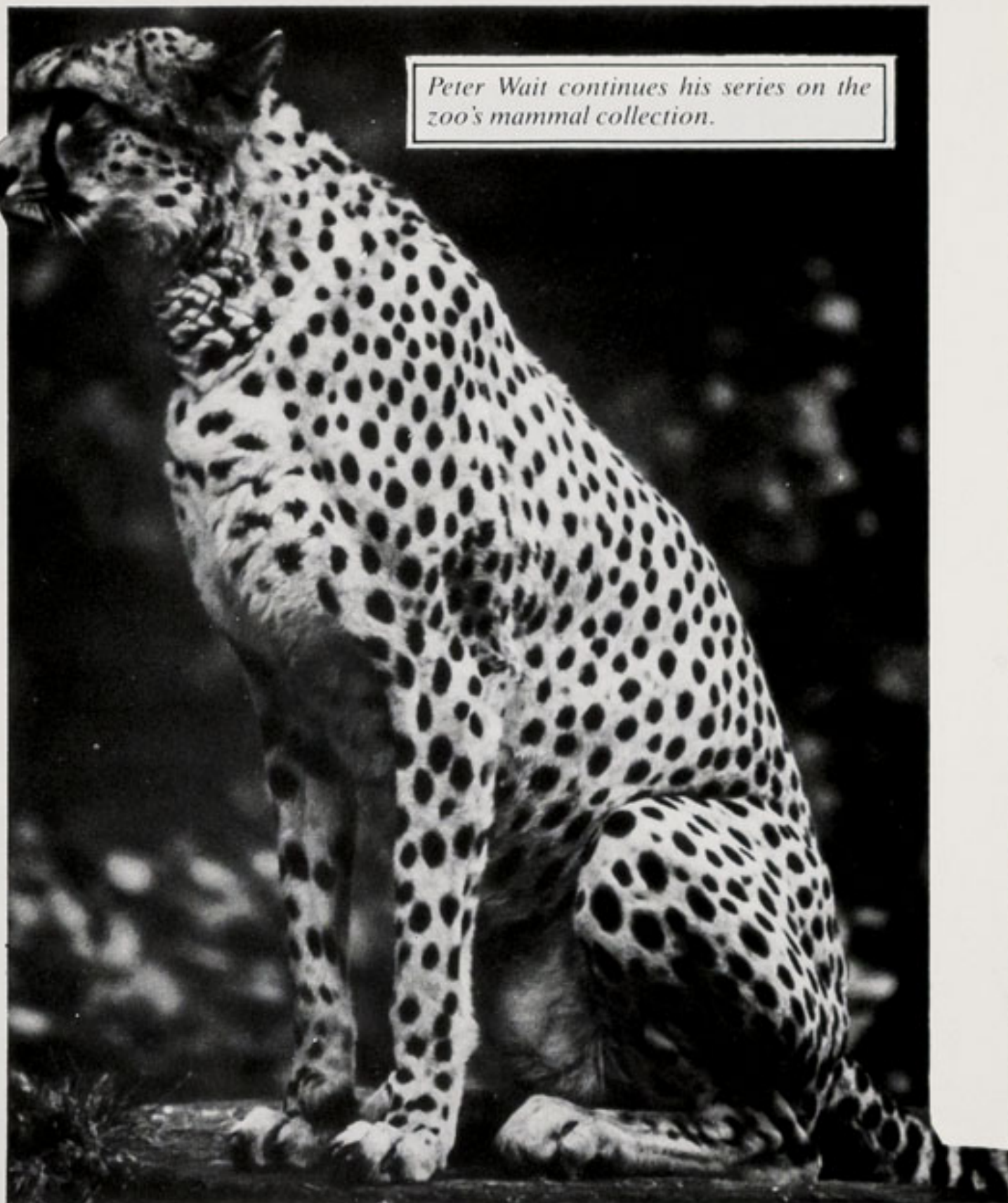
The gestation period is 91-95 days after which up to six cubs are born. There is a poor survival rate for the cubs as they are very dependant on the availability of food and through predation by other animals. In the later stages of pregnancy, the female also finds hunting difficult, having the extra weight to carry. However, it has been reported that males will sometimes stay with the female until after the birth of cubs and help with the feeding.

At birth the cubs are yellowish grey in colour, have the familiar dark spots, and weigh 250-280 grms. They have short manes extending from the neck along the spine, (the name *Jubatus* is derived from the latin *Jubatus* meaning maned). This mane moults when the young are about three months old. The eyes are open at around ten days but are incapable of focusing until they are about twenty days old. They are able to walk at two weeks and start taking solid food a week later. Any surviving in the litter will stay with the parent well into its second year. Maturity is reached at two years.

Hunters

Cheetahs regularly hunt in small groups, usually a female and her family or two or three males together. This gives them an advantage when defending territory or hunting larger game. Their favourite prey is gazelle but they will catch smaller game such as hare, guineafowl and the young of larger game such as wildebeest, zebra and ostrich.

Man has kept cheetah for around 5000 years and they were used as hunting companions by the Egyptian Pharaohs. These animals were tamed and trained to hunt like the greyhounds of today. In modern times, hunting with cheetah was far more popular in Asia than in Africa. The history of captive cheetah unfortunately does not present a pretty picture. Hundreds were caught for use as "hunting leopards" by



Peter Wait continues his series on the zoo's mammal collection.

emperors and princes and as the Asian stocks declined they were imported from Africa solely for hunting purposes.

The first recorded cheetah in a zoological garden was at Regent's Park, London in 1829, followed by others in European zoos later in the century. It is therefore rather surprising that the first zoo birth was not recorded until 1956 at Philadelphia, USA, and not until 1967 in England when Whipsnade started their successful breeding programme. Since breeding started in zoos there have been over 1600 births.

However, there is still much to learn about this endangered cat. Although breeding has improved in captivity from wild caught stock, very few of the captive bred animals have reproduced. New techniques are being learnt and co-operation between zoos means that this knowledge is shared and hopefully will lead to a better understanding of this complex cat.

History at Chester

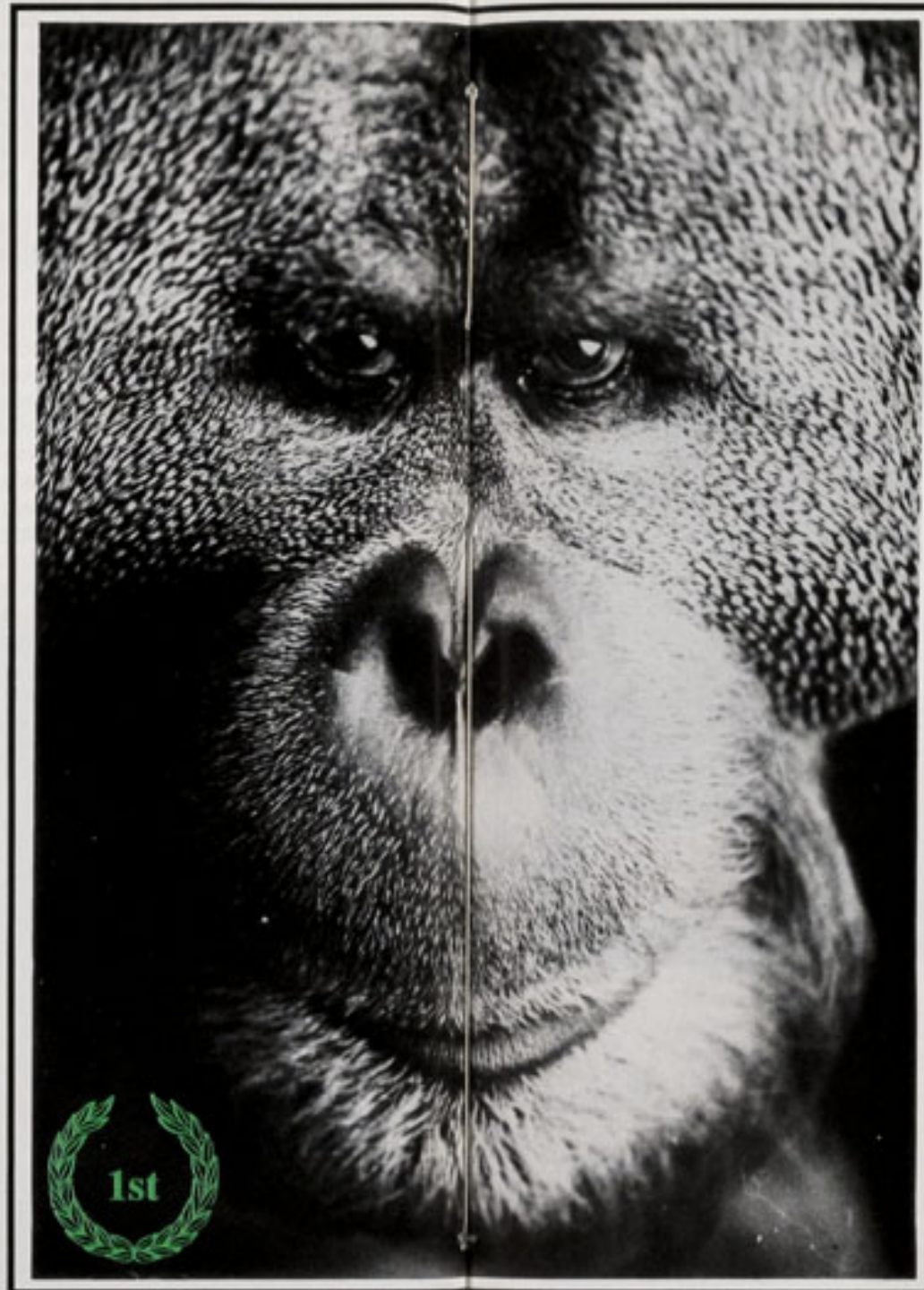
The first cheetah, a male, came in October 1955, presented by the Royal National Parks of Kenya. Two other males were purchased to join him. Another pair was purchased in 1968, and the first captive bred stock was received from Whipsnade in 1974.

Recently, new enclosures have been erected and with the acquisition of a proven male from Fota Wildlife Park, we are hoping to make a start breeding the species. We have now two males and three females and five enclosures to house them. It is thought that a choice of males will provide more stimulus to the females and hopefully produce the desired result.

All cheetahs at Chester are part of a breeding programme and as such belong to the Joint Management Group of the National Federation of Zoos.

Peter A Wait
Senior Curator

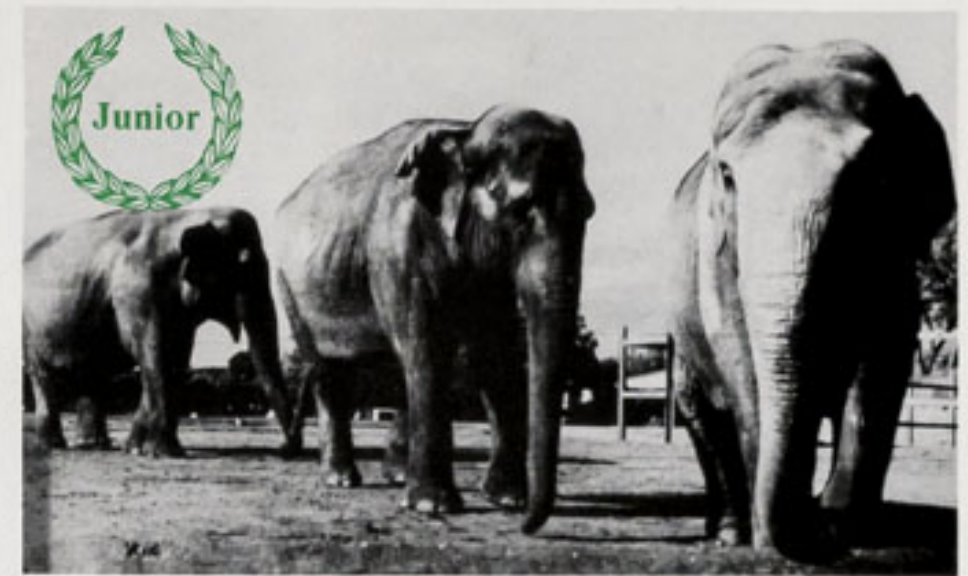
THE PHOTOGRAPHIC "OSCAR" WINNER!



The judges for the 1990 Zoo Photographic Competition had an enormously difficult task - there were over 1500 entries!

Their final selection is shown on these pages and the winners received their prizes at the January members' meeting.

The judges - Brian Williams, Managing Director of Williams, Barber and Bird, George Green, Picture Editor of North Wales Newspapers, and Brian Royal of Kuoni Travel - chose a slide portrait of Oscar the orang utan as the overall winner. Mr Geoff Mansell of Telford wins the title of Chester Zoo



Photographer of the Year, and the fabulous African Safari holiday with Kuoni Travel and South African Airways. By happy coincidence, the fourth prize winner was his wife, Angela so she will also be sharing the first prize!

Other winners are: 2nd Prize: Mrs W. Hamblett, of Nettleham, Lincoln. 3rd Prize: Ian Humphreys of Wrexham. Gardens Prize: Mrs Christine Jackson of Halifax. Junior Photographer of the Year: 15 year old Alison Walsh of Strathaven, Lanarkshire.



Greater Vasa
Parrots

Our birds and bird staff excelled themselves this year with a very respectable total of 79 species of birds hatching some 425 chicks. Of course we had our disappointments, and not all the species hatching young reared them successfully, but 67 species rearing a total of 308 chicks just beat our previous recent best year of 1988. To put some meat on these bare statistics let us first consider the parrots.

Amazons

We had our best year ever with the larger parrots. Our Lilacine Amazons had never shown any sign of breeding, so we decided to replace them with Green-cheeked Amazons. The Lilacines then surprised us by laying eggs for the first time so securing their future with us. Although no chicks hatched, this was very promising, as was the first nesting of a pair of Hawk-head Parrots. The Hawkheads hatched a chick although this died a few days old. Our Leadbeaters Cockatoos laid but unsuccessfully incubated their first

BIRD REVIEW 1990

clutch of eggs. We decided to pull the second clutch and these were taken as laid and removed for artificial incubation. Both eggs hatched and two chicks were reared by Anne and Paul Morris. Anne and Paul were also kept busy hand-rearing a Kea and a Blue-eyed Cockatoo. A second Blue-eyed Cockatoo was reared by its parents; this was especially gratifying as it was the first time this pair had attempted to breed.

Keas

The Keas have been laying eggs over a number of years but failing to hatch any chicks. As such their eggs were taken for artificial incubation. The eggs

of high altitude parrots such as Keas behave differently to those of other parrot species and a particular problem is getting them to lose sufficient water during incubation. In order to achieve the desired weight loss the eggs must be weighed at regular intervals and the humidity of the incubator adjusted accordingly. Nick Manning and Mark Pilgrim found that in order to hatch the eggs the incubator had to be run dry and silica gel employed to achieve the desired water loss. Red-sided Eclectus Parrots hatched chicks but we were unsuccessful in rearing these either under their parents or by hand-rearing.

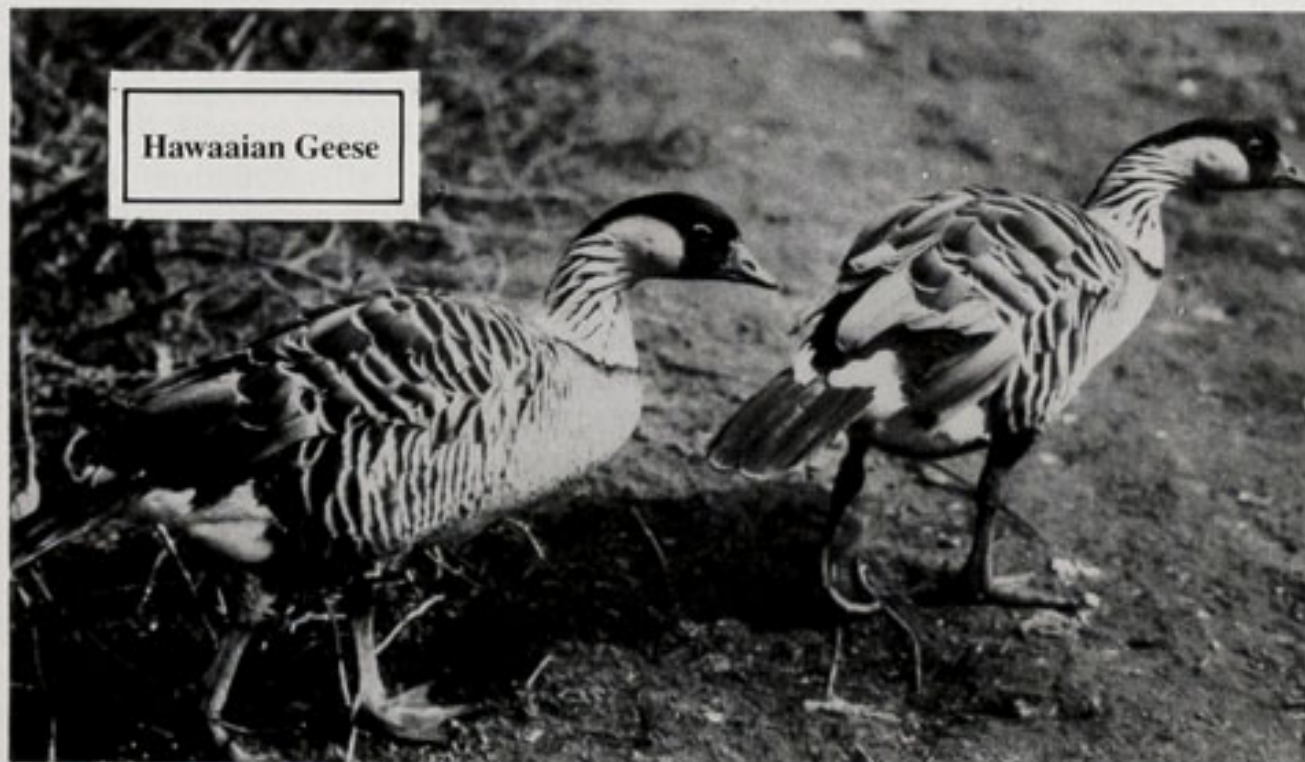
Meanwhile Andrew Woolham and Karen Davis were busy at the Parrot House overseeing their charges. Although when necessary we hand-rear parrots, our ultimate aim is for the birds to rear their own young. Our greatest successes this year were with the Red-fronted Macaws which bred for the first time at Chester, rearing a single youngster from their second clutch and with the Greater Vasa Par-

rots which reared two chicks — a UK first breeding of this species. We had the UK first breeding with the Lesser Vasa Parrots back in 1985 and these were again successful this year in rearing a brood of four chicks. The Blue and Yellow Macaws, again reared two superb youngsters.

Other psittacines bred included Lesser Patagonian Conures, Slender-billed Parrakeets, Yellow-backed Chattering Lorys, Musk Lorikeets, Musschenbroeks Lorikeets, Derbyan Parrakeets and Splendid Parrakeets. New to the collection were Scarlet Macaws and a pair of Blue-throated Conures; the latter being an endangered species from the remnant Atlantic forests of Brazil.

We had particular success in 1990 with the pheasants. Nick Manning supervised the hatching of 19 Himalayan Monals of which 16 were successfully reared, and he reared 13 out of 14 Brown Eared-pheasants. Two Satyr Tragopans were also reared in addition to a number of commoner species. Back at the Bird House, Barry Rowley and Roger Merry watched over the rearing of three Grey Peacock Pheasants. One of these chicks was hatched and reared by an unpaired female. This bird had laid and was incubating its own infertile eggs at the time our breeding pair laid their first clutch. Her infertile eggs were then replaced by the fertile eggs from the pair and she proved a model parent. The breeding pair reared two chicks from a subsequent clutch. New to the collection are a pair of Temminck's Tragopans which can be seen in the arcade aviaries by the Bird House. The Variable Chachalacas reared a fine chick but no curassows were bred.

Crowned Plovers, Blacksmiths Plovers, Superb Spree Starlings and Coletto Mynahs again reared chicks and the Kookaburras had another successful year fledging six chicks.



Hawaian Geese

Hornbills

The Trumpeter Hornbills reared two chicks for the second year running.

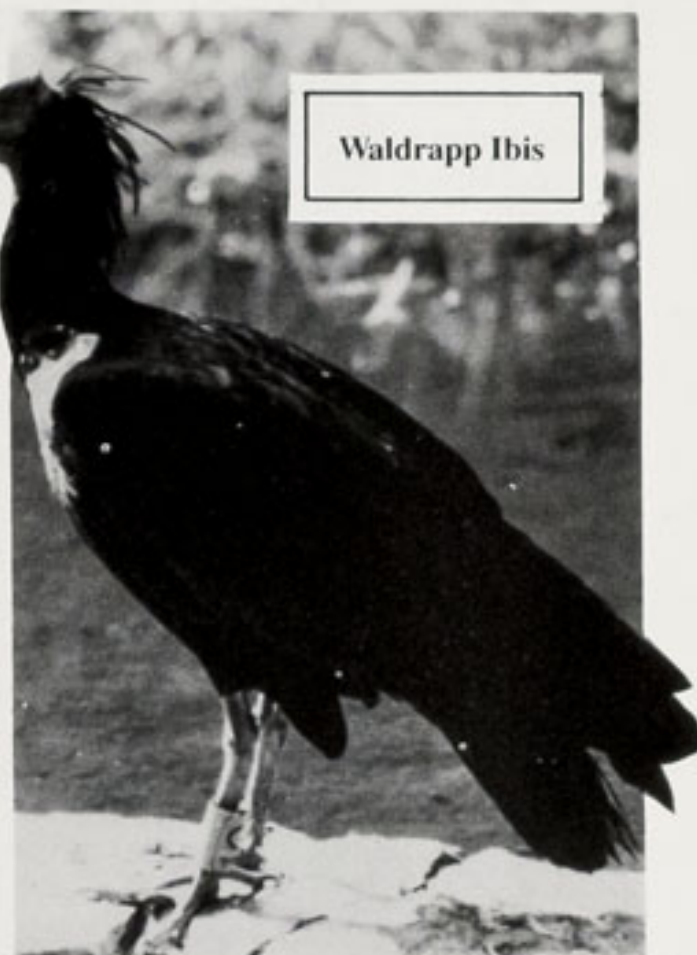
Wrinkled Hornbills nested for the first time but the female emerged alone without any indication of hatching success. Two Bar-tailed Cuckoo Doves, were reared. Two pairs of Pink Pigeons laid and two chicks were hatched after fostering their eggs to Java Doves and domestic pigeons. The Java Doves reared one chick to four weeks old but sadly that bird died before it reached independence. Rothschilds Mynahs also had a shaky year but one chick was taken from the nest at a few days old and successfully hand-reared by Paul and Anne Morris.

Our greatest success with an endangered species was the rearing of seven Waldrapp Ibis reported in a previous article. Three chicks were hand-reared by Nick Manning and his helpers and four resulted from supplementary feeding of the chicks under their parents by Wayne McLeod.

Flamingos

The lack of breeding in 1990 of our flamingos resulted from the necessary disturbance due to major work required to complete the new flamingo shed and the extensive new enclosure around the Lemur Island. The Chilean Flamingos now occupy this new area, leaving the Caribbean Flamingos to occupy the older area. We hope it will not be too many years before the birds settle down in their new situations.

Wayne was also particularly gratified when the Channel-billed Toucans repeated last year's success in again fledging two youngsters. In 1989 the



Waldrapp Ibis

eggs of the Collared Aracaris proved infertile and despite exchanging our male for a new bird, again this year the eggs were infertile. New to the collection is a pair of Toco Toucans and recently on display, also for the first time in some years, is a Sparkling Violetear Hummingbird.

We were especially pleased to rear four Mountain Witch Doves, White-headed Buffalo Weavers and Golden-



Kea

Palm Weavers again both fledged young. The Plumbeous Redstarts nested and one chick was reared to independence but sadly died later in the year. Birds nesting in the free-flight area included White-rumped Shammas, Fairy Bluebirds (one of which was hand-reared by Wayne McLeod) and

Java Sparrows. Emerald Starlings hatched chicks but disappointingly failed to rear them. A major new development nearing completion in the Tropical House is the conversion of the old gorilla inside enclosures to two massive new aviaries. These are currently being landscaped and will be planted to simulate a rain forest environment. One of these aviaries will house our Great Indian Hornbills and the other our Rhinoceros Hornbills.

Cranes

Another recent development is the netting over of one of the crane paddocks. Two telegraph poles were erected inside the paddock from which, tent like, was fitted a specially tailored section of trawler netting to reach down to the top of the chain-link sides of the enclosure. Our initial reason for roofing this area was that we received a full-winged female Red-crowned Crane from Baraboo, Wisconsin. We preferred not to pinion this adult bird and hope that this enclosure may be a model for future areas for cranes and storks.

The new Red-crowned Crane female has settled in well with the Rotterdam male; indeed it seemed to be love at first sight! The White-naped Cranes laid for the first time last year and one of the second clutch eggs proved fertile but died during development.

Two Sarus Cranes were hatched. One was reared by a bantam but the chick left with its parents failed despite their experience in successfully rearing a chick in 1989. Most significant of all was the hatching of two chicks from eggs laid by one of our pairs of West African Crowned Cranes. The two chicks hatched under a bantam on September 24th but had to be separated because of the aggression of one towards the other. The chick left with the bantam was found dead shortly afterwards. The remaining chick was then reunited with the foster mother. That chick really was a survivor and despite the trauma of a green stick fracture is now well grown and still with its foster mother. The Demoiselle Cranes laid but again the eggs were infertile. Two White Storks were reared by their parents and these together with one of the chicks that we bred in 1989 have since been sent to Bristol Zoo.

A male Andean Condor was incubator hatched and puppet-reared, and is destined for Antwerp Zoo. Since 1985 we have reared a total of eight chicks. The previous year's young female condor has now joined Moscow Zoo. We also had a good year with owls; our most important success being

that both pairs of Spectacled Owl each reared a youngster. Paul Everett hand-reared three Great Horned Owls and a Snowy Owl.



White-faced
Scops Owl

Three further Snowy Owls, two European Eagle Owls and seventeen Barn Owls were parent-reared. As previously, the Barn Owl chicks were taken by Carol Hackney for the Keele University monitored release programme. Carol tells me that zoo-bred Barn Owls released in Cheshire and Staffordshire in 1989 are still being reported from their release areas and that there is a strong probability that one pair of zoo-bred owls, released in Staffordshire in 1988, successfully reared chicks in 1990.

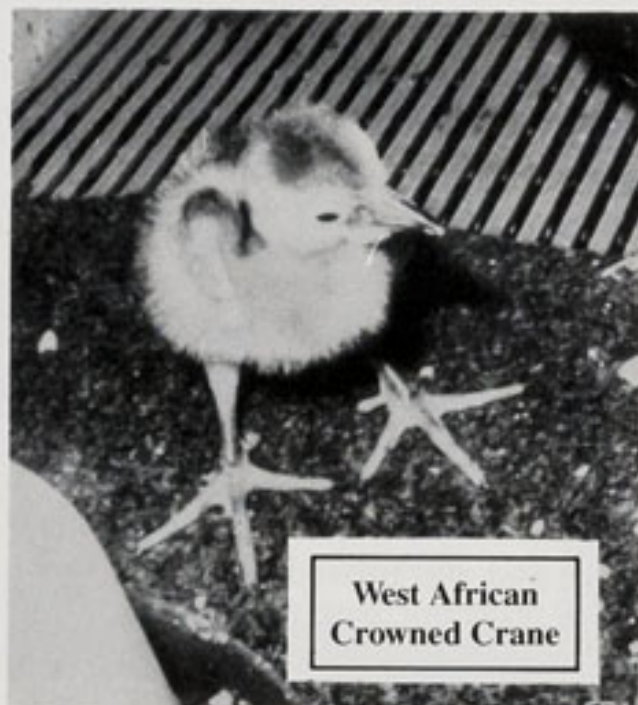
The two female White-faced Scops Owls received from London Zoo in 1989 have now been joined by an unrelated Belgian-bred male. During the year a male Milky Eagle Owl was received on loan from Rotterdam Zoo. A generous gift from an anonymous benefactor allowed us to build two new very spacious aviaries for our Snowy Owls. These have been landscaped to represent a tundra habitat and the owls have quickly taken to these and seem well settled in their new homes.

Waterfowl

Waterfowl are well represented at Chester and 1990 additions include Smew, Garganey, Eider and Lesser White-fronted Geese. Paul Morris, Steve Williams and Nick Manning care for the Waterfowl section with Nick being particularly involved in artificial incubation and hand-rearing. Breeding

this year included amongst the endangered species a very commendable eight White-winged Wood Ducks, ten Hawaiian Geese and four Ruddy-headed Geese. Other waterfowl bred this year included White-faced Whistling Ducks, Fulvous Tree Ducks, Common Shelduck, Marbled Teal, Tufted Duck, Red-crested Pochard, Carolina Wood Duck, Mandarin Ducks and Maned Geese.

We had a poor year with our Humboldts Penguins with only three chicks hatched. Hopefully this reflected changes in the demography of our group with older, previously successful birds being lost from the group whilst we still await younger birds to mature to replace them. However, other zoos have recently had major problems with their penguins and we are keeping a watchful eye over the situation.



West African
Crowned Crane

Finally to end where we usually start; that is right at the beginning of the taxonomic sequence with ratites and their relatives. Our Chilean Tinamous continued to breed and their nearest relatives, the Rheas, reared three chicks. We received two male Red-necked Ostriches from Fota Wildlife Park, the second to replace one that failed to establish itself at Chester. We have recently returned the "cocktail" ostrich generously loaned by Haigh Hall Country Park, Wigan, and expect to shortly receive a female Red-necked Ostrich from Cotswold Wildlife Park. The Emus gave an excellent Easter exhibition with their five newly-hatched chicks but despite previous requests for chicks these again proved difficult to place and this year's eggs will have to be scrambled!!

Finally, we welcome three recent newcomers to our bird collection, Steve Gallivan, Darren Langford and Bruce West.

Dr Roger Wilkinson
Curator of Birds



ZOO-FARI OVERHEAD RAILWAY UPDATE

Since work began on 6th October last year, staff and visitors could not have failed to notice the activity on the preparation and site works for the new monorail system.

A total of 162 foundations have been excavated. Steel re-inforcement bar cages together with the jigs carrying the stanchion holding down bolts were placed, and then, after the positions of the jigs had been checked for accuracy by survey, the mass concrete, about 1200 tonnes of it in total, was poured to complete the foundations for the monorail stanchions.

It all sounds pretty straightforward condensed into a few words like that! But, as the staff know from bitter experience, it wasn't all plain sailing! The disruption of the gas and electricity supply to the staff canteen and the Jubilee cafeteria caused a few anxious moments for the catering staff. The movement of animals to permit work to progress in the paddocks gave the keepers a fairly intense day, persuading first onagers, then ostrich and eland to change quarters. Then there was the inquisitive wallaby who hopped the fence to inspect the excavations in the emu paddock - causing a bit of a panic for the contractors! Finally, there was the cat house staff's three day chess game with gnu and axis deer, coupled with their world record for disrupted telephone links and water supplies.

Ken Roberts, Project Engineer, wrote this article in January. Since then, rapid progress has been made, and the train should be up and running (literally!) by Easter.

However, in spite of all this, and thanks to the good humour and co-operation of everyone - the works were completed without any permanent scarring.

So now, with the really mucky bit complete, we've almost completed the next stage, the erection of the steelwork. This may involve some inconvenience, but it shouldn't cause any serious problems. More importantly, as the various sections are completed, it will permit the garden staff to get going on the reinstatement of the rose beds and borders which are traversed by the mono-rail.

Closely connected with the steelwork erection is the installation on the mono-rail beam of the "bus-rails" - that is, the conductors carrying the power supply and control systems to the trains. There are about 8 kilometers of bus rail and about 2 kilometers of electrical conduit to be fitted, so this in itself is more than just a "five minute" job. However, when this is completed, the more exciting part of the project will commence - the arrival of the trains themselves, and the initial runs around the circuit.

At the moment, the major works getting under way are the building of the train storage shed by the boat house, and more interesting, the construction of the Monkey House and Jubilee stations. The main control room is attached to the Jubilee station.

This control room will house all the switching systems which enable the trains to run completely unmanned, by sensing exactly the whereabouts of each train on the circuit, and then regulating the speed to ensure that they never approach each other closer than the pre-determined limit.

Also housed here are the closed circuit TV equipment enabling the controller to view the activity at the two stations and the radio communications links which provide the information as to the trains' position on the track.

Once the track and stations are completed, there will be very little manifestation of what will be a period of intense activity by the installation and commissioning team, who will be working flat out to achieve completion ready for Easter operation.

Further from the "front line", but just as important, work has begun in producing the in-car commentary which will entertain visitors as they make their high level journey around the zoo, and which will hopefully assist in making the mono-rail a real force in attracting more visitors to the zoo.

JU NEWS



IN TOUCH

The Contact Session is one of the most popular Junior Members' Meetings. In January, 120 Juniors turned up at the Lecture Theatre, to make acquaintance with some of the zoo's animals.

Above: Herpetologist Keith Brown introduces a tarantula and a rhino iguana.

Parker meet a pot bellied pig.

Below right: Richard Roberts shows Rebecca Birtles how to handle a slow worm.

Below left: Emily Forth and Joanne



Junior Members' Field Trips and Meetings



HILBRE ISLAND

PLEASE NOTE CHANGE OF DATE

Owing to problems with the tide times, we have had to postpone our visit to Hilbre Island. This will now take place on **SATURDAY 1st JUNE 1991**.

We will leave the zoo car park at 10.30am arriving at West Kirby in good time to walk over to the island. We plan to remain on the island whilst the tide comes in so that we are able to see the seals and to visit the conservation/ringing centre on the island. High water is around 2.00pm so we should be able to leave the island soon after 4.00pm, returning to the zoo around 5.30pm.

Over tens are welcome. Please bring wellies, a picnic lunch and warm clothing!



TRACKS AND SIGNS

23rd March 1991

By popular demand, this event is back in the programme again this year. We will be spending the day searching the enclosures for suitable spoor from which to take plaster casts. This tends to be a wet and muddy day in March, so please wear wellies and suitable clothing.

We will meet outside the Oakfield at 11.00am and the day will end at 4.00pm. Remember to bring a packed lunch. Over eights welcome.

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**PLEASE
NOTE**

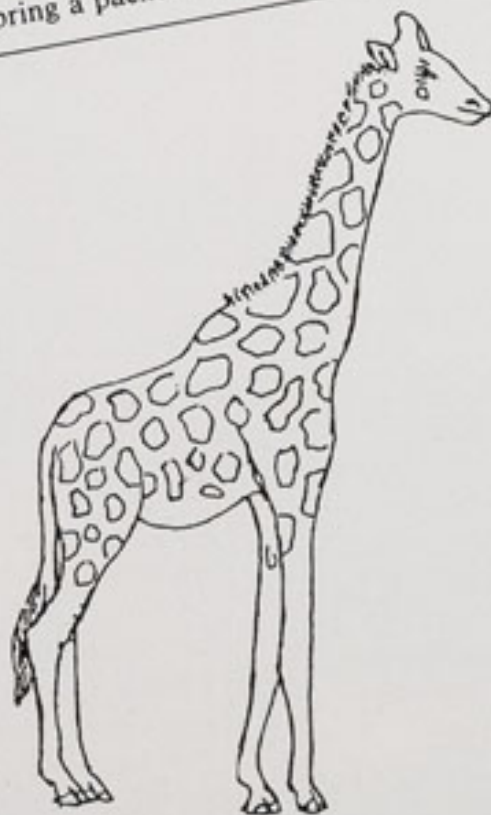


DAY HELPING KEEPER

20th July 1991

One of the events so many of you look forward to, when you are invited to spend the day working alongside one of the keepers. As the work involved is quite strenuous, we have to limit this event to the over twelves only. You will need a packed lunch, and you must wear wellies or strong old shoes.

We will meet outside the Oakfield at 10.30am, and the day will finish for the Juniors at 4.00pm



THE CHESTNUT CENTRE

22nd June 1991

This time we will be heading off to Derbyshire to visit this charming nature reserve where you will be able to see a few native animals such as foxes and otters, and have an opportunity to learn about some of the nature of our own country.

We will leave the staff car park at 10.00am returning at 5.00pm. You will need a picnic lunch. Over eights will be welcome.



PLEASE NOTE

Please see page 3 for notice about your magazine.

Bookings must be made for all events. Please ring Penny at the Zoo not more than two weeks before any event if you would like to attend. Places are allocated on a first-come/first-served basis, and may be limited.

For those trips which involve either a bus trip, or the provision of food or materials, a charge will have to be made in order for us to cover basic costs, but we do try to keep this as low as possible and it will vary according to what is provided.

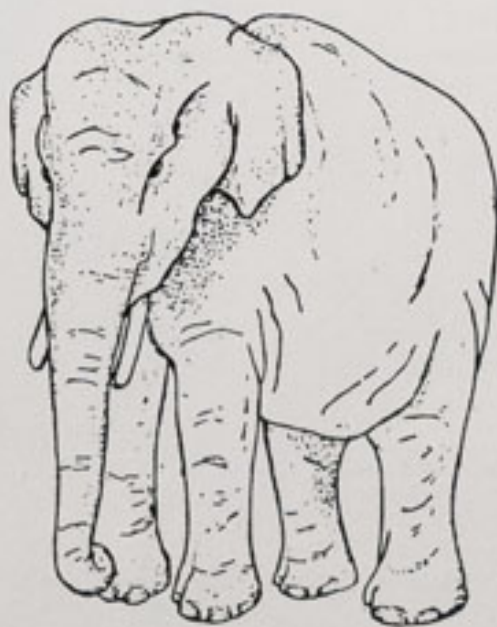
The list is provisional, and in exceptional circumstances, we may have to alter the dates and times of some of the trips. You will not be informed of such changes individually, so you must keep an eye on the magazine when it comes out each quarter to check that you are up-to-date with Junior Members' News.

BRIDGEMERE WILDLIFE PARK

Saturday 27th April 1991

The newly owned Bridgemere Wildlife park near Nantwich is becoming well known for birds of prey flying displays and children's visits, so we thought we would go to have a look!

We will leave the staff car park at 10.00am, returning to the zoo around 4.30pm. You will need a picnic lunch, and over eights are welcome to come.





Black Spider Monkeys

November/December/January

MAMMALS

Long-nosed Potoroo	Potorous tridactylus	2.2.0	Temporary loan
Rodrigue's Fruit Bat	Pteropus rodricensis	0.0.3	(2 DNS)
Pygmy Marmoset	Callithrix pygmaea	0.0.2	Twins born
Spider Monkey	Ateles paniscus chamek	0.1.1	Born
Chimpanzee	Pan troglodytes	0.1.0	Born
African Crested Porcupine	Hystrix cristata	1.1.3	(3 DNS)
Coypu	Myocastor coypus	1.0.0	Born
Coati	Nasua nasua	1.0.0	Exchange -Paradise Park
Persian Leopard	Panthera pardus saxicolor	0.1.0	received from Bristol Zoo
Guanaco	Lama guanicoe	2.2.0	Born
Nilgai	Boselaphus tragocamelus	1.1.0	Twins (DNS)
Red Lechwe	Kobus leche	3.0.0	Born
Arabian Gazelle	Gazella gazella arabica	0.0.3	Born
Pygmy Goat		0.0.14	(1 DNS)

REPTILES

Sail-fin Lizard	Hydrosaurus amboinensis	0.1.0	Presented
Green Tree Boa	Morelia viridis	1.1.8	Rec'vd from Washington Zoo
Brazilian Rainbow Boa	Epicrates cenchria cencitiria	1.2.0	

BIRDS

Humboldt's Penguin	Spheniscus humboldti	0.0.3	Loan from Whipsnade
Ross's Snow Goose	Anser rossi	0.1.0	Loan from WFT
Smew	Mergus albellus	2.2.0	Trade
Crowned Plover	Vanellus coronatus	0.0.2	(DNS)
Speckled Pigeon	Columba guinea	1.1.2	On loan
Bar-tailed Cuckoo Dove	Macropygia unchall	1.0.0	Return loan
Golden Heart Pigeon	Gallicolumba rufigula	1.1.0	Purchased
Luzon Bleeding Heart Pigeon	Gallicolumba luzonica	1.0.0	Purchased
Red-flanked Lorikeet	Charmosyna placensis	0.1.0	Purchased
Scarlet Macaw	Ara macao	1.0.0	Loan from Whipsnade
Violet Plantain Eater	Colius castanotus	1.1.0	Loan from Hale
White Woodpecker	Lueconerpes candidus	1.0.0	Purchased
Java Sparrow	Padda oryzivora	0.0.4	Fledged

AQUARIUM

Frontosa	Cyphotilapia frontosa	Bred
Blue Discus	Symphysodon aequifasciata haraldi	Bred

Key: Col. 1 = Male, Col. 2 = Female, Col. 3 = Young, or unknown.