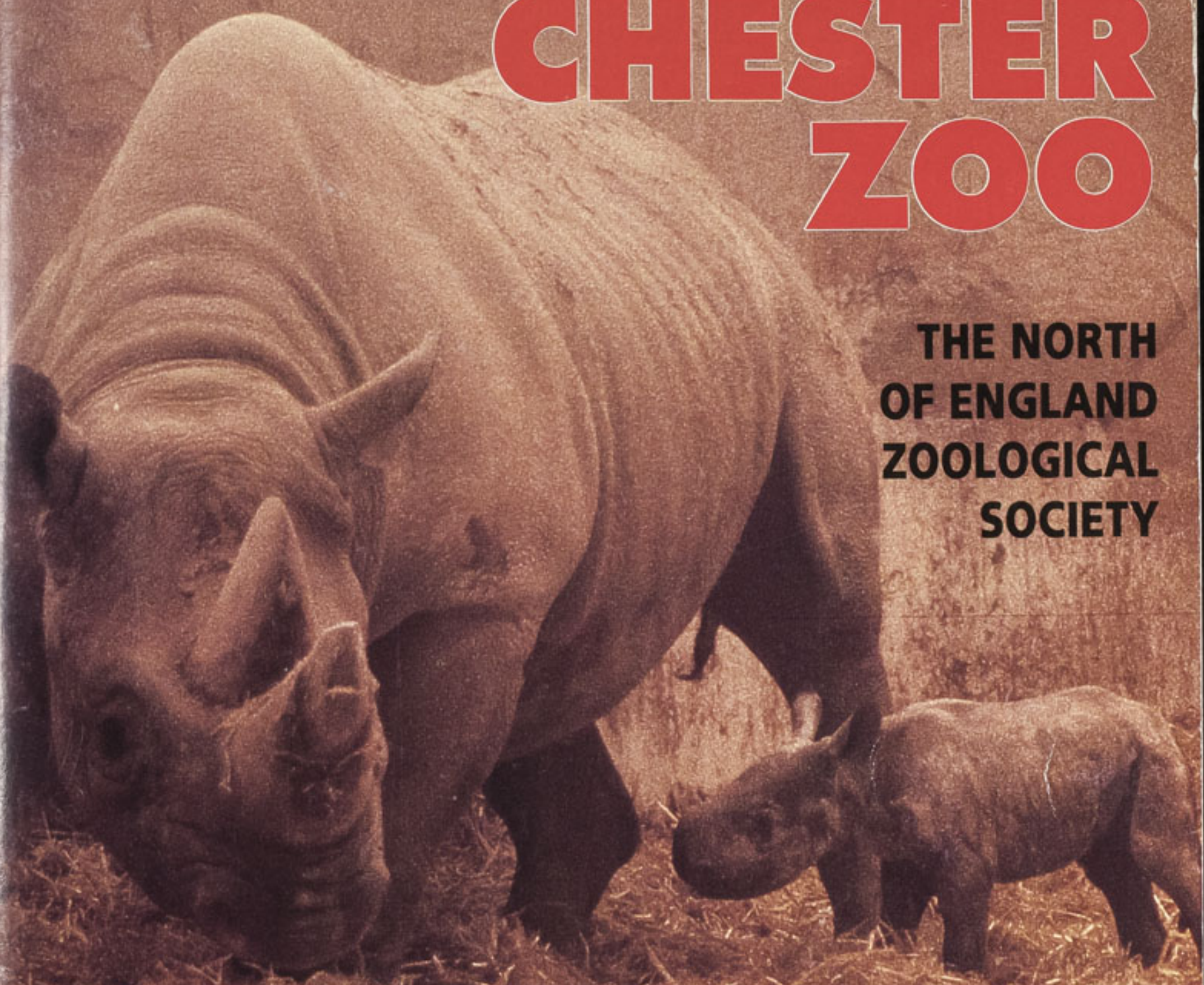




CHESTER ZOO

THE NORTH
OF ENGLAND
ZOOLOGICAL
SOCIETY



**ANNUAL
REPORT
1991**

CHESTER ZOO

Chairman's Report



The Chairman of the North of England Zoological Society Council takes office halfway through the financial year of the Zoo, so that I find myself reporting to you with less than a year's experience at the helm!

However, I have been fortunate in taking over from a Chairman to whom the Society owes an enormous debt of gratitude. Andrew Thomson has chaired the NEZS during five years of rapid and continuous development. He has steered the Society with sensitivity and energy and committed his period in office to fostering greater understanding by Council of the function and operation of Chester Zoo. The fundamental importance of the relationship between Council and executive was clearly and carefully identified and understood by Andrew; a point for which Chester Zoo must be grateful when we look at the sad situation that overtook London Zoo during the year. Andrew leaves office in the sure knowledge that he has built bridges and secured foundations that will benefit the Society long into the future.

Of course, there has been much real as well as metaphorical construction at Chester Zoo. Most obvious in 1991 has been the monorail. Despite giving me my first public duty as Chairman in a less than auspicious manner, the monorail is promising to be the benefit to the Zoo that was intended. I must record our thanks to HRH The Duchess of Kent for formally opening the railway and for her patience and understanding when the programme changed unexpectedly. As an internal transport system as well as an attractive viewpoint, it is an important addition to our infrastructure, and one that will become an increasingly significant service when the new entrance is opened.

I look back, too, to the Irish Sea Symposium which attracted a lively and well-informed audience. The Society is establishing itself as a forum at which serious debate of contemporary biological and conservational issues can take place, and we look forward to continuing this programme.

1991 also saw several staff changes at the Zoo. I would like to send all those who retired our very good wishes and to welcome all new members. It is to the staff that our thanks go for the continuing success and high reputation that the Zoo enjoys.

The Director has rightly emphasized the difficult path that the Zoo must follow between commercial viability and scientific credibility - indeed it is a balance that all zoos must achieve. At Chester, we continually strive to strike the right balance and, in my view, do so with considerable success. It is not an easy task, particularly in these times of recession, but our appreciation must go to the Director and his management team for guiding the Zoo so carefully along this difficult route.

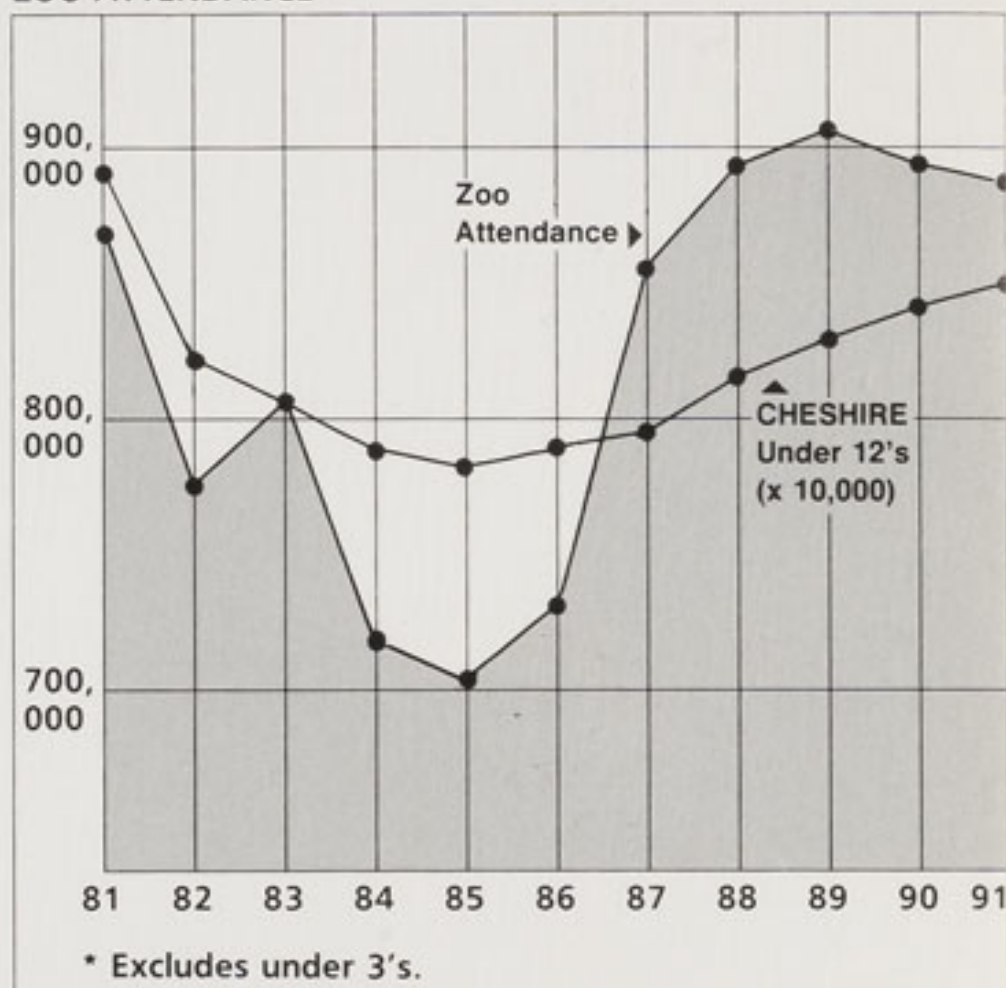
I think a new Chairman must give members a glimpse of the future as well as a look back at the past. I see Chester Zoo becoming the most important zoo in the UK and at the forefront of the international movement for the conservation of wild animal species. To achieve this Chester Zoo will continue to develop in accordance with its founding principles while achieving the more demanding standards which we must set ourselves in response to the increased public perception and concern regarding conservational issues.

Chester Zoo will continue to be a place of beauty to visit. A place in which animals are cared for and exhibited in a manner which fosters an understanding of their relationship with each other, with their environment, and with man.

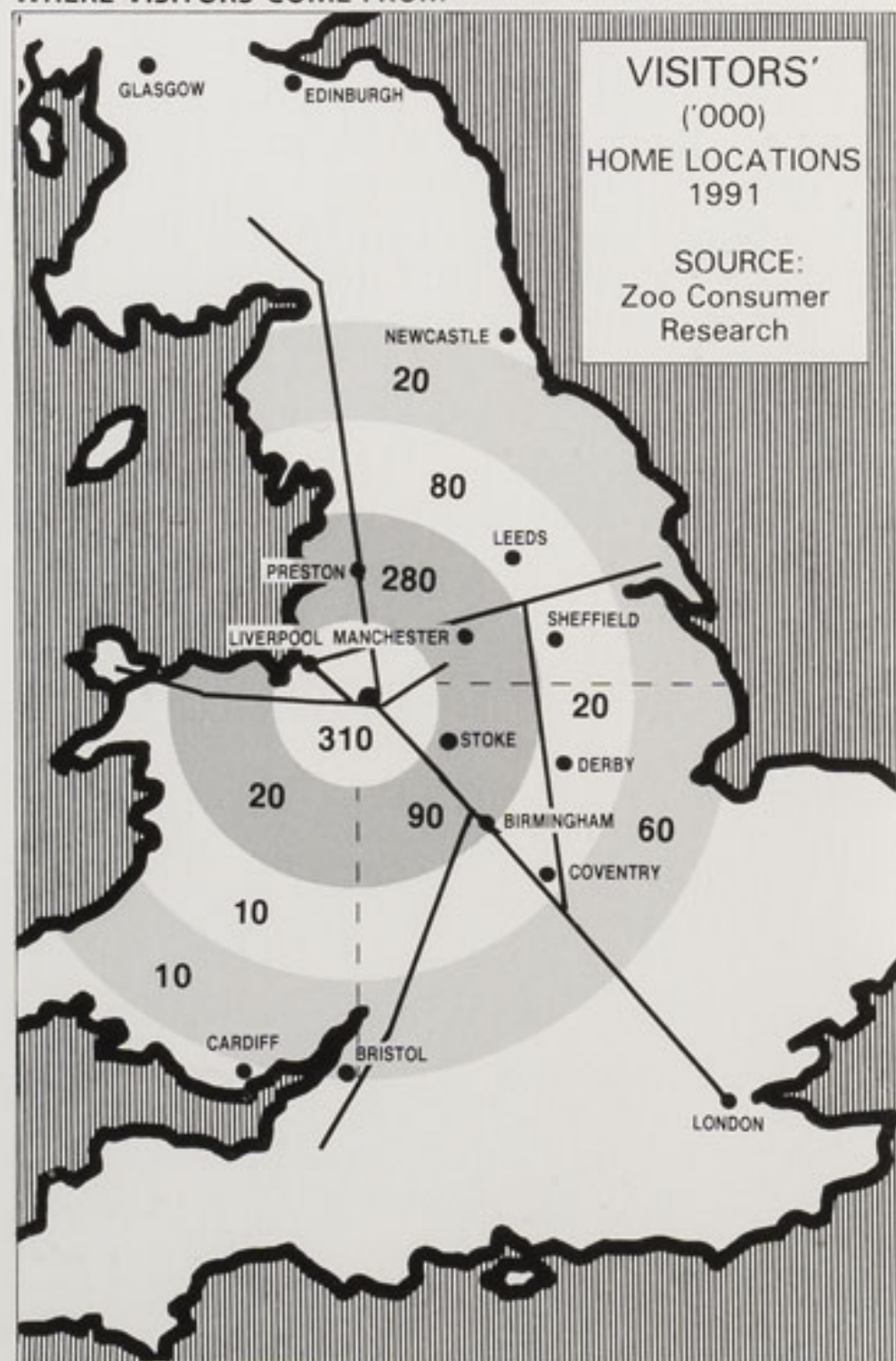
I look forward with confidence to the successful future of Chester Zoo.

Mrs Beatrice J. Jones

ZOO ATTENDANCE*



WHERE VISITORS COME FROM



The North of England Zoological Society Council & Membership

President

His Grace,
The Duke of Westminster DL

Vice Presidents

Dinah, Lady Tollemache
Professor Emeritus J.O.L. King,
Ph.D., M.V.Sc., B.Sc., (Agric),
F.R.C.V.S., F.I.Biol.

The Council

Mrs B.J. Jones, B.Sc. (Chairman).
Dr J.R. Baker,
Ph.D., B.V.Sc., F.S.A. (Scot),
M.R.C.V.S.
A.R. Barnes, Esq.
B.A., F.C.A., C.P.A. (K).
B.H. Coles, Esq.
B.V.Sc., M.R.C.V.S.
Dr D.A.P. Cooke,
F.R.C.G.P., F.R.P.S.
Miss J.P. Dixon,
C.Chem., F.R.S.C.
D.B. Edwards, Esq.
B.V.Sc., M.R.C.V.S.
A. Guy, Esq.
J.H. Howatt, Esq.
F.C.A. (Vice Chairman).
M.A.R. Johnson, Esq.
M.A., F.C.A., F.C.M.A.
Mrs E.M. Livingstone.
Dr J.S. Madden,
M.B., B.Ch., B.A.O., F.R.C.P.
F.R.C.Psych.
Mrs J. Straughan.
A.L.B. Thomson, Esq.
F.R.I.C.S., F.C.I.Arb., M.A.Cost.E.

Director of Chester Zoo and Company Secretary

Dr Michael R. Brambell,
M.A., Vet.M.B., Ph.D., M.R.C.V.S.

Financial Controller and Deputy Director

E. A. Du Cros, Esq., F.C.A.

Registered Office:

Zoological Gardens,
Caughall Road, Chester CH2 1LH

Company Registration:

Number 287902 (England).

Registered Charity

Number 306077.

Membership as at 31st December 1991

| | 1991 | 1990 |
|--|-------------|-------------|
| Life Members | 170 | 172 |
| Honorary Members | 8 | 8 |
| Members of more than 25 years standing and over pensionable age | 28 | 22 |
| Annual Members | 2649 | 2064 |
| TOTAL | 2855 | 2266 |
| Associate Members | 3 | 4 |
| Junior Members | 1347 | 1051 |
| | 1350 | 1055 |
| GRAND TOTAL (All categories) | 4205 | 3321 |



The Society is a member of the Federation of Zoological Gardens of Great Britain & Ireland, linking zoos in co-operative breeding and joint management projects as well as helping promote the interests of members.

The Society is a member of the World Conservation Union (also known as IUCN) in the category of national non-governmental organisations.



A view from the scaffolding on the Stable Block Spire.

Director's Report

Dr M R Brambell,
Director of the Zoo.



Testing the Zoofari Overhead Railway.

1991 ended with only 1.4% fewer visitors than 1990, but those figures do not show the difficulties. The year started against the sombre background of the Gulf War. As we began to recover from that, the economic depression and the weather seemed to combine to keep the public at home; but then came August and we were back almost level pegging with 1990.

No matter how much the Zoo feels that it has an important job to do, it cannot forget that it can only do it by operating within its income. This depends on attracting sufficient visitors and earning a surplus. The surplus can only be slender if we are to keep the perception of giving value for money.

Though the Zoo is a charity dedicated to furthering the affairs of wild animal life through education and species conservation, it is firmly in the leisure industry for its income. It must compete with ever more sophisticated rivals. It must do so by giving value for money and it must be seen to be striving to meet its aims. Competition forces down margins, conservation forces up demand for increased surpluses. 1991 demonstrated the fragility of that balance.

Chester must never forget that expenditure must not exceed income. Yet that is precisely what happened in 1991, for although, in normal trading the Zoo operated in surplus, the late delivery of the Zoofari Overhead Railway denied us a full season's income. We were faced with the alternative of deferring for a year the repayments or of keeping to our original plan and turning in a loss. We chose the latter. For the first time since 1985 we show a loss. Comparing like with like, we made a surplus of £29,942 on general activities, but a loss of £188,140 on the railway (net loss of £158,198). We believe this to be entirely 'one-off', due to the railway not being delivered in time for Easter and only a partial service from the beginning of August until the end of the busy season. From the results of the last few months we are confident that the railway will be contributing to the surpluses from 1992 onwards.

No doubt some will question the wisdom of the railway. We see it as an essential part of the Zoo development. In 1991 we began to re-interpret the Zoo in an exciting way. Starting with the Elephant House where ten double panels have been hung from the roof, we moved on to the Rhinoceros House, and ended with the plans for the Aquarium, the Parrot House and part of the Tropical House very well advanced. However much we achieve in animal conservation, we cannot convince our public unless we tell them.

The birth of Emma, the black rhinoceros, set the animal scene for 1991. Her birth heralded the end of a long period in which this species had not been breeding at Chester and showed the enormous value to conservation which can be gained from inter-zoo co-operation. We earnestly hope that black rhinoceroses



EMMA

can be saved in their wild habitats, but the dangers of possible political instability in at least some of the countries of origin are so obvious that it would be foolish not to have a 'lifeboat' population jointly managed but spread across the world, just in case of a disaster. The international zoo community must see that their 'lifeboat' populations are sufficiently viable and spread out for them to survive and provide stock for eventual return. It has been done with the European Bison and the Arabian Oryx. Chester has contributed to the rehabilitation of Père David's Deer. We are striving to be able to do the same for everything else we keep.

To do this we always need to be improving our animal houses and our standards of keeping. We've achieved a lot but we have a long way still to go. It is the theme which our new Curator-in-Chief, Dr. Gordon McGregor Reid takes up on the opposite page.

It was gratifying for the Lion Tailed Macaque appeal to reach its target of £10,000 so quickly. It was reached much sooner than we had expected. We had planned to complete the Asian Plains exhibit and to have started the new Birds of Prey aviaries before beginning on the site for the Macaques between the Monkey House and the Cat House. Well done all who helped!

1991 saw much change. Our Asian Elephant, Judy, mother of Jubilee, went to Dublin Zoo after the accommodation there had been refurbished. Our hope is that female elephants in Ireland can be

managed as a breeding population, using Belfast's bull and that Judy's departure may remove the maternal inhibitions which might be holding back Jubilee's development and sexual maturity.

On the marketing front, we have had to set up a separate trading company in order to cover those items which the Inland Revenue deem not to be "zoological". Apparently toys in the shape of animals do not qualify, as well as many other items. Without the new company, which is a wholly owned subsidiary of the Society, there could be a tax liability. This can be avoided by the company covenanting a sum equal to its profits to the Society. This is what will happen, though it has involved us in a lot of extra work in order to stand still. **It is difficult to believe that anyone really meant to increase the burden for no real purpose on those charities which actually get down to earning the means to carry out their aims.**

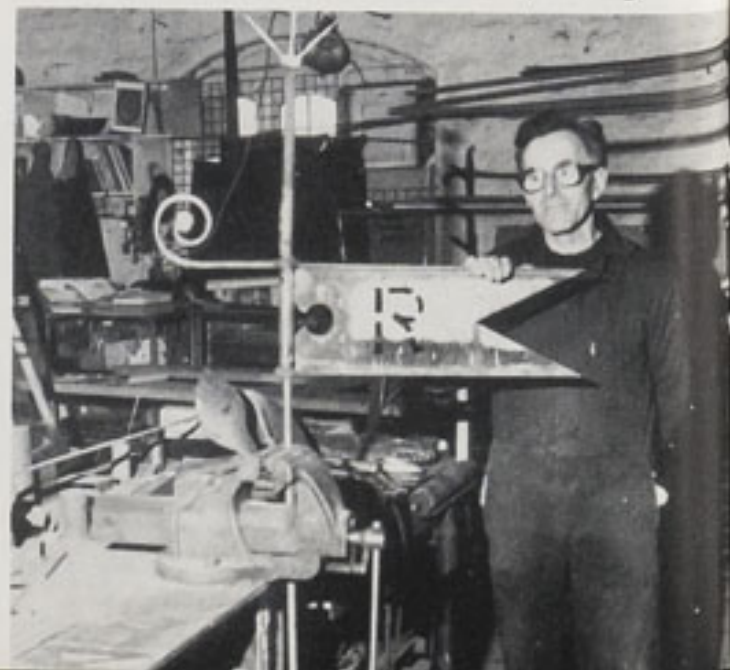
Cheshire County Council's secondment of a teacher to our Education Division has ended, a move forced by their financial stringencies. Since 1983, we have received an enormous amount of encouragement from the County. It is right to record our thanks. Without it, we could not have built up our impressive educational service.

In August, Mrs. Evelyn Gallup, widow of our first Head Gardener Philip Gallup, who was responsible for the initial planting of the gardens, unveiled a plaque to his memory in the rose garden.

During the year much work has been done under the initiative of Mrs. Margaret Parslow, on improving the conservation value of the Society's non-zoo land, and especially on improving the quality of many of our ponds.

Our first veterinary and zoology scholarships have been awarded, and we continue to support zoo outreach work in India.

Finally - a look to the immediate future. Negotiations were at an advanced stage at the end of the year to enable the City of Chester to build a roundabout and an access road from the A41 (on the North West of the Zoo) onto the Society's land, to enable the City to establish its own Park and Ride service and allow the Zoo to move its gate away from the present congested approach. Our part of the work will probably not start until late 1992 or early 1993. It is not before time, for our gate facilities need radical updating.



Mr. Larry Shepherd, Zoo Blacksmith, refurbishing the stable block Weather Vane 'It's good for its next 100 years' he said.

Conservation Status Report

By Dr Gordon McGregor Reid,
Curator-in-Chief

The World Wide Fund for Nature estimates, from present rates, that by the year 2050 almost two million kinds of animal may become extinct.

This is a staggering and uncomfortable prospect. As well as hordes of exotic insects and other invertebrates like the *Partula* snail, the list could include many large, familiar but increasingly endangered animals such as Black Rhinoceros, Chimpanzee, Ring-tailed Lemur, Humboldt's Penguin and Red Crowned Crane. Other less well known but equally important creatures under threat of extinction are Cuban Boa, Sailfin Lizard, Blind Cave Fish from Oman and many different kinds of tropical coral (which are plant-like animals). Though it may be possible to save all the species of land vertebrates which need help, it will not be possible to save all threatened taxa for our own and future generations to see and appreciate. However, the North of England Zoological Society - often in international collaboration with other organisations and individuals - already makes a special and substantial contribution to the long-term survival of animal species. It does so mainly through active and wide-ranging conservation breeding programmes for carefully selected mammals, birds, reptiles, fishes and invertebrates - both exotic and local.

An Oasis for Conservation

The Zoo acts as a sanctuary for animals and - if ecologically appropriate - this allows for the ultimate conservation option of returning animals to the wild, when natural populations become sadly depleted or extinct. We are proud of the fact that almost all of the ninety different species of mammals in our care are zoo-bred and now operate controlled programmes for over 85% of them. Our recent notable achievement with Black Rhinoceros, resulting in the birth and fairly trouble free rearing of 'Emma' has already enhanced the Zoo's reputation. This we expect to repeat, because 'Esther' (Emma's mother) is evidently pregnant and due to give birth this year in August or September. Our Chimpanzee colony is up to a group size of 18 females and 6 males (presided over by the ever-dominant 'Boris'). Spanning four generations, we can now fairly claim it as the most important zoo breeding group anywhere. Some other kinds of mammal are especially 'difficult' and we still aim for greater breeding success with Cheetah, Celebes Macaque, Black Spider Monkey, Small-clawed Otter, Asian Elephant and Persian Onager (a much under-appreciated wild ass).

Over recent years we have dramatically increased the number of zoo-bred (as opposed to wild) birds and reptiles kept in our collection for breeding purposes to over 90%. For many reptile and some bird groups (such as parrots) this value is now nearly 100%, but there will always be cases where stock is imported due to conservation crises in nature or to



maintain an essential genetic vigour in the zoo population. Such importations are made in concert with the wildlife authorities in the countries of origin.

From over 180 bird species held at Chester, 130 or more (over 70%!) regularly lay fertile eggs and a high proportion of these hatch and are raised to maturity. Only a very few of the world's zoos even approach this outstanding record. Significant rearings this year include Waldrapp Ibis, Ruddy-headed Goose, White-winged Wood Duck, White-eared Pheasant, Red-fronted Macaw and Rothschild's Mynah. Following improvements in our avicultural methods - especially the better incubation of eggs and rearing of chicks - we now intend to phase out about six common and readily bred birds from our list and start work on several other rare and more difficult species, including Hyacinthine Macaw and Mauritius Kestrel.

Among reptiles and amphibians 33 out of 65 species (just over 50%) regularly breed, although - as with mammals and birds - particular breeding cycles may span more than one year. The Madagascan Tree Boa is, for example, reproductively bi-annual. We previously set a world record with this endangered snake in 1988, when 17 young were produced. One of our females is again gravid and, all going well, due to give birth in April 1992. Other endangered and distinctive reptiles and amphibians which are being successfully bred include Rhinoceros Iguana, Sail-fin Lizard and Red-eyed Tree Frog. Green Tree Pythons, Plumed Basilisks and Emerald Tree Boas have been formed into breeding groups for the season. Attempts are also being made to rear the sinister-sounding Poison Arrow Frog but, here, the provision of quantities of suitable live food for emergent tadpoles is proving to be a problem.

Concerning fishes, we currently breed (or have the controlled capacity to breed) 28 out of 138 species (or 20%) - far more than any other comparable organisation in Britain. The list of achievements include unusual live-bearing Sea Horses and Freshwater Sting Ray, delicate Turquoise Discus, endangered Cherry Barb and four species of rare Rainbow Fish. Nevertheless, the Aquarium does not yet have laboratory facilities sufficient to mount major conservation breeding schemes for fishes or aquatic invertebrates (such as endangered corals) and we need to improve upon this situation. Fishes - however rare in nature - are extremely fecund compared to other vertebrates. They often lay hundreds, thousands or even millions of eggs at one spawning. Any active scheme is thus soon likely to be swamped with an over production of fish fry. We have, for example, had an 'embarrassment of riches' in producing more than 400 fry from the first recorded spawning of a near extinct Blind White Fish (*Garra barreimiae*) endemic to a single lake in a deep cave in Oman. Here, and for some other areas in the collection, we must consider the long-term advantages of 'conservation banks' of frozen ova, sperm and fertilized eggs - a technology now being developed by the zoo community.

Cooperating for Progress

The World Conservation Union (still known under its old acronym IUCN) has, since 1986, formally recognised and supported the 'unique and indispensable' contribution that zoos can and do make to the global conservation effort through cooperative breeding schemes. Chester Zoo's remarkable success with the near extinct Rodrigues Fruit Bat (*Pteropus rodricensis*) is a good recent example of international cooperation. In 1983 the NEZS agreed to participate in a rescue plan coordinated by the Jersey Wildlife Preservation Trust on behalf of the Mauritius Government who administer the Island, and we received 10 Rodrigues Bats. There was little success for two years but, with careful and systematic variations in animal management, the colony started to produce babies. We now have 41 bats; sufficient this year for us to donate 15 juveniles to stock two other zoo breeding centres overseas.

A similar joint conservation scheme for endangered Polynesian *Partula* snails, peculiar to the remote Pacific island of Moorea, now operates between Chester and London Zoos, the Jersey Wildlife Preservation Trust and the University of Nottingham. Important advances made at Chester in the husbandry of these snails (particularly in the composition of the diet) has resulted in overwhelmingly increased production rates (650 individual *Partula*, at the last count!).

Such inspiring examples are, of course, duplicated elsewhere among several other taxa in the collections of the North of England Zoological Society.



New Asian elephant arrival from London Zoo, Ti Hi Way (3rd from left) soon fitted into the herd.

The Animal Collection

By Dr Gordon McGregor Reid, Curator-in-Chief

The animal collection of the North of England Zoological Society continues to be managed for the purposes of conservation breeding, education and benign scientific study.

Budget

The total funds required in 1991 to support the animal collection (welfare and management) were £1,280,000 (or approximately one quarter of the total cost of running the Zoo). This is an increase on the previous year of £149,000 (equivalent to £2,900 per week or just over 13%). The proportion of these costs directly referable to animal welfare are tabulated in the income and expenditure account. Operating costs were offset by about 6% from the generosity of the public in sponsoring the 'animal adoptions' scheme to the value of £79,500. This - through effective marketing - represents a very encouraging increase over the previous year in the value of adoptions of £17,300 (or ca 29%).

Livestock holdings

During the year the Society maintained over 4,800 individual animals from 546 species representing a very wide range of taxa - the details of which are given to

the end of the year in the tabulated stocklist. At the beginning of the year there were: 733 mammals (from 89 species in 65 genera, 11 orders and 3 subclasses); 867 birds (from 207 species in 145 genera and 21 orders); 360 reptiles (from 67 species in 58 genera and 5 orders); 125 amphibians (from 15 species in 13 genera and 2 orders); 2116 fishes (from 138 species in 105 genera, 44 families, 3 superorders and 3 classes); and over 635 invertebrates (30 species in 28 genera and 4 major phyla: coelenterates, molluscs, arthropods - insects, crustaceans, arachnids - and echinoderms).

Excluding numerous invertebrates and fishes, a total of 1007 animals were born into the collection (208 mammals, 464 birds, 179 reptiles and 156 amphibians). Awards gained from external bodies in recognition of our breeding successes include the Foreign Bird Breeder of the Year - the top zoo award offered by the Foreign Bird Federation. Certainly, survival rates are good and improving: 154 or 74% of mammals and 321 or 69% of birds; with correspondingly high, but so far unquantified, values for all other taxa. This represents an overall collection growth rate of about 41% for mammals, birds and herptiles combined - offset by mortalities and disposals (see next col.).

Livestock transactions

The Zoo has an active animal acquisitions and disposals (transfers/loans/donations/exchanges) programme to support and foster cooperative management schemes between zoos. This is for the purpose of conservation breeding and to maintain the genetic integrity of the livestock. This programme operates both nationally and internationally and many transactions are controlled by the Studbook Co-ordinators for the species concerned. A total of 672 acquisitions were made (35 mammal, 126 bird, 65 reptile and 446 fish). We obtained, for example, Pink Pigeon and juvenile Madagascan Tree Boa from the Jersey Wildlife Preservation Trust. Four Chester-bred adults of this same snake species went to the Smithsonian Institution National Zoological Park, Washington. Notable acquisitions from abroad include two Red-ruffed Lemurs from Zurich Zoo, six African Pied Starlings from the Tygerberg Zoological Preservation Trust, South Africa and two female Red-crowned Cranes from Walsrode, Germany. The successful move of the female elephant 'Judy' to Dublin Zoo was one of the larger and more difficult overseas transactions from an overall total of 1,719 vertebrate disposals (82 mammal, 269 bird, 126 reptile, 193 amphibian and 1,049 fish).

The new interpretative signs installed in the elephant house have attracted much favourable comment, and an A4 version is selling well in our shops.

There is no doubt that Chester Zoo is becoming an increasingly important focus for animal conservation through Joint Management schemes. Several key working groups (operating under the aegis of the Federation of Zoological Gardens) conducted their business on N.E.Z.S. premises and with our participation. The fruitful coordination and direction of such diverse elements is not easy and it will, for years to come, represent a major challenge in conservation action.

Animal Health

A high standard of animal welfare was maintained through appropriate diets, veterinary care and quarantine procedures.

Diet. The total cost of supplying nutritious food in the correct quantities was 22% of the divisional budget. This amounts to £284,579; a gain over the previous year of £9895 (corresponding to a fall in expenditure of 3.4%). This welcome change comes mainly through reasonably stable market conditions, improved purchasing procedures, economies of scale, careful monitoring and the reduction of wastage to a minimum. Altogether, more than 795 tons of food were supplied to the animals (see page 21 for details).

Veterinary Care. The veterinary department made 1,831 visits to individual animals involving 523 clinical cases (an increase of 51 or 11% over the previous year).

Immobilisation/anaesthesia took place on 87 occasions (fewer than last year by 16 cases) and 295 post-mortem examinations were conducted (up by 10 on last year). The death of our Hippopotamus after 30 years in the collection, is perhaps the most notable loss among mammals. Full clinical and post-mortem reports on all cases were filed by the attending veterinary surgeons and these are monitored by the Scientific Committee of the Zoo. The control of parasites and disease is generally successful but there are some chronic problems, as with the persistence of gapeworm (*Syngamus*, a nematode bird parasite) in the Tropical House and other areas. A total of 21 animals (mammals and birds) were received by our Quarantine Station at Birkenhead. There were no losses and all of these animals were later transferred to the Zoo in excellent condition.

Information

Approximately 100 small format, new information labels and 500 replacements were prepared in-house, with artwork by Les Grandy. Positive Printing Services continue to market our animal sign system resulting in an income of £2,200. Eighteen large-scale interpretative panels highlighting aspects of biology and conservation were prepared externally by Colin Tudge and installed in the Elephant and Rhino houses. These represent a fresh



departure in zoo information and they have attracted a very favourable public response. Publications prepared by the Education Division in consultation with the Animal Division, included 6 Information Sheets, 3 Teachers Packs (of various types) and 3 other publications for the general public (one of which is a multi-pack).

Scientific Study

Several of our conservation programmes involve benign scientific studies of breeding and related behaviour. In other cases, we aim to improve upon our already high standards in animal husbandry and veterinary treatments.

This is important in allowing us to better care for the animals that we keep, to improve their reproductive rates and - as a happy consequence - add more successes to our conservation breeding record. Information routinely gathered by the animal keepers on breeding behaviour, animal welfare and basic biology can ultimately also be important in associated programmes for conserving

animal species in nature.

Two members of staff, under the aegis of the University of Liverpool, are involved in postgraduate studies on mammals: one an M.Sc degree in evolutionary and behavioural ecology of Chimpanzees (S Hogarth); the other an M.Phil in behaviour in relation to environmental enrichment for Crested Macaques (A Britt).

Ornithological studies in progress include observations on free flight birds in the Tropical House (students from Manchester Polytechnic) and genetic karyotyping research on starlings (Dr R Wilkinson, N.E.Z.S. and S Joshua, Q.M.C., University of London). Herpetological studies in progress include reproductive husbandry of Sail-fin Lizard and Red-eye Tree Frog; temperature cycling in Green Tree Python and growth and development in Smoky Jungle Frog (K Brown, I McGeorge, N.E.Z.S.). A collaborative study on the reproductive and developmental biology of Cave Fish from Oman is underway in the Aquarium (M Crumpler, J Bell, N.E.Z.S. and Dr K E Banister).

Publications and Technical Reports

A total of 24 scientific publications, reviews, theses and technical or project reports were produced under the aegis of the N.E.Z.S., as listed below. Five Regional Studbooks or British and European Registers were compiled during the year. There were, in addition, numerous popular accounts contributed to *Zoo Life* by N.E.Z.S. staff.

BROWN, K. W. (1991) *Partula* snails at Chester Zoo. NEZS Technical Report.

BROWN, K.W. (1991, in press) *Guidelines for the safe maintenance of venomous snakes in zoological gardens*. Federation of Zoological Gardens Guidelines Series.

DIBB, H. (1991) Going to the Zoo. *Questions*, 3 (8, June)

FROST, J. (1991) A short analysis of the U.K. Browse Survey. *Proceedings, 5th U.K. Elephant Keepers' Workshop*

FROST, J. (1991) Results of the Browse Survey. *Meteor Publications*

GREEN, R. (1991) Wild cat species of the World. *Bassett Publications*

JONES, B. & NORGAIN, B. (1991, eds) *The Irish Sea*. Proceedings of the Irish Sea Symposium (9 March, 1991) NEZS Publication

LYON, D. G. & WILKINSON, R. (1991) Wing tip oedema and dry gangrene in birds. *Veterinary Record* (June, 1991): 619 (letters)

McKENZIE, C. (1991) *The Red Lechwe* (*Kobus l. lechwe*) at Chester Zoo. *Ratel* 18 (1 February)

McKENZIE, C. (1991) *Kafue Flats Lechwe: an analysis of births, deaths and weights with a view to improving the captive management programme*. NEZS Animal Notes (6)

ORMEROD, N. (1991) *The movement of an established group of chimpanzees into a new house and onto extended islands - March-May 1989*. NEZS Animal Notes (5)

ORMEROD, N. (1991) *The introduction of a male chimpanzee into an existing stable group of chimpanzees in captivity - 1990-1991*. NEZS Animal Notes (7)

OSBY, B. (1991) *Interaction with an environmental enrichment facility by a colony of captive chimpanzees*. B.Sc Honours Degree Thesis, University of Liverpool

RICHARDSON, D. (1991) *The ethology of the Waldrapp Ibis (*Geronticus eremita*) and the behavioural effects of hand-rearing juveniles*. B.Sc Honours Degree Thesis, Department of Biological Sciences, Manchester Polytechnic.

WILKINSON, R. (1991) 'Lifetime reproduction in birds' *Psittacene*. 3 (1, February): 10 (book review)

WILKINSON, R. (1991) *Chester Zoo Notes - 1990* *Avicultural Magazine*. 97: 147-153

WILKINSON, R. (1991) *Lesser Patagonian Conures at Chester Zoo*. *Magazine of the Parrot Society*. 25 (December 1991): 412-413

WILKINSON, R. (1991) *Breeding the Trumpeter Hornbill (*Bycanistes bucinator*) at Chester Zoo* *Avicultural Magazine*. 97 (7): 67-73

WILKINSON, R. (1991) *Notes from the International Ornithological Congress (I.O.C. - N.E.) International Union for the Conservation of Nature, Christchurch, New Zealand*. *Avicultural Magazine*. 97: 136-142

WILKINSON, R. (1991) 'Latham's Spotted Pigeon'. *Birds International*. 2 (1): 9 (letters)

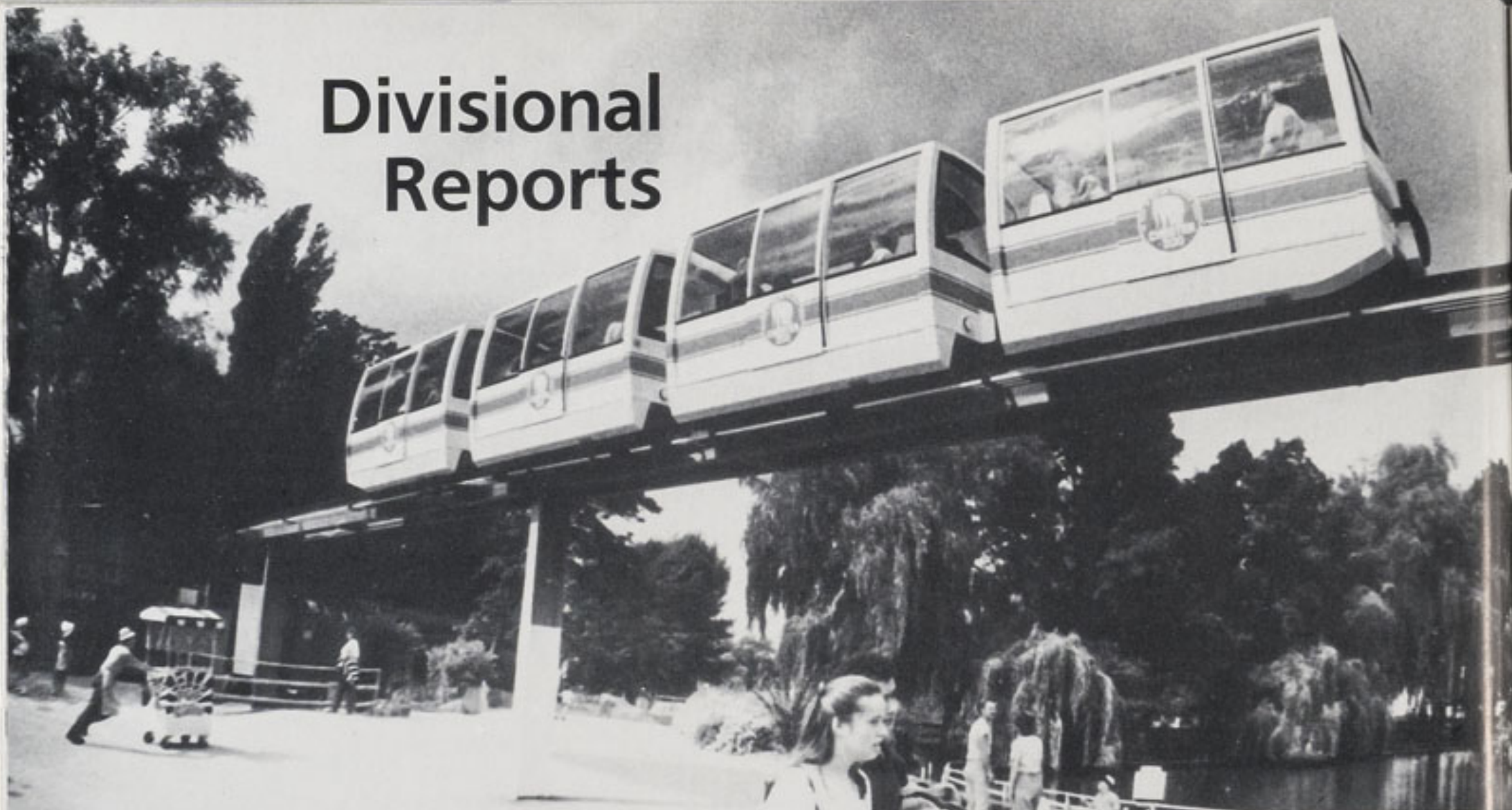
WILKINSON, R. (1991) *The threatening desert: controlling desertification*. *Malimbus*. 13: 44 (book review)

WILKINSON, R. & McLEOD, W. (1991) *Breeding the Ashy Starling (*Cosmopsarus unicolor*) at Chester Zoo*. *Avicultural Magazine*. 97: 163-166

WILKINSON, R. & McLEOD, W. (1991) *Breeding the Channel-billed Toucan *Ramphastos vitellinus* at Chester Zoo*. *Avicultural Magazine*. 97: 179 - 184

WORTHINGTON, J., YOUNG, I. S., & ALTRINGHAM, J. D. (1991) *The scaling of respiratory frequency and energy uptake with mass*. *Journal of Experimental Biology*. 161: 533-536 (originally prepared as a B.Sc Honours Degree Thesis, University of Liverpool, March 1991)

Divisional Reports



Passengers aboard the Zoofari Overhead Railway enjoy panoramic views of the Lemur island and gardens as they approach the canal crossing.

Estates

The highlight of the year had to be the completion of the 1.5km fully computerised, monorail system. Despite teething problems, the system has all the signs of becoming a huge success. It will carry the public across the Zoo with two stations, Jubilee Square and Monkey House.

The Estates Divisions, consisting of Maintenance department, Gardens, Groundstaff and Monorail, had another demanding and fulfilling year.

The Maintenance department, led by Mr. Peter Brady, undertook many varied projects including:

- The new hornbill aviaries, conversion of the old gorilla enclosures in the tropical house. The keepers renovated the outside islands and converted them to an enclosure for Lion-tailed macaques.
- The paddocks alongside the cattle house were enlarged and remodelled incorporating an extension for the giraffes, which has improved an existing wet desolate area. Included in this scheme was the refurbishment of the shippon building adjacent to the giraffe house (which has provided much needed off-show facilities) together with a new paved picnic area.
- The maintenance yard in the stable block, located behind Jubilee Station, has continued to be refurbished and extensive scaffolding was required to gain access to repair the roofs and spires overlooking the lion paddock. This work gained importance when it was realised that before long we could lose this very beautiful building

unless immediate action was taken.

- New offices have been constructed for our curatorial staff, who have moved out of the Oakfield.

Head Gardener, Mr. Eric Rudman, and staff have excelled themselves. In addition to their normal duties, they had to carry out extensive landscaping around the monorail supports. Once again, in conjunction with Tatton Park, Jodrell Bank, Arley Hall and Ness Gardens, we won a silver medal at the Chelsea Flower Show. For the fourth time in six years we were awarded the Britain in Bloom award for the best large tourist attraction in the region.

Throughout the year the groundstaff and toilet staff under the direction of Head Groundsman, Mr. Peter Hughes, continued to keep the Zoo clean and tidy to the standards that are expected by the public. With new radio-controlled parking techniques, they can now park cars at the rate of one every three seconds on Bank Holidays! This has helped the flow of traffic into the Zoo.

The Cheshire Employment Training painters and joiners worked well with the maintenance department and carried out major refurbishments to the Oasis cafeteria, the staff canteen within the Fountain building and the Oakfield restaurant kitchen. The painters continued the valuable maintenance work in areas including the perimeter fence, rhino house, Oakfield offices, aquarium and parrot house.

Other schemes have been started and are still ongoing. The children's playground area has been completely modified with the inclusion of wood bark safety flooring. New developments on the Asian Plains exhibit, opposite the elephants, have begun with plans for a 1992 completion.

S. O'Brien

Education

Despite the pressures on schools, including Local Financial Management, there was a pleasing increase in the number of pupils/students making educational visits (a 7.4% increase on 68,013).

The number of teachers, student teachers and youth group leaders seeking professional advice about using the Zoo for an educational visit, continued to rise. For example, 182 teachers talked at length with one of the Education Officers (a rise of nearly 50%). The policy of being available after school, at weekends and during school holiday times is succeeding. In addition 68 teachers attended Teachers' Courses during the year.

Our volunteers (FEDS) now number 88. During the year nearly 10,000 hours of service were given. Over 66,000 visitors benefited from their efforts. In addition, their behind-the-scenes work in a range of activities provides the Division with vital assistance. A new activity was started in which some FEDS will now go out to talk to local groups about their work in the Zoo.

Christmas Journey numbers showed a 17% increase and, next year, there is room for additional school and young people's groups to join in.

We wish Ann Attwood and Heather Dibb well in their work back in schools and thank them for their contribution to the Division during the past two years. One of the posts will not be filled as Cheshire Education Authority is unable to fund a further secondment to the Zoo.

Miss B.M. Norgain

Marketing

In a year of more difficult trading, our Retail department were the stars, beating budget sales and heading steadily towards £1 million turnover. Catering beat 1991 levels, but fell short of budget expectations. Notwithstanding that - our August ice cream sales were an all time record - over £100,000 in four splendidly sticky weeks! (An ice cream sold to nearly every visitor).

We wrote and produced three new TV commercials, with Emma starring in her own special 10 seconder. We added Yorkshire TV to our media schedule - so that we now cover around a third of UK homes. Investment in high profile advertising with a strong conservational message guarantees our future - whatever the state of the economy.

We produced our first full colour Functions and Party Planner for the Oakfield. Over half the advertising panels on the fingerpost signs in the Zoo have been sold. Our membership of the Cheshire Attractions Consortium continues to enhance our voice in matters of tourism, and we are grateful to the City of Chester and Cheshire County Council's Tourism departments.

Interest in our Adoption scheme flourishes. Party Office coped admirably with very diverse bookings. *Chester Zoo Life* is now printed in full colour - a change that has received wide support.

BBC Radio 4's *Punters* programme sparked an explosion of media interest in elephant manure, with *The Sunday Times* and Granada TV close behind. As a result, useful sums have been raised for the Elephant Keepers' Workshop and a Keepers' Travel Fund. A new, user friendly, souvenir pack of 'Zoo Poo' will shortly be on sale.

Father Christmas returned for what is thought to have been positively the last season in the grotto under the bridge and, once more, the Reindeer were impeccable.

C.M.N. Vere

The Juniors and those lucky adults who made the trip to the Chestnut Centre in Derbyshire's High Peak were enchanted with the wildlife and the conservational care shown by Mr & Mrs Roger Heap and their staff. Here, Juniors cross the valley to meet the Otters.



Adoptions

1991 may have been a year of belt-tightening recession elsewhere - but for adoptions, it was our best year ever, with a year end total of £81,865 (gross of VAT). This is almost an eightfold growth since we began in 1984.

We are most grateful for this support which shows that the value of our conservational work is recognised by individual adopters, groups and by enlightened companies who continue to support our efforts.

Look around the Zoo to see the number of adoptions plaques.

Mrs M.M.A. Allsopp

Membership

During 1991, membership of the Society continued to increase. By the end of December, membership reached 2,649 - 600 being first-time enrolments.

Meetings were well attended. Our President, The Duke of Westminster was the guest speaker in March giving an illustrated talk on the conservation measures being taken on the Westminster Estates, including Eaton Hall.

The members' fund raising campaign to build a new enclosure for the Lion-tailed macaques, launched in December 1990 has reached its target of £10,000. The money was raised largely through support of the two members' raffles, plus many generous donations.

The Society wishes to thank everyone who has contributed to the successful running of meetings throughout the year.

Mrs M.M.A. Allsopp

Juniors

Junior Membership rose to a staggering 1,347 youngsters in 1991. This enthusiastic group's year kicked-off again with the Contact Session, followed in February by the hugely successful visit by the late Professor Beverley Halstead who had the Juniors enthralled on the subject of Dinosaurs. Other events in the Zoo included our Tracks & Signs day and the ever-popular Day Helping a Keeper. Our Summer Barbeque took a new turn when we had a beautiful evening for an outdoor play on the Jubilee lawn called 'Night Wings', all about Bat conservation. Our visits away from Chester took us to Bridgemere Wildlife Park in April and then to the Chestnut Centre in Derbyshire in June where Juniors were delighted by the indigenous species seen and the lovely surroundings, and to Hilbre Island where we stayed over a tide to see the seals as well as to do a spot of birdwatching. The Autumn saw us visiting Pennington Flash Country Park with its large numbers of rare plants, and on to Tatton Park in October to observe the Red Deer rut accompanied by two Park Rangers and to visit Home Farm. In November we headed North to the RSPB's Leighton Moss Reserve at Silverdale where, amongst other rarities, the Juniors saw the Bittern. We ended the year in style with 160 Juniors enjoying the annual Christmas Party. 1991 was another extremely successful and well supported year for the Junior Members' Club.

Mrs P.A. Rudd

Finance and Administration

This Division is responsible for the control and recording of all of the financial transactions of the Zoo. It also includes the gatekeeper, security, and secretarial staff of the organisation. We continue to extend our computer applications and further P.C.s have been installed to augment our existing facilities.

E.A. Du Cros

Staff Report

During 1991 the average number of permanent staff rose by eleven and the full time equivalent of temporary staff rose by thirteen.

During the year the Curator of Birds visited the Amsterdam and Antwerp Zoos. Mr Charles McKenzie spent two weeks at Kolmardens Zoo in Sweden and Mr Vincent Smith worked at the Jane Goodall Institute at Brazzaville in the Congo.

E.A. Du Cros

The North of England Zoological Society

Income and Expenditure Account for the year ended 31st December 1991

| | NOTES | 1991 | | 1990 | |
|--|-------|-----------|------------------|-----------|------------------|
| | | £ | £ | £ | £ |
| TURNOVER | 2 | | 5,147,358 | | 4,697,351 |
| less direct costs of: | | | | | |
| Catering | | 1,026,717 | | 1,014,183 | |
| Souvenir shops | | 495,433 | | 474,812 | |
| Animal welfare | | 972,729 | | 857,691 | |
| Garden upkeep | | 264,241 | | 227,476 | |
| Monorail system | | 174,754 | | - | |
| | | | <u>2,933,874</u> | | <u>2,574,162</u> |
| | | | 2,213,484 | | 2,123,189 |
| Indirect costs (including £506,945 Maintenance (1990 £447,927)) | | | <u>2,215,008</u> | | <u>1,981,682</u> |
| OPERATING (DEFICIENCY)/SURPLUS | 3 | | (1,524) | | 141,507 |
| Other income | 5 | | 28,678 | | 30,827 |
| | | | <u>27,154</u> | | <u>172,334</u> |
| Interest receivable | 6 | 1,364 | | 4,700 | |
| Interest payable - Monorail system | 7 | (87,004) | | - | |
| - Other | | (99,712) | | (73,100) | |
| | | | <u>(185,352)</u> | | <u>(68,400)</u> |
| (DEFICIENCY)/SURPLUS ON ORDINARY ACTIVITIES | 8 | | (158,198) | | 103,934 |
| Transfer from capital expenditure grants | 9 | | 6,375 | | 16,375 |
| | | | <u>(151,823)</u> | | <u>120,309</u> |
| Accumulated surplus brought forward | | | 1,711,443 | | 1,591,134 |
| ACCUMULATED SURPLUS CARRIED FORWARD | | £ | <u>1,559,620</u> | £ | <u>1,711,443</u> |

Report of the Auditors to the Members of the North of England Zoological Society

We have audited the Accounts on pages 10 to 15 in accordance with auditing standards

In our opinion the Accounts, which have been prepared on the basis of the accounting policies set out on page 13 give a true and fair view of the state of the Society's affairs at 31st December 1991 and of its deficiency and cash flow for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

27th March 1992
31 Wellington Road, NANTWICH

AFFORD BOND
Chartered Accountants

The North of England Zoological Society

Balance Sheet at 31st December 1991

| | NOTES | 31.12.91 | | 31.12.90 | |
|---|-------|-----------|-------------|-----------|-------------|
| | | £ | £ | £ | £ |
| FIXED ASSETS | | | | | |
| TANGIBLE ASSETS | 10 | | | | |
| Special buildings, enclosures and equipment | | 2,058,332 | | 1,975,750 | |
| Monorail system | | 1,315,395 | | 13,451 | |
| Freehold property | | 492,628 | | 473,315 | |
| Animals | | 1,000 | | 1,000 | |
| | | | 3,867,355 | | 2,463,516 |
| INVESTMENT IN SUBSIDIARY COMPANY | 11 | | 100 | | - |
| CURRENT ASSETS | | | | | |
| Stocks | 12 | 240,196 | | 199,008 | |
| Debtors | 13 | 55,275 | | 55,920 | |
| Balance at bank | | 4,743 | | 4,641 | |
| Cash in hand | | 40,522 | | 28,248 | |
| Trust fund bank account | 14 | 121,156 | | 103,584 | |
| | | 461,892 | | 391,401 | |
| CURRENT LIABILITIES | | | | | |
| CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR | | | | | |
| Finance leases – Monorail system | | 184,556 | | - | |
| – Other | | 1,165 | | 7,488 | |
| Bank overdraft (secured) | | 1,285,321 | | 774,497 | |
| Trade creditors | | 182,695 | | 168,623 | |
| Taxes and social security costs | | 67,931 | | 50,098 | |
| Other creditors | | 55,586 | | 23,586 | |
| Accruals | | 32,873 | | 14,434 | |
| | | 1,810,127 | | 1,038,726 | |
| NET CURRENT LIABILITIES | | | (1,348,235) | | (647,325) |
| TOTAL ASSETS LESS CURRENT LIABILITIES | | | 2,519,220 | | 1,816,191 |
| CREDITORS: AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR | | | | | |
| Finance leases – Monorail system | 15 | | 838,444 | | - |
| – Other | 15 | | - | | 1,165 |
| NET ASSETS | | | £ 1,680,776 | | £ 1,815,026 |
| RESERVES | | | | | |
| Income and expenditure account | | | 1,559,620 | | 1,711,442 |
| Trust fund | 14 | | 121,156 | | 103,584 |
| | | | £ 1,680,776 | | £ 1,815,026 |

Approved by the Council on 27th March 1992

Chairman of Council
B.J. JONES

The North of England Zoological Society

Cash Flow Statement for the year ended 31st December 1991

| | NOTES | 1991 | | 1990 | |
|---|-------|-------------|-------------|-----------|-----------|
| | | £ | £ | £ | £ |
| OPERATING ACTIVITIES | | | | | |
| Operating (Loss)/Surplus | | (1,524) | | 141,507 | |
| Depreciation charges | | 390,929 | | 233,090 | |
| Loss on sale of tangible fixed assets | | 1,096 | | 3,429 | |
| Decrease/(Increase) in stocks | | (41,188) | | (62,311) | |
| Decrease/(Increase) in debtors | | 645 | | (10,690) | |
| Increase/(Decrease) in creditors (excl. finance leases) | | 82,344 | | 62,414 | |
| Net cash flow from operating activities | | | 432,302 | | 367,439 |
| RETURNS ON INVESTMENTS AND SERVICING OF FINANCE | | | | | |
| Rents received | | 28,678 | | 30,827 | |
| Interest received | | 1,364 | | 4,700 | |
| Interest payable | | (186,716) | | (73,100) | |
| Net cash outflow from returns on investments and servicing of funds | | | (156,674) | | (37,573) |
| TAXATION - Not applicable | | | | | |
| Net cash outflow from taxation | | | - | | - |
| INVESTING ACTIVITIES | | | | | |
| Receipts of capital expenditure grants | | 6,375 | | 16,375 | |
| Receipts from disposal of tangible fixed assets | | 2,086 | | 18,650 | |
| Payments to acquire tangible fixed assets - Monorail system | | (1,448,099) | | (13,451) | |
| - Other | | (349,850) | | (451,831) | |
| Payments to acquire investments in subsidiary | | (100) | | - | |
| Net cash outflow from investing activities | | | (1,789,588) | | (430,257) |
| NET CASH OUTFLOW BEFORE FINANCING | | | (1,513,960) | | (100,391) |
| FINANCING | | | | | |
| Receipts of sponsorship, donations, legacies etc. | 1 | 17,572 | | 13,942 | |
| Receipts from financial leases - Monorail system | | 1,023,000 | | - | |
| - Other | | (7,488) | | 8,316 | |
| Increase in bank overdraft | | 510,824 | | 102,069 | |
| Repayment of loans | | - | | (11,091) | |
| Net cash inflow from financing | | | 1,543,908 | | 113,236 |
| CASH AND CASH EQUIVALENTS | | | | | |
| Increase of cash at bank and in hand | 2 | 12,376 | | (1,097) | |
| Increase in trust fund bank account | | 17,572 | | 13,942 | |
| Net increase in cash and cash equivalents | | £ | 29,948 | £ | 12,845 |

NOTES TO THE CASH FLOW STATEMENT FOR THE YEAR ENDED 31st DECEMBER 1991

| | 31.12.91 £ | 31.12.90 £ | MOVEMENT IN 1991 £ |
|--|---------------|---------------|--------------------------|
| 1. ANALYSIS OF CHANGES IN FINANCING DURING THE YEAR | | | |
| Donations and legacies etc. | 121,156 | 103,584 | 17,572 |
| Finance leases - Monorail system | 1,023,000 | - | 1,023,000 |
| - Other | 1,165 | 8,653 | (7,488) |
| Bank overdraft | 1,285,321 | 774,497 | 510,824 |
| Total financing | £ 2,430,642 | 886,734 | 1,543,908 |
| 2. ANALYSIS OF CHANGES IN CASH AND CASH EQUIVALENTS DURING THE YEAR | | | |
| Cash at bank and in hand | 45,265 | 32,889 | 12,376 |
| Trust fund bank account | 121,156 | 103,584 | 17,572 |
| Total cash and cash equivalents | £ 166,421 | 136,473 | 29,948 |

The North of England Zoological Society

Notes to the Accounts for the year ended 31st December 1991

1. ACCOUNTING POLICIES

There have been no changes in the accounting policies during the year.

(a) **Basis of Accounting.**

The accounts have been prepared under the historical cost convention.

(b) **Fixed Assets**

The Council is of the opinion that the market value of the Society's land, property and buildings is in excess of the book values and for insurance purposes, the Zoo buildings and house properties are valued at £6,186,519 replacement cost.

(c) **Property**

In accordance with the practice adopted in previous years no depreciation has been provided on freehold land or property. It is the Society's policy to maintain its property in good condition, prolonging its useful life and making any depreciation provision immaterial. Repairs and maintenance costs are charged against income in the year as they are incurred.

(d) **Special Buildings, Enclosures, Equipment and Monorail System**

Depreciation is provided at rates varying between 4% and 25% per annum estimated to write off each asset over the term of its useful life. The rates and method of depreciation are consistent with those used in previous years.

(e) **Animals**

No valuation is made of the animal collection at the end of each year. Purchases and sales appear in the accounts as a revenue item in the year in which they arise.

(f) **Leases**

Where the Society enters into a lease which entails taking substantially all the risks and rewards of ownership of an asset, the lease is treated as a finance lease. The asset is recorded in the balance sheet as a fixed asset and is depreciated over its estimated useful life. Future instalments under such leases, net of finance charges, are included with creditors. Rentals payable are apportioned between the finance element, which is charged to the income and expenditure account as interest, and the capital element, which reduces the outstanding obligation for future instalments. All other leases are operating leases and the rental charges are taken to the income and expenditure account on a straight line basis over the life of the lease.

(g) **Stocks**

Valued on a basis consistent with that used in previous years at the lower of cost or net realisable value.

(h) **Pensions**

The Society operates a pension scheme covering the majority of employees and contributions are charged in the accounts as payments are made. Contributions by employees and by the Society are held in trustee-administered funds completely independent of the Society's finances. At the time of the last actuarial valuation on 31 December 1990 the Actuary reported that the accrued liabilities of the Scheme were fully secured.

(i) **Property Sales**

Profit on sales of property consists of the difference between the net amount realised and the sum of cost and subsequent additions and is reported as an extraordinary item in any year where a sale has occurred.

2. TURNOVER

Turnover represents cash and invoiced amounts of admission charges, goods sold and services provided (stated net of Value Added Tax).

| | 1991 | | 1990 | |
|--|------|--------------------|------|--------------------|
| | £ | £ | £ | £ |
| The turnover is attributable as follows: | | | | |
| Admission charges | | 2,558,293 | | 2,313,324 |
| Catering receipts | | 1,432,470 | | 1,431,202 |
| Souvenir receipts | | 801,917 | | 715,026 |
| Monorail receipts | | 73,618 | | - |
| Motor boat trips | | 47,083 | | 40,787 |
| Zoo guides | | 148,182 | | 125,764 |
| Members' subscriptions | | 46,882 | | 42,531 |
| Sundry income | | 38,913 | | 28,717 |
| | | <u>£ 5,147,358</u> | | <u>£ 4,697,351</u> |

3. OPERATING (DEFICIENCY)/SURPLUS

This is after charging:

| | | | | |
|--|---------|----------------|---------|----------------|
| Auditors remuneration | | 6,500 | | 5,850 |
| Depreciation (other than animals) (see Note 1) | | | | |
| Monorail system | 146,155 | | - | |
| Other tangible fixed assets | 244,774 | | 233,090 | |
| | | <u>390,929</u> | | <u>233,090</u> |
| Loss on sale of fixed assets | | 1,096 | | 3,429 |
| Hire of equipment | | 10,117 | | 8,344 |
| Operating lease rentals | | 5,966 | | 10,256 |

4. STAFF COSTS

| | | | | |
|-----------------------|--|--------------------|--|--------------------|
| Wages and salaries | | 2,330,535 | | 1,976,290 |
| Social Security costs | | 210,897 | | 180,291 |
| Other pension costs | | 98,519 | | 61,267 |
| | | <u>£ 2,639,951</u> | | <u>£ 2,217,848</u> |

The average number of employees was as follows:

| | 1991 | | 1990 | |
|-------------------------|------------|-----------|------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| Administration | 34 | 7 | 33 | 4 |
| Monorail | 1 | 2 | - | - |
| Maintenance and Gardens | 57 | 10 | 57 | 8 |
| Keeping | 65 | 2 | 57 | 1 |
| Catering and Shops | 25 | 46 | 24 | 41 |
| | <u>182</u> | <u>67</u> | <u>171</u> | <u>54</u> |

The North of England Zoological Society

Notes to the Accounts – continued

| | 1991 | | 1990 | |
|--|--------------|----------------|--------------|---------------|
| | £ | £ | £ | £ |
| 5. OTHER INCOME | | | | |
| Zoo property rents | | 13,400 | | 14,190 |
| Zoo farm rents (net) | | 15,278 | | 16,637 |
| | | <u>28,678</u> | | <u>30,827</u> |
| 6. INTEREST RECEIVABLE | | | | |
| Bank deposit and money market interest | | <u>1,364</u> | | <u>4,700</u> |
| 7. INTEREST PAYABLE | | | | |
| Bank | | 98,314 | | 71,701 |
| Finance Leases – Monorail | 87,004 | | – | |
| – Other | <u>1,398</u> | | <u>1,190</u> | |
| | | 88,402 | | 1,190 |
| Bank loan not wholly repayable within five years | | – | | 209 |
| | | <u>186,716</u> | | <u>73,100</u> |

8. DEFICIENCY ON ORDINARY ACTIVITIES

The (deficiency) on ordinary activities for 1991 has been adversely affected by the monorail system which, due to late completion, did not generate any revenue before 30 July and was only in partial service for most of the remainder of the year. In accordance with normal practice, depreciation for a full year of £146,155 has been charged before arriving at the deficiency of £188,140 of the Monorail.

| | 1991 |
|---|--------------------|
| | £ |
| (Deficiency) on ordinary activities of the monorail | (188,140) |
| Less: Surplus on ordinary activities of the Zoo | 29,942 |
| Net (deficiency) on ordinary activities | <u>£ (158,198)</u> |

9. CAPITAL EXPENDITURE GRANTS

| | 1991 | 1990 |
|--|----------------|-----------------|
| | £ | £ |
| Balance at 1.1.91 | – | – |
| Grants and donations received | 6,375 | 16,375 |
| Transfer to income and expenditure account | <u>(6,375)</u> | <u>(16,375)</u> |
| Balance at 31.12.91 | <u>£ –</u> | <u>£ –</u> |

10. TANGIBLE FIXED ASSETS

| | Freehold Property | Buildings & Enclosures | Monorail System | Machinery & Equipment | Animals | Total |
|-----------------------|-------------------|------------------------|------------------|-----------------------|----------------|--------------------|
| | £ | £ | £ | £ | £ | £ |
| COST | | | | | | |
| At 1.1.91 | 473,315 | 2,869,768 | 13,451 | 879,813 | 149,685 | 4,386,032 |
| Additions | 19,313 | 238,258 | 1,448,099 | 92,279 | (see below) | 1,797,949 |
| Disposals | – | – | – | (14,471) | – | (14,471) |
| At 31.12.91 | <u>492,628</u> | <u>3,108,026</u> | <u>1,461,550</u> | <u>957,621</u> | <u>149,685</u> | <u>£ 6,169,510</u> |
| DEPRECIATION | | | | | | |
| At 1.1.91 | – | 1,283,818 | – | 490,013 | 148,685 | 1,922,516 |
| Provided during year | – | 147,377 | 146,155 | 97,397 | – | 390,929 |
| Disposals | – | – | – | (11,290) | – | (11,290) |
| At 31.12.91 | <u>–</u> | <u>1,431,195</u> | <u>146,155</u> | <u>576,120</u> | <u>148,685</u> | <u>£ 2,302,155</u> |
| NET BOOK VALUE | | | | | | |
| At 31.12.91 | <u>492,628</u> | <u>1,676,831</u> | <u>1,315,395</u> | <u>381,501</u> | <u>1,000</u> | <u>£ 3,867,355</u> |
| At 31.12.90 | <u>473,315</u> | <u>1,585,950</u> | <u>13,451</u> | <u>389,800</u> | <u>1,000</u> | <u>£ 2,463,516</u> |

Animal purchases of £16,286 (1990 £38,265) and sales of £17,080 (1990 £15,441) have been treated as revenue transactions.

Included in the total net book value of tangible fixed assets is £1,068,252 (1990 £15,750) in respect of assets acquired under 'finance' leases. Depreciation for the year on these assets was £121,320 (1990 £5,250).

The North of England Zoological Society

Notes to the Accounts – continued

11. INVESTMENT IN SUBSIDIARY COMPANY

Chester Zoo Enterprises Limited

Registered in England and Wales – Class of shares held: Ordinary £1 shares.

This company was incorporated on 9 December 1991 and is a 100% owned subsidiary. It starts trading on 1 January 1992 and will operate the catering and retail activities of the zoo.

| | 1991 | | 1990 | |
|-------------------|------|----------------|------|----------------|
| | £ | £ | £ | £ |
| 12. STOCKS | | | | |
| Goods for resale* | | 199,740 | | 152,117 |
| Consumables | | 40,456 | | 46,891 |
| | | <u>240,196</u> | | <u>199,008</u> |

*Includes £48,620 (1990 £29,376) re stocks for which payment is being made in April 1992

13. DEBTORS

| | | | | |
|--------------------------------|--|---------------|--|---------------|
| Trade debtors | | 17,443 | | 12,140 |
| Other debtors | | 10,167 | | 19,450 |
| Prepayments and accrued income | | 27,665 | | 24,330 |
| | | <u>55,275</u> | | <u>55,920</u> |

14. TRUST FUND

| | | | | |
|--|---------------|----------------|---------------|----------------|
| Balance at 1.1.91 | | 103,584 | | 89,642 |
| Adoptions | 79,551 | | 62,255 | |
| Less: Transferred to animal foods | <u>79,551</u> | | <u>62,255</u> | |
| | | | | |
| Sponsorship | | 100 | | 1,400 |
| Donations and legacies etc. | | 11,222 | | 6,292 |
| Option payment received re possible land lease (note 19) | | 6,250 | | 6,250 |
| | | <u>121,156</u> | | <u>103,584</u> |

15. CREDITORS FALLING DUE AFTER MORE THAN ONE YEAR

| | | | | |
|--|--|---------|--|-------|
| Finance lease - net obligations due from two to five years | | 838,444 | | 1,165 |
|--|--|---------|--|-------|

16. SHARE CAPITAL

The Society is a Company limited by guarantee and has no share capital. Members have guaranteed the liabilities of the Society to the extent of £1 each.

17. STATUS

The Society is registered with the Charity Commission No. 306077.

18. CAPITAL COMMITMENTS

The estimated amounts of commitments for future capital expenditure are:-

| | 1991 | | 1990 | |
|---|------|----------------|------|------------------|
| | £ | £ | £ | £ |
| Under contracts | | 11,432 | | 1,379,663 |
| Authorised by the Council but not contracted | | 130,000 | | 125,000 |
| | | <u>141,432</u> | | <u>1,504,663</u> |
| There is an annual commitment in respect of operating leases which expire within two to five years of | | 5,966 | | 10,256 |

19. POSSIBLE FUTURE LEASE OF LAND

The Society entered into an agreement in October 1990 with Deva Roman Centre Limited, whereby about six acres of land owned by the Society, could be leased for park and ride purposes. A further £6,250 (Note 14) has been received as a second option payment in respect of this agreement which expires in 1995.

20. CONTINGENT LIABILITY

(a) As the Society is a registered Charity it has been considered that no tax Liability (other than VAT) arises on income. However, the Inland Revenue have indicated they consider that a liability may arise on certain of the catering and souvenir retailing activities.

(b) Under Section 4 of the Development of Tourism Act 1969 the Society has received a grant from the English Tourist Board of £39,893 towards the cost of building the new Chimpanzee House. Under certain circumstances this grant could become repayable.

The North of England Zoological Society

Notes to the Accounts – continued

| | 1991 | | 1990 | |
|--|--------|----------------|-------|---------------|
| | £ | £ | £ | £ |
| 5. OTHER INCOME | | | | |
| Zoo property rents | | 13,400 | | 14,190 |
| Zoo farm rents (net) | | 15,278 | | 16,637 |
| | | <u>28,678</u> | | <u>30,827</u> |
| 6. INTEREST RECEIVABLE | | | | |
| Bank deposit and money market interest | | 1,364 | | 4,700 |
| 7. INTEREST PAYABLE | | | | |
| Bank | | 98,314 | | 71,701 |
| Finance Leases – Monorail | 87,004 | | | |
| – Other | 1,398 | | 1,190 | |
| | | <u>88,402</u> | | <u>1,190</u> |
| Bank loan not wholly repayable within five years | | – | | 209 |
| | | <u>186,716</u> | | <u>73,100</u> |

8. DEFICIENCY ON ORDINARY ACTIVITIES

The (deficiency) on ordinary activities for 1991 has been adversely affected by the monorail system which, due to late completion, did not generate any revenue before 30 July and was only in partial service for most of the remainder of the year. In accordance with normal practice, depreciation for a full year of £146,155 has been charged before arriving at the deficiency of £188,140 of the Monorail.

| | 1991 |
|---|------------------|
| | £ |
| (Deficiency) on ordinary activities of the monorail | (188,140) |
| Less: Surplus on ordinary activities of the Zoo | 29,942 |
| Net (deficiency) on ordinary activities | <u>(158,198)</u> |

9. CAPITAL EXPENDITURE GRANTS

| | 1991 | 1990 |
|--|----------|----------|
| | £ | £ |
| Balance at 1.1.91 | – | – |
| Grants and donations received | 6,375 | 16,375 |
| Transfer to income and expenditure account | (6,375) | (16,375) |
| Balance at 31.12.91 | <u>–</u> | <u>–</u> |

10. TANGIBLE FIXED ASSETS

| | Freehold Property | Buildings & Enclosures | Monorail System | Machinery & Equipment | Animals | Total |
|-----------------------|-------------------|------------------------|------------------|-----------------------|----------------|--------------------|
| | £ | £ | £ | £ | £ | £ |
| COST | | | | | | |
| At 1.1.91 | 473,315 | 2,869,768 | 13,451 | 879,813 | 149,685 | 4,386,032 |
| Additions | 19,313 | 238,258 | 1,448,099 | 92,279 | (see below) | 1,797,949 |
| Disposals | – | – | – | (14,471) | – | (14,471) |
| At 31.12.91 | <u>492,628</u> | <u>3,108,026</u> | <u>1,461,550</u> | <u>957,621</u> | <u>149,685</u> | <u>£ 6,169,510</u> |
| DEPRECIATION | | | | | | |
| At 1.1.91 | – | 1,283,818 | – | 490,013 | 148,685 | 1,922,516 |
| Provided during year | – | 147,377 | 146,155 | 97,397 | – | 390,929 |
| Disposals | – | – | – | (11,290) | – | (11,290) |
| At 31.12.91 | <u>–</u> | <u>1,431,195</u> | <u>146,155</u> | <u>576,120</u> | <u>148,685</u> | <u>£ 2,302,155</u> |
| NET BOOK VALUE | | | | | | |
| At 31.12.91 | <u>492,628</u> | <u>1,676,831</u> | <u>1,315,395</u> | <u>381,501</u> | <u>1,000</u> | <u>£ 3,867,355</u> |
| At 31.12.90 | <u>473,315</u> | <u>1,585,950</u> | <u>13,451</u> | <u>389,800</u> | <u>1,000</u> | <u>£ 2,463,516</u> |

Animal purchases of £16,286 (1990 £38,265) and sales of £17,080 (1990 £15,441) have been treated as revenue transactions.

Included in the total net book value of tangible fixed assets is £1,068,252 (1990 £15,750) in respect of assets acquired under 'finance' leases. Depreciation for the year on these assets was £121,320 (1990 £5,250).

The North of England Zoological Society

Notes to the Accounts – continued

11. INVESTMENT IN SUBSIDIARY COMPANY

Chester Zoo Enterprises Limited

Registered in England and Wales – Class of shares held: Ordinary £1 shares.

This company was incorporated on 9 December 1991 and is a 100% owned subsidiary. It starts trading on 1 January 1992 and will operate the catering and retail activities of the zoo.

12. STOCKS

Goods for resale*
Consumables

| | 1991 | | 1990 | |
|--|------|----------------|------|----------------|
| | £ | £ | £ | £ |
| | | 199,740 | | 152,117 |
| | | 40,456 | | 46,891 |
| | £ | <u>240,196</u> | £ | <u>199,008</u> |

*Includes £48,620 (1990 £29,376) re stocks for which payment is being made in April 1992

13. DEBTORS

Trade debtors
Other debtors
Prepayments and accrued income

| | | | | |
|--|---|---------------|---|---------------|
| | | 17,443 | | 12,140 |
| | | 10,167 | | 19,450 |
| | | 27,665 | | 24,330 |
| | £ | <u>55,275</u> | £ | <u>55,920</u> |

14. TRUST FUND

Balance at 1.1.91
Adoptions
Less: Transferred to animal foods

Sponsorship
Donations and legacies etc.
Option payment received re possible land lease (note 19)

| | | | | |
|--|---------------|----------------|---------------|----------------|
| | | 103,584 | | 89,642 |
| | 79,551 | | 62,255 | |
| | <u>79,551</u> | | <u>62,255</u> | |
| | | - | | - |
| | | 100 | | 1,400 |
| | | 11,222 | | 6,292 |
| | | 6,250 | | 6,250 |
| | £ | <u>121,156</u> | £ | <u>103,584</u> |

Balance at 31.12.91

15. CREDITORS FALLING DUE AFTER MORE THAN ONE YEAR

Finance lease - net obligations due from two to five years

| | | | | |
|--|---|----------------|---|--------------|
| | £ | <u>838,444</u> | £ | <u>1,165</u> |
|--|---|----------------|---|--------------|

16. SHARE CAPITAL

The Society is a Company limited by guarantee and has no share capital. Members have guaranteed the liabilities of the Society to the extent of £1 each.

17. STATUS

The Society is registered with the Charity Commission No. 306077.

18. CAPITAL COMMITMENTS

The estimated amounts of commitments for future capital expenditure are:-
Under contracts
Authorised by the Council but not contracted

| | 1991 | | 1990 | |
|--|------|----------------|------|------------------|
| | £ | £ | £ | £ |
| | | 11,432 | | 1,379,663 |
| | | 130,000 | | 125,000 |
| | £ | <u>141,432</u> | £ | <u>1,504,663</u> |

There is an annual commitment in respect of operating leases which expire within two to five years of

| | | | | |
|--|---|--------------|---|---------------|
| | £ | <u>5,966</u> | £ | <u>10,256</u> |
|--|---|--------------|---|---------------|

19. POSSIBLE FUTURE LEASE OF LAND

The Society entered into an agreement in October 1990 with Deva Roman Centre Limited, whereby about six acres of land owned by the Society, could be leased for park and ride purposes. A further £6,250 (Note 14) has been received as a second option payment in respect of this agreement which expires in 1995.

20. CONTINGENT LIABILITY

(a) As the Society is a registered Charity it has been considered that no tax Liability (other than VAT) arises on income. However, the Inland Revenue have indicated they consider that a liability may arise on certain of the catering and souvenir retailing activities.

(b) Under Section 4 of the Development of Tourism Act 1969 the Society has received a grant from the English Tourist Board of £39,893 towards the cost of building the new Chimpanzee House. Under certain circumstances this grant could become repayable.

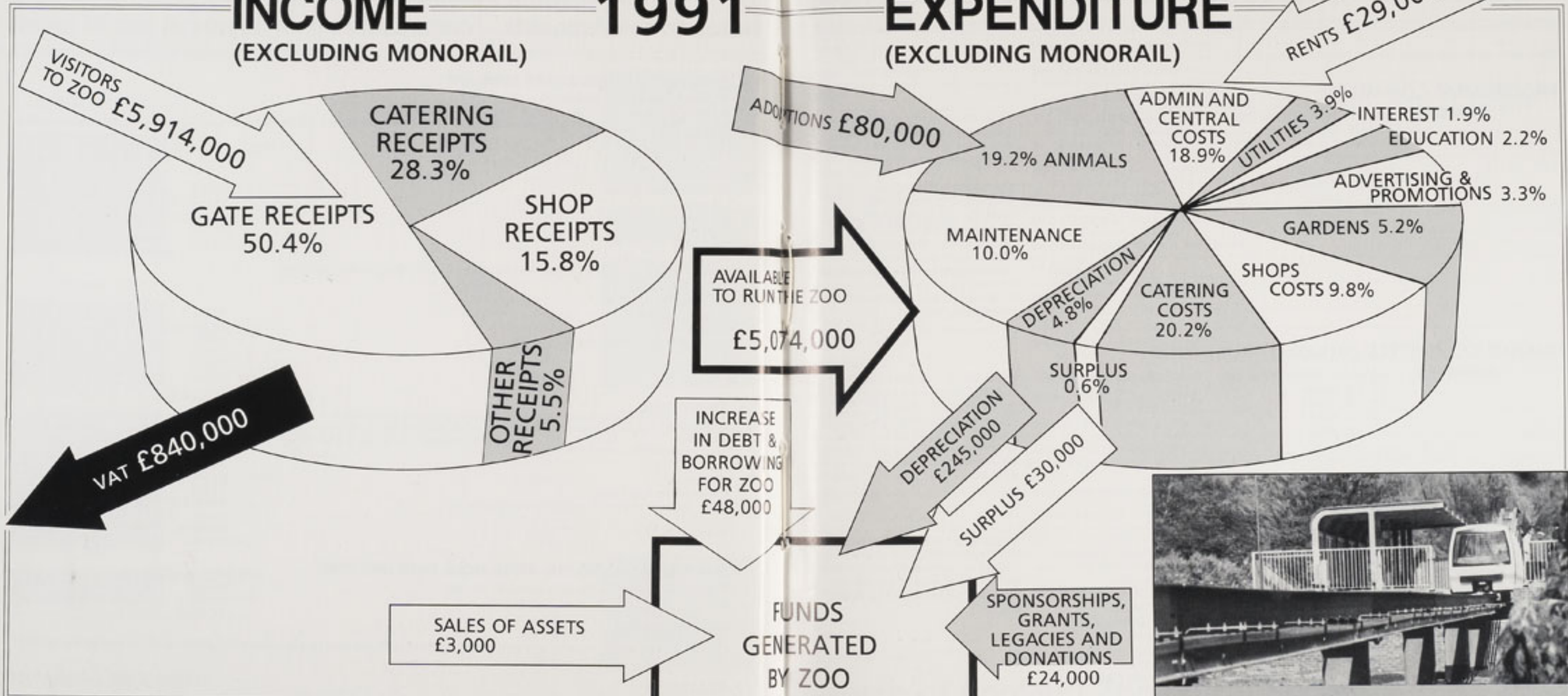
INCOME

(EXCLUDING MONORAIL)

1991

EXPENDITURE

(EXCLUDING MONORAIL)



MONORAIL SYSTEM 1991
(Not included in Zoo figures)

| | £ |
|---|-------------------|
| TICKET SALES (for part year only) | 74,000 |
| LESS: EXPENDITURE | |
| DEPRECIATION (for full year) | (146,000) |
| LEASE INTEREST (for full year) | (87,000) |
| LABOUR & SUNDRIES (for part year) | (29,000) |
| OPERATING (LOSS) | £(188,000) |
| | |
| PURCHASE COST OF MONORAIL | 1,448,000 |
| LESS: FINANCE BY LEASE | 1,174,000 |
| | (274,000) |
| INCREASE IN BORROWING FOR MONORAIL | £(462,000) |

| NUMBERS | ADULTS | CHILD/OAP |
|--|---------|-----------|
| NORMAL VISITORS | 519,709 | 233,573 |
| PARTY VISITORS (Non-Educational) | 18,529 | 25,162 |
| STUDENTS/SCHOOL CHILDREN AND ACCOMPANYING ADULTS ON EDUCATIONAL VISITS | 15,886 | 67,519 |
| [With Zoo teaching] | [877] | [4,745] |
| | 554,124 | 326,254 |
| | 880,378 | |



OUR LATEST CAR STICKER COMMEMORATES EMMA'S BIRTH

Council Committees & their Terms of Reference

There were some changes to Committees in the year.

PROGRAMME COMMITTEE

MEMBERS

Mr J.H. Howatt (Chairman)
Dr J.R. Baker
Miss J.P. Dixon
Mr A. Guy
Mrs B.J. Jones
Mrs E.M. Livingstone
Dr J.S. Madden
Mrs J. Straughan
Mr A.L.B. Thomson

Miss B.M. Norgain (Staff)
Mrs M.M.A. Allsopp
(Secretary)

To be responsible for setting a programme of meetings, talks, lectures and symposia for members and general public.

To concentrate on achieving an identifiable formula for NEZS meetings and to pursue the goal of achieving the status of NEZS as a forum for debate and discussion of appropriate conservational and biological issues.

To advise Council regarding membership policy.

FINANCE COMMITTEE (including TRUST FUND)

MEMBERS

Mr M.A.R. Johnson (Chairman)
Mr A.R. Barnes
Mr J.H. Howatt
Mrs B.J. Jones
Mr G.K. Jump

Dr M.R. Brambell (Director)
Mr E.A. Du Cros (Staff)
Mr A. Sykes (Staff)

Recommends financial policy to Council. This includes reviewing pricing policy, revenue and capital budgets, long term forecasts, long and short term borrowing and lending and the allocation of financial surpluses.

SCIENTIFIC COMMITTEE

MEMBERS

Dr D.A.P. Cooke (Chairman)
Dr J.R. Baker
Mr B.H. Coles
Mr D.B. Edwards
Dr J.S. Madden

STAFF

Dr M.R. Brambell (Director)
Mr K. Brown
Mr M. Crumpler
Mr D.C. Dinning
Mr N.G. Ellerton
Miss B.N. Norgain
Mr M. Pilgrim
Mr P.A. Wait
Dr R. Wilkinson
Mrs P.A. Rudd (Secretary)

To advise Council on the exhibition and conservation policy of the Society, to monitor animal husbandry and veterinary care of the animal collection, and to advise on Health and Safety.

CONSULTANTS

Dr J.E.D. Charles-Jones
Mr B. Livingstone
Mr D. Lyon
Prof. G. Nelson
Mr N. Walker

PENSION FUND

TRUSTEES

Dr M.R. Brambell (Chairman)
Mr E.A. Du Cros

Miss J.P. Dixon
Mrs B.J. Jones

ASSESSORS

Mr M.J. Fairclough

Mr S.J. Green

To manage the Pension Fund and authorise payments therefrom in accordance with the Pension Fund Trust Deed and the instructions of Council. To advise Council on matters concerning Pension policy.



Emma - the Black Rhinoceros - born in February 1991 - with her inseparable companion, Jessica, the Vietnamese Pot-Bellied Pig. Pig and Rhino have almost reversed their positions - for most of the year, Jessica was the larger - now, Emma is very much the larger of the two.

Picture by Cliff Brett, Liverpool Daily Post & Echo.

Consultants

| | |
|----------------------------------|--|
| Advertising Agency | Williams Barber & Bird, Liverpool. |
| Agricultural Advisor | Don Park, Esq., Shrewsbury. |
| Artist | G.L. Grandy, Esq., Heswall. |
| Auditors | Afford Bond, Nantwich. |
| Bankers | Barclays Bank plc., Chester. |
| Consultant Engineers | Giffords, Chester & Southampton. |
| Environmental Consultants | Caldicott Morgan, Mold. |
| Honorary Medical Advisor | Dr. J.E.D. Charles-Jones, Chester. |
| Insurance Advisors | Lowndes Lambert UK Ltd., Manchester. |
| Interpretation Consultant | C. Tudge, Esq., London. |
| Land Agents | Denton Clark & Co., Chester. |
| Legal Advisors: | |
| General Matters | Bremner, Sons & Corlett, Chester. |
| Employment Law & Contract Law | Mace & Jones, Liverpool. |
| Company Law | Walker, Smith & Way, Chester. |
| Market Research Consultants | John Ardern Associates, Manchester. |
| Monorail Suppliers | Thames Valley Lift Co., Flint. |
| Pension Fund: | |
| Actuaries | William M. Mercer Fraser Ltd., Liverpool. |
| Fund Managers | Fraser Green Ltd., London. |
| Planning Consultants | Cluttons, London. |
| Quantity Surveyors | Davis Langdon & Everest, Chester. |
| Veterinary Advisors | The Gatehouse Veterinary Hospital, Rossett. University of Liverpool Veterinary Field Station, Leahurst. |

North of England Zoological Society Report of Council for the year ended 31st December 1991

1. The principal activity of the Society is the running of the Zoological Gardens at Upton-by-Chester as a scientific and educational charity, supporting wildlife and the conservation of endangered species.
2. There was no significant change in the principal activity of the Society during the year.
3. The state of the Society's affairs at the date of the balance sheet was considered to be satisfactory.
4. Details of changes in the fixed assets are shown in note 10 to the accounts.
5. Members of the Council who have served during the year are listed on page 3.
6. Afford Bond have signified their willingness to be re-appointed auditors and a resolution to that effect will be proposed at the annual general meeting.

By order of the Council

M R Brambell Secretary

Staff as at 31st December 1991

ANIMAL DIVISION

Keeping Staff

Miss L. Baines
J.T. Bell
S.A. Blake
M. Boardman
G. Bouchier
A. Britt
D. Brunger
J. Buffery
M. Cleave
Miss K.E. Davies
Miss J. Dodd
A. Dunster
J. Frost
S. Gallivan
A.C. Gooch
R. Green
J. Hall
D.I. Haw
R. Hoffman
S. Hogarth
P. Howse
A.B. Hutchinson
P.M. Jones
D. Langford
C.G. Lavender
A. Lenihan
D.N. Manning
Miss J. McAdams
Miss I.A. McGeorge
C.J. McKenzie
W.D. McLeod
R. Meredith
R. Merry
P.I. Morris
N.W. Ormerod
R. Packwood
Miss R. Parker
Miss B. Ramsay
M. Roberts
T.L. Rowlands
B.L. Rowley
P.D. Rowley
Miss S. Simpson
V. Smith
N. Spooner
Miss R. Webb
B. West
P. Whalley
S.R. Williams
J.A. Willis
A.R. Woodward
A. Woolham

Aquarist

M.C. Crumpler

Herpetologist

K.W. Brown

Animal Supplies

K.J. Newey
S. Sadler
T. Topping

Animal Supplies Officer

J.A.C. Forrest

Zoological Information Officer

M.F. Coupe

Avicultural Deputy

M. Pilgrim

Curator of Birds

Dr. R. Wilkinson

Curator of Mammals

N.G. Ellerton

Laboratory Technician & Safety Officer

D.C. Dinning

Curator-in-Chief & Head of Division

(wef 1 January 1992)
Dr G. McG Reid

EDUCATION

G. Bellis
Miss L. Davenport
Mrs. P. Mitchell
M. Powleson
Mrs. S. Ruks
Mrs. B.J. Van Suchtelen
Miss V. J. Wilson

Senior Education Officer & Head of Division

Miss B.M. Norgain

ESTATES

Maintenance

R. Bailey
I. Blythe
C.J. Bridges
D.C. Holder
D. Kinsella
A. Lennon
E.P. Lindop
B. McCone
R. Morrison
J.E. Parry
G.E. Scott
L.L. Shepherd
J. Spencer
D.A. Toms

Maintenance Foreman

P. Brady

Groundstaff

A. Castrachino
K.J. Coriam
Mrs. C. Cowley
S. Gilyeat
R. Head
Mrs. F.M. Hughes
M. Hughes
P. T. Hutchins
C. Jones
N. Morris
P. Powell
J. Whitby
C. Yarwood

Head Groundsman

P. Hughes

Monorail

T. Batty
D. McKenna
P. Quayle
C. Weaver

Gardens

C.P. Braithwaite
V. Dodd
K.N. Done
R. Duncan
M. Hargreaves
P. Harrison
G. Hewitt
D.R. Jones
A. Millington
R.A. Newey
S.H. Newey
R. Prandle
C. Pritchard
J.E. Richardson
I.F. Roberts
A. Rose
W.N. Wallace
J.D. Wood
N.P. Wood

Foreman Gardener

C. Williams

Deputy Head Gardener

J.G. Johnson

Head Gardener

E.J. Rudman

Project Engineers

F.S. Carson
K. Roberts

Estate Engineer & Head of Division

S. O'Brien

FINANCE & ADMINISTRATION

General

Mrs. D. Coriam
M. Fallon
J. Green
Mrs. E.C. Manning
J. O'Reardon
J.A. Smith
Mrs. S. Williams

Accounts Supervisor

Miss C. Campion

Accounts & Cashiers

Mrs. S. Davies
Mrs. W. Davies
Mrs. C. M. Evans
Mrs. D. Farnell
Miss K. Hodson
Mrs. J. Jones
Mrs. L. Richardson
Mrs. J. Selby-Hughes
D.C. Thompson

Stores Manager

P.J. Thompson

Assistant Security Officer

T.E. Lawley

Security Officer

T.A. Johnson

Secretarial

Miss P.A. McKee
Miss H. Smith
Mrs. J. Whitear

Senior Secretary & Personnel Officer

Mrs. P.A. Rudd

Librarian

Mrs. L. Wilkinson

Director's Secretary

Miss J.D. Lunsford

Deputy Financial Controller

A.R. Sykes

Financial Controller & Deputy Director

E.A. Du Cros

Director of Chester Zoo

Dr M.R. Brambell

MARKETING

Catering

Mrs. E. Fenlon
Mrs. G. Foden
Miss W. Gibson
Mrs. S. Groom
Mrs. P. Keay
M. Leary
Mrs. D. Lenihan
Miss A. Livesley
I. Patten
Miss D. Parr
Mrs. B. Smith
Miss J. Williams

Oakfield & Functions Manager

R. Casson

Assistant Catering Manager

B.G. Lloyd

Catering Manager

Mrs. S. Clews

Retail Sales

Mrs. B. Jones
Miss W. Locker
Miss G. Robinson
Miss A. Taylor

Assistant Retail Sales Manager

Mrs. S. Stanton

Retail Sales Manager

A. Jones

Party Office

Mrs. L. Bell
Mrs. D. Cooke
Miss L. Raynor

Membership & Adoptions

Mrs. M.M.A. Allsopp
Miss H. Burgess

Public Relations Officer

Mrs. P. Cade

Marketing

C.M.N. Vere

RETIRED 1991

E. Hughes - Groundstaff
(4 years' service)
Mrs. D. Stringer - Groundstaff
(3 years' service)
P.A. Wait - Senior Curator &
Head of Animal Division
(23 years' service)
F. Woodworth - Groundstaff
(8 years' service)

Staff Association 1991 Committee

Groundstaff

P. Powell

Mammals

A. Lenihan

Birds

R. Merry

Catering

Mrs. B. Smith

Maintenance

B. McCone

Education & Administration

M. Powleson

Vice Chairman & Gardens

J.E. Richardson

Chairman

C.J. McKenzie

Stock as at 31st December 1991

| | Number of of Species | Number of of Specimens | Species Breeding & Rearing | Specimens Bred & Reared |
|---------------|----------------------------|------------------------------|----------------------------------|-------------------------------|
| Mammals | 81 | 732 | 36 | 154 |
| Birds | 191 | 867 | 73 | 321 |
| Reptiles | 58 | 360 | 12 | 176 |
| Amphibians | 16 | 125 | 4 | 156 |
| Fish | 136 | 2116 | 28 | * |
| Invertebrates | 30 | 635 | 4 | * |
| TOTALS | 512 | 4835 | 157 | 807 |

* Not Included

Animal Food Supplies – 1991

Altogether, more than 795 tons of food were supplied to the animals, most of this is from external sources (e.g. crickets), but some is zoo-produced (ca 414,000 units or 20% of the total).

Over 90 metric tonnes of fruit were used, including: apple (45 tonnes); banana (30 tonnes); pear (8.3 tonnes); grape (3.6 tonnes); orange (7.7 tonnes or 51,000 units) and smaller amounts of kiwi, peach, coconut, pineapple, plum, melon and other fruits. Vegetables totalled over 100 tonnes, including: carrot (83 tonnes); potato (12 tonnes); tomato (3 tonnes); lettuce (31,750 units) and smaller amounts of leek, garden pea, parsnip, celery, sugar beet and swede.

Cereal supplies (for consumption and bedding) were over 445 tonnes, including: hay (253 tonnes); straw (90.7 tonnes); lucerne (50 tonnes) and bread (8,400 loaves).

Fleshy foods amounted to over 42 tonnes, including: meat (28 tonnes); herring (10 tonnes) and sprat (4 tonnes). Other fresh and frozen supplies total just under one half million units.

Over 10,900 litres (ca 2,400 gal or 11 tonnes) of milk were supplied.

Special diets (e.g. rhino milk, parrot mix, deer diet, coarse mix, flamingo diet) amounted to 173 tonnes (or about 22% of all diets).

Lastly, vitamin and mineral supplements constitute a relatively small cost (£1000) but are a critical dietary component.

J.A.C. Forrest
Animal Supplies officer



Typical daily diet for Orang utan.

Animal Collection

In the following pages the animals are listed as follows:-

COLUMN 1 shows stock at the start of the year. (This normally agrees with the stock listed at the close of the year in the 1990 Annual Report, but in a few instances resexing and the detection of earlier minor errors have resulted in corrections being made).

COLUMN 2 shows the stock which came into the collection from outside sources.

COLUMN 3 shows the additional stock resulting from breeding.

COLUMN 4 shows stock bred in the Zoo which failed to survive more than 30 days. Although columns 3 and 4 are appropriate means to recording the breeding performance of many species, they are inappropriate for species which produce large numbers of microscopic young, most of which are

unlikely to survive until they are of countable size. In these species, column 4 is ignored and only surviving countable young are included in column 3.

COLUMN 5 shows animals which died or were destroyed for reasons of ill-health while in the collection.

COLUMN 6 shows animals which were removed from the collection, except for reasons of ill-health.

COLUMN 7 shows the closing stock still in the collection at the end of the year.

The seven column accounting system of animal stocks is in line with all other major zoological institutions in the world.

Within each column known male animals are listed under heading-M, female animals are listed under-F, unsexed animals and young stock are listed under heading-Y/?

MAMMALS

| STOCK 1/1/1991 | RECEIVED | | | BORN/H'CH | | | D.N.S. 30 DAYS | | | DEATHS OTHERS | | | DISPOSALS | | | STOCK 31/12/91 | | |
|-------------------|----------|---|-----|-----------|---|-----|-------------------|---|-----|------------------|---|-----|-----------|---|-----|-------------------|---|-----|
| | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? |

MONOTREMATA

| | | | | | | | | | | | | | | | | | | |
|--------------------|-------------------------------|---|---|---|--|--|--|--|--|--|--|--|--|--|--|---|---|---|
| Australian Echidna | <i>Tachyglossus aculeatus</i> | 1 | 0 | 0 | | | | | | | | | | | | 1 | 0 | 0 |
|--------------------|-------------------------------|---|---|---|--|--|--|--|--|--|--|--|--|--|--|---|---|---|

MARSUPIALIA

| | | | | | | | | | | | | | | | | | | |
|-----------------------|-----------------------------|---|----|---|--|---|---|---|--|---|---|---|---|--|--|---|----|---|
| Tammar Wallaby | <i>Macropus eugenii</i> | 1 | 3 | 0 | | | | | | | 0 | 2 | 0 | | | 1 | 1 | 0 |
| Red-necked Wallaby | <i>Macropus rufogriseus</i> | 7 | 15 | 0 | | 0 | 4 | 7 | | | 0 | 3 | 6 | | | 7 | 16 | 1 |
| Western Grey Kangaroo | <i>Macropus fuliginosus</i> | 1 | 3 | 0 | | 1 | 0 | 0 | | 0 | 1 | 0 | 0 | | | 1 | 3 | 0 |

SCANDENTIA

| | | | | | | | | | | | | | | | | | | |
|-------------------|--------------------|---|---|---|--|--|--|--|--|--|---|---|---|--|--|---|---|---|
| Common Tree Shrew | <i>Tupaia glis</i> | 1 | 1 | 0 | | | | | | | 1 | 0 | 0 | | | 0 | 1 | 0 |
|-------------------|--------------------|---|---|---|--|--|--|--|--|--|---|---|---|--|--|---|---|---|

CHIROPTERA

| | | | | | | | | | | | | | | | | | | | | |
|---------------------|-----------------------------|----|----|---|--|---|---|---|--|---|---|---|--|---|---|---|--|----|----|---|
| Rodrigues Fruit Bat | <i>Pteropus rodricensis</i> | 14 | 21 | 0 | | 7 | 5 | 2 | | 4 | 0 | 2 | | 1 | 1 | 0 | | 16 | 25 | 0 |
|---------------------|-----------------------------|----|----|---|--|---|---|---|--|---|---|---|--|---|---|---|--|----|----|---|

PRIMATES

| | | | | | | | | | | | | | | | | | | | |
|----------------------------|------------------------------------|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|---|
| Slow Loris | <i>Nycticebus coucang</i> | 2 | 2 | 0 | | | | | | | | | | | | 2 | 2 | 0 | |
| Ring-tailed Lemur | <i>Lemur catta</i> | 18 | 16 | 0 | | 2 | 6 | 4 | | 0 | 0 | 4 | | 0 | 1 | 0 | 2 | 4 | 0 |
| White Fronted Lemur | <i>Lemur fulvous albifrons</i> | 2 | 4 | 0 | | 0 | 2 | 0 | | | | | | 1 | 1 | 0 | 1 | 5 | 0 |
| Black & white Ruffed Lemur | <i>Varecia variegata variegata</i> | 2 | 2 | 0 | | 1 | 0 | 0 | | 1 | 0 | 0 | | | | 2 | 2 | 0 | |
| Red Ruffed Lemur | <i>Varecia variegata rubra</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | 1 | 1 | 0 | |
| Lesser Bushbaby | <i>Galago senegalensis</i> | 1 | 1 | 0 | | | | | | | | | | | | 1 | 1 | 0 | |
| Pygmy Marmoset | <i>Callithrix pygmaea</i> | 1 | 1 | 1 | | 1 | 0 | 1 | | 1 | 0 | 0 | | | | 1 | 1 | 2 | |
| Common Marmoset | <i>Callithrix jacchus</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | 1 | 1 | 0 | |
| Cotton Top Tamarin | <i>Saguinus oedipus</i> | 1 | 3 | 0 | 6 | 7 | 0 | | | | | | | | | 6 | 7 | 0 | |
| White-lipped Tamarin | <i>Saguinus labiatus</i> | 4 | 3 | 0 | | | | | 3 | 0 | 1 | | 1 | 0 | 0 | 0 | 3 | 0 | |
| Douroucoulis | <i>Aotus trivirgatus</i> | 1 | 1 | 0 | | | | | | | | | | | | 6 | 3 | 1 | |
| White-fronted Capuchin | <i>Cebus albifrons</i> | 2 | 1 | 0 | | | | | 0 | 0 | 1 | | | | | 1 | 1 | 0 | |
| Black face Spider Monkey | <i>Ateles fusciceps robustus</i> | 2 | 5 | 0 | | | | | 1 | 0 | 0 | | | | | 2 | 1 | 1 | |
| Lion-tailed Macaque | <i>Macaca silenus</i> | 5 | 2 | 0 | 1 | 0 | 0 | | | | | | | | | 5 | 2 | 0 | |
| Celebes Macaque | <i>Macaca niger</i> | 3 | 5 | 0 | 1 | 0 | 0 | | 0 | 1 | 0 | | 0 | 1 | 0 | 1 | 0 | 0 | |
| De Brazza Monkey | <i>Cercopithecus neglectus</i> | 3 | 4 | 0 | | | | | | | | | | | | 3 | 4 | 0 | |
| Talapoin Monkey | <i>Miopithecus talapoin</i> | 4 | 4 | 0 | 2 | 1 | 0 | | 2 | 0 | 0 | | 1 | 0 | 0 | 0 | 2 | 0 | |
| Patas Monkey | <i>Erythrocebus patas</i> | 4 | 2 | 0 | | | | | 0 | 1 | 0 | | | | | 4 | 3 | 0 | |
| Chimpanzee | <i>Pan troglodytes</i> | 6 | 17 | 0 | | | | | 0 | 2 | 0 | | | | | 4 | 3 | 0 | |
| Bornean Orang utan | <i>Pongo pygmaeus pygmaeus</i> | 2 | 4 | 0 | | | | | | | | | | | | 6 | 18 | 0 | |
| Sumatran Orang utan | <i>Pongo pygmaeus abelii</i> | 1 | 3 | 0 | | | | | | | | | | | | 2 | 4 | 0 | |

RODENTIA

| | | | | | | | | | | | | | | | | | | |
|---------------------------|----------------------------------|----|----|-----|--|--|--|--|---|---|----|--|---|---|---|---|---|-----|
| Prairie Marmot | <i>Cynomys ludovicianus</i> | 0 | 0 | 123 | | | | | 0 | 0 | 32 | | | | | 0 | 0 | 115 |
| African Crested Porcupine | <i>Hystrix cristata</i> | 4 | 10 | 1 | | | | | | | | | | | | 3 | 8 | 1 |
| Capybara | <i>Hydrochoerus hydrochaeris</i> | 6 | 7 | 0 | | | | | 1 | 0 | 4 | | 0 | 0 | 3 | 2 | 1 | 0 |
| Paca | <i>Cuniculus paca</i> | 2 | 0 | 0 | | | | | | | | | | | | 1 | 0 | 0 |
| Golden Agouti | <i>Punctata punctata</i> | 0 | 1 | 0 | | | | | | | | | | | | 2 | 0 | 0 |
| Coypu | <i>Myocastor coypus</i> | 14 | 11 | 0 | | | | | 4 | 2 | 4 | | 1 | 1 | 4 | 0 | 1 | 0 |
| Mountain Viscacha | <i>Lagidium viscaccia</i> | 1 | 0 | 0 | | | | | | | | | | | | 2 | 5 | 0 |

CARNIVORA

| | | | | | | | | | | | | | | | | | | |
|-------------------------|-----------------------------|---|----|---|---|---|---|---|---|---|---|--|--|--|---|---|---|---|
| Bat-eared Fox | <i>Otocyon megalotis</i> | 1 | 2 | 0 | | | | | | | | | | | | 1 | 2 | 0 |
| Brown Bear | <i>Ursus arctos</i> | 1 | 1 | 0 | | | | | | | | | | | | 1 | 1 | 0 |
| Polar Bear | <i>Thalarctos maritimus</i> | 0 | 1 | 0 | | | | | | | | | | | | 0 | 1 | 0 |
| Common Raccoon | <i>Procyon lotor</i> | 1 | 1 | 0 | | | | | | | | | | | | 1 | 1 | 0 |
| Coati | <i>Nasua nasua</i> | 3 | 12 | 0 | 1 | 0 | 0 | | | | | | | | 0 | 2 | 0 | |
| Kinkajou | <i>Potos flavus</i> | 1 | 2 | 0 | | | | | | | | | | | | 2 | 1 | 0 |
| Small-clawed Otter | <i>Aonyx cinerea</i> | 1 | 1 | 0 | | | | | | | | | | | | 1 | 2 | 0 |
| African Banded Mongoose | <i>Mungos mungo</i> | 1 | 1 | 0 | | | | | | | | | | | | 0 | 1 | 0 |
| Dwarf Mongoose | <i>Helogale undulata</i> | 6 | 5 | 0 | | | | | | | | | | | | 1 | 2 | 0 |
| Meerkat | <i>Suricata suricatta</i> | 1 | 2 | 4 | | | | | | | | | | | | 6 | 5 | 0 |
| Margay | <i>Felis wiedi</i> | 1 | 2 | 0 | | | | | | | | | | | | 1 | 2 | 4 |
| Jungle Cat | <i>Felis chaus</i> | 2 | 1 | 0 | | | | | | | | | | | | 1 | 2 | 0 |
| Scottish Wildcat | <i>Felis sylvestris</i> | 0 | 2 | 0 | 1 | 0 | 0 | | | | | | | | | 2 | 1 | 0 |
| Black Footed Cat | <i>Felis nigripes</i> | 2 | 2 | 0 | 1 | 0 | 0 | | 0 | 1 | 0 | | | | | 0 | 1 | 0 |
| Ocelot | <i>Felis pardalis</i> | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | | | | | 2 | 0 | 0 |
| Caracal | <i>Felis caracal</i> | 1 | 2 | 0 | | | | | | | | | | | | 1 | 2 | 0 |
| European Lynx | <i>Felis lynx</i> | 1 | 1 | 0 | | | | | | | | | | | | 1 | 2 | 0 |

Young Tapir Cuzco with mother Joy.



Wildebeest with their young on the paddock.



| STOCK 1/1/1991 | | | RECEIVED | | | BORN/H'CH | | | D.N.S. 30 DAYS | | | DEATHS OTHERS | | | DISPOSALS | | | STOCK 31/12/91 | | |
|-------------------|---|-----|----------|---|-----|-----------|---|-----|-------------------|---|-----|------------------|---|-----|-----------|---|-----|-------------------|---|-----|
| M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? |

CARNIVORA (continued)

| | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|----------------------------------|---|---|---|--|--|--|--|--|--|--|---|---|---|--|--|---|---|---|---|---|---|
| Serval | <i>Felis serval</i> | 2 | 4 | 0 | | | | | | | | | | | | | 1 | 0 | 0 | 1 | 4 | 0 |
| Geoffroy's Cat | <i>Felis geoffroyi</i> | 4 | 5 | 0 | | | | | | | | | | | | | 2 | 1 | 0 | 2 | 4 | 0 |
| Jaguarundi | <i>Felis yagouarundi</i> | 1 | 1 | 0 | | | | | | | | 0 | 1 | 0 | | | | | 1 | 0 | 0 | |
| Puma | <i>Felis concolor</i> | 0 | 1 | 0 | | | | | | | | 0 | 1 | 0 | | | | | 0 | 0 | 0 | |
| African Lion | <i>Panthera leo</i> | 1 | 3 | 0 | | | | | | | | | | | | | | | 1 | 3 | 0 | |
| Siberian Tiger | <i>Panthera tigris altaica</i> | 2 | 2 | 0 | | | | | | | | | | | | | | | 2 | 2 | 0 | |
| Black Leopard | <i>Panthera pardus pardus</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Persian Leopard | <i>Panthera pardus saxicolor</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Cheetah | <i>Acinonyx jubatus</i> | 2 | 3 | 0 | | | | | | | | | | | | | | | 2 | 3 | 0 | |

PINNIPEDIA

| | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|-------------------------------|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|---|
| Californian Sealion | <i>Zalophus californianus</i> | 1 | 4 | 0 | | | | | | | | | | | | | | | | | 1 | 4 | 0 |
|---------------------|-------------------------------|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|---|

PROBOSCIDEA

| | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|------------------------|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|---|---|---|---|---|---|
| Indian Elephant | <i>Elephas maximus</i> | 2 | 5 | 0 | 0 | 1 | 0 | | | | | | | | | | 0 | 1 | 0 | 2 | 5 | 0 |
|-----------------|------------------------|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|---|---|---|---|---|---|

PERISSODACTYLA

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|
| Przewalski's Horse | <i>Equus przewalskii</i> | 1 | 4 | 0 | | | | 1 | 1 | 0 | | | | | | | | | | | 2 | 5 | 0 |
| Common Zebra | <i>Equus burchelli boehmi</i> | 1 | 5 | 0 | | | | 1 | 2 | 0 | | | | 0 | 1 | 0 | | | | | 2 | 6 | 0 |
| Persian Onager | <i>Equus hemionus onager</i> | 2 | 4 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | | | | 1 | 0 | 0 | | 3 | 5 | 0 |
| Brazilian Tapir | <i>Tapirus terrestris</i> | 1 | 1 | 0 | | | | 1 | 0 | 0 | | | | | | | | | | | 2 | 1 | 0 |
| Black Rhinoceros | <i>Diceros bicornis</i> | 1 | 1 | 0 | | | | 0 | 1 | 0 | | | | | | | | | | | 1 | 2 | 0 |
| Indian Rhinoceros | <i>Rhinoceros unicornis</i> | 1 | 0 | 0 | | | | | | | | | | | | | | | | | 1 | 0 | 0 |

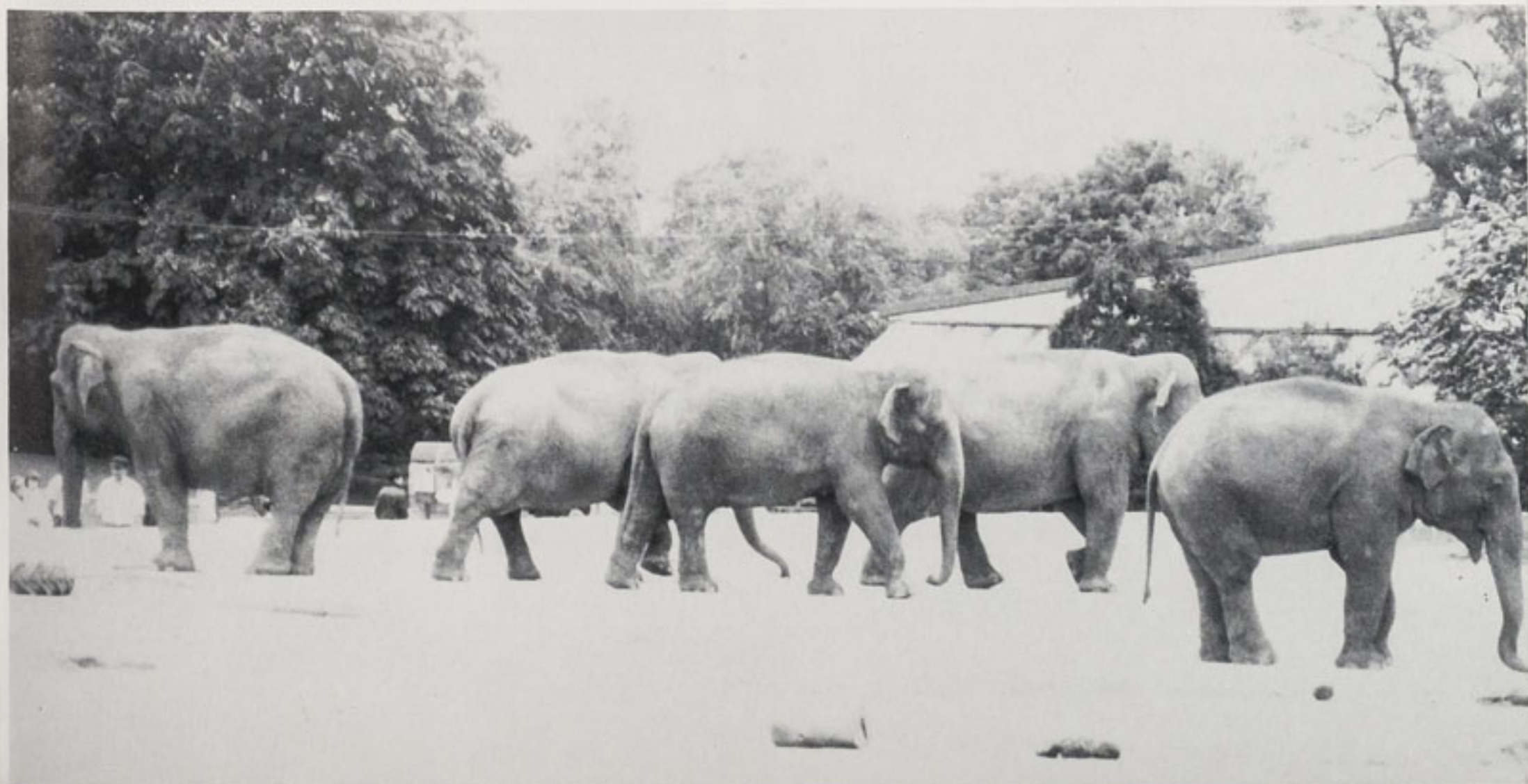
ARTIODACTYLA

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|--------------------------------|---|----|---|---|---|---|----|----|---|---|---|---|---|---|---|---|----|---|---|---|----|----|---|
| Collared Peccary | <i>Tayassu tajacu</i> | 2 | 3 | 0 | | | | | | | | | | 1 | 0 | 0 | | | | | 1 | 3 | 0 | |
| Common Hippopotamus | <i>Hippopotamus amphibius</i> | 1 | 1 | 0 | | | | | | | | | | 1 | 1 | 0 | | | | | 0 | 0 | 0 | |
| Guanaco | <i>Lama guanicoe</i> | 5 | 13 | 0 | 1 | 0 | 0 | 2 | 6 | 0 | 1 | 0 | 0 | | | | 6 | 10 | 0 | | 1 | 9 | 0 | |
| Bactrian Camel | <i>Camelus bactrianus</i> | 1 | 2 | 0 | | | | 1 | 1 | 0 | | | | 1 | 0 | 0 | | | | | 1 | 3 | 0 | |
| Chilean Pudu | <i>Pudu pudu</i> | 0 | 0 | 0 | 2 | 1 | 0 | | | | | | | 0 | 1 | 0 | | | 1 | 0 | 0 | 1 | 0 | 0 |
| Axis Deer | <i>Cervus axis</i> | 4 | 6 | 0 | | | | 2 | 1 | 0 | | | | 1 | 0 | 0 | | | 2 | 0 | 0 | 3 | 7 | 0 |
| Wapiti | <i>Cervus canadensis</i> | 1 | 5 | 0 | | | | 1 | 0 | 0 | | | | 0 | 1 | 0 | | | | | 2 | 4 | 0 | |
| Fire David's Deer | <i>Elaphurus davidianus</i> | 2 | 7 | 0 | | | | 1 | 3 | 0 | | | | 0 | 1 | 0 | | | 1 | 0 | 0 | 2 | 9 | 0 |
| Randdeer | <i>Rangifer tarandus</i> | 2 | 13 | 0 | | | | 1 | 4 | 0 | | | | 1 | 3 | 0 | | | 0 | 3 | 0 | 2 | 11 | 0 |
| Chinese Water Deer | <i>Hydropotes inermis</i> | 1 | 0 | 0 | | | | | | | | | | | | | | | | | 1 | 0 | 0 | |
| Giraffe | <i>Giraffa camelopardalis</i> | 2 | 2 | 0 | | | | | | | | | | 0 | 1 | 0 | | | | | 2 | 1 | 0 | |
| Eland | <i>Taurotragus oryx</i> | 3 | 8 | 0 | | | | 2 | 1 | 0 | 2 | 1 | 0 | | | | 2 | 1 | 0 | | 1 | 7 | 0 | |
| Kudu | <i>Boselaphus tragocamelus</i> | 2 | 14 | 0 | | | | 4 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 0 | | | | | 2 | 13 | 0 | |
| Somitar Horned Oryx | <i>Oryx dammah</i> | 3 | 8 | 0 | 0 | 2 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | | | | | 5 | 10 | 0 | |
| Red Lechwe | <i>Kobus leche</i> | 7 | 30 | 0 | | | | 9 | 7 | 0 | | | | 3 | 0 | 0 | | | 5 | 1 | 0 | 8 | 36 | 0 |
| Roan Antelope | <i>Hippotragus equinus</i> | 1 | 2 | 0 | | | | | | | | | | | | | | | | | 1 | 7 | 0 | |
| Wildebeeste | <i>Connochaetes taurinus</i> | 1 | 4 | 0 | | | | 2 | 2 | 0 | | | | 1 | 0 | 0 | | | | | 2 | 6 | 0 | |
| Blackbuck | <i>Antelope cervicapra</i> | 3 | 16 | 0 | | | | 10 | 12 | 0 | 6 | 4 | 0 | 1 | 5 | 0 | | | 5 | 0 | 0 | 1 | 19 | 0 |
| Arabian Gazelle | <i>Gazella gazella arabica</i> | 4 | 6 | 0 | | | | 4 | 3 | 0 | | | | 4 | 0 | 0 | | | | | 4 | 9 | 0 | |
| Ankole Cattle (domestic) | <i>Bos taurus</i> | 2 | 5 | 0 | | | | 1 | 1 | 0 | 0 | 1 | 0 | | | | | | | | 3 | 5 | 0 | |
| American Bison | <i>Bison bison</i> | 5 | 10 | 0 | | | | 2 | 3 | 0 | | | | | | | | | 3 | 7 | 0 | 4 | 6 | 0 |
| Congo Buffalo | <i>Syncerus caffer nanus</i> | 1 | 4 | 0 | | | | 0 | 1 | 0 | | | | | | | | | | | 1 | 5 | 0 | |

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|----|----|---|-----|----|----|----|----|----|-----|----|----|----|----|---|-----|-----|-----|
| 217 | 396 | 129 | 20 | 15 | 0 | 72 | 79 | 57 | 25 | 15 | 14 | 23 | 42 | 46 | 49 | 38 | 1 | 212 | 395 | 125 |
| 742 | | | 35 | | | 208 | | | 54 | | | 111 | | | 88 | | | 732 | | |

Number of specimens 732, Number of species 81.

Five members of the Elephant herd fill their enclosure.



BIRDS

| | | STOCK 1/1/1991 | | | RECEIVED | | | BORN/H'CH | | | D.N.S. 30 DAYS | | | DEATHS OTHERS | | | DISPOSALS | | | STOCK 31/12/91 | | | |
|------------------------------|---------------------------------------|-------------------|----|-----|----------|---|-----|-----------|---|-----|-------------------|---|-----|------------------|---|-----|-----------|---|-----|-------------------|----|-----|---|
| | | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | |
| STRUTHIONIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Ostrich | <i>Struthio camelus</i> | 1 | 1 | 0 | 0 | 1 | 0 | | | | | | | | | 0 | 1 | 0 | 1 | 1 | 0 | | |
| RHEIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Common Rhea | <i>Rhea americana</i> | 1 | 2 | 0 | | | | | | | | | | | | | | | | 1 | 2 | 0 | |
| CASUARIIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Emu | <i>Dromaius novaehollandiae</i> | 1 | 1 | 0 | | | | 0 | 0 | 2 | | | | | | 0 | 0 | 2 | 1 | 1 | 0 | | |
| TINAMIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Chilean Tinamou | <i>Nothoprocta perdicaria</i> | 0 | 0 | 9 | 0 | 0 | 4 | 0 | 0 | 1 | | | | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 11 | |
| SPHENISCIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Humboldt's Penguin | <i>Spheniscus humboldti</i> | 10 | 8 | 10 | 0 | 0 | 4 | 0 | 0 | 8 | 0 | 0 | 1 | 1 | 0 | 1 | | | | 9 | 8 | 20 | |
| CICONIIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| White Stork | <i>Ciconia ciconia</i> | 2 | 2 | 0 | | | | 0 | 0 | 5 | 0 | 0 | -1 | | | | 0 | 0 | 3 | 2 | 2 | 1 | |
| Waldrapp Ibis | <i>Geronticus eremita</i> | 9 | 8 | 7 | | | | 0 | 0 | 7 | 0 | 0 | 5 | 1 | 0 | 2 | | 0 | 0 | 3 | 8 | 8 | 4 |
| Chilean Flamingo | <i>Phoenicopterus chilensis</i> | 13 | 14 | 1 | | | | 0 | 0 | 5 | 0 | 0 | 2 | 1 | 1 | 0 | | | | 12 | 13 | 4 | |
| Caribbean Flamingo | <i>Phoenicopterus ruber ruber</i> | 16 | 12 | 13 | | | | | | | | | | 0 | 0 | 1 | | | | 16 | 12 | 12 | |
| Caribbean x Chilean Flamingo | <i>P.r. ruber x P. chilensis</i> | 0 | 1 | 0 | | | | | | | | | | | | | | | | 0 | 1 | 0 | |
| ANSERIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| White-faced Whistling Duck | <i>Dendrocygna viduata</i> | 3 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | | | | 5 | 3 | 0 | |
| Fulvous Tree Duck | <i>Dendrocygna bicolor</i> | 3 | 3 | 0 | | | | | | | | | | | | | | | | 3 | 3 | 0 | |
| Black-necked Swan | <i>Cygnus melanocoryphus</i> | 1 | 1 | 0 | | | | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | |
| Lesser Snow Goose | <i>Anser caerulescens</i> | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | |
| Emperor Goose | <i>Anser canagicus</i> | 3 | 3 | 0 | | | | 0 | 0 | 4 | | | | 0 | 0 | 1 | 1 | 0 | 3 | 2 | 3 | 0 | |
| Lesser White-fronted Goose | <i>Anser erythropus</i> | 2 | 2 | 0 | | | | | | | | | | | | | | | | | | | |
| Ross's Snow Goose | <i>Anser rossii</i> | 1 | 0 | 0 | 0 | 1 | 0 | | | | | | | 1 | 0 | 0 | | | | 1 | 2 | 0 | |
| Red-breasted Goose | <i>Branta ruficollis</i> | 4 | 4 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 5 | 5 | 0 | |
| Hawaiian Goose | <i>Branta sandvicensis</i> | 3 | 3 | 0 | | | | 0 | 0 | 5 | | | | 0 | 2 | 0 | 0 | 0 | 5 | 3 | 1 | 0 | |
| Cereopsis Goose | <i>Cereopsis novaehollandiae</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 | 0 | |
| Ruddy-headed Goose | <i>Chloephaga rubidiceps</i> | 1 | 1 | 0 | | | | 0 | 0 | 4 | | | | | | | 0 | 0 | 4 | 1 | 1 | 0 | |
| Common Shelduck | <i>Tadorna tadorna</i> | 2 | 2 | 0 | | | | 0 | 0 | 13 | 0 | 0 | 1 | | | | 0 | 0 | 8 | 2 | 2 | 4 | |
| Chestnut Teal | <i>Anas castanea</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Baikal Teal | <i>Anas formosa</i> | 2 | 2 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | 2 | 2 | 0 | |
| Falcated Teal | <i>Anas falcata</i> | 2 | 2 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 3 | 3 | 0 | |
| Wigeon | <i>Anas penelope</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 0 | 1 | 0 | |
| Northern Shoveler | <i>Anas clypeata</i> | 2 | 2 | 0 | | | | | | | | | | 1 | 0 | 0 | | | | 2 | 2 | 0 | |
| Red Shoveler | <i>Anas platalea</i> | 1 | 2 | 0 | | | | | | | | | | | | | | | | 1 | 2 | 0 | |
| Laysan Teal | <i>Anas platyrhynchos laysanensis</i> | 3 | 3 | 0 | | | | | | | | | | 1 | 0 | 0 | | | | 2 | 3 | 0 | |
| Garganey | <i>Anas querquedula</i> | 2 | 2 | 0 | | | | | | | | | | | | | | | | 2 | 2 | 0 | |
| Chiloe Wigeon | <i>Anas sibilatrix</i> | 2 | 2 | 0 | | | | | | | | | | 0 | 1 | 0 | | | | 2 | 1 | 0 | |
| Ringed Teal | <i>Anas leucophrys</i> | 2 | 2 | 0 | | | | | | | | | | | | | | | | 2 | 2 | 0 | |
| Marbled Teal | <i>Anas angustirostris</i> | 3 | 3 | 0 | | | | | | | | | | | | | | | | 3 | 3 | 0 | |
| Common Eider | <i>Somateria mollissima</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Tufted Duck | <i>Aythya fuligula</i> | 2 | 2 | 0 | | | | 0 | 0 | 9 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 2 | 1 | 4 | |
| Rosy-billed Pochard | <i>Netta peposaca</i> | 2 | 2 | 0 | | | | | | | | | | | | | | | | 2 | 2 | 0 | |
| Red-crested Pochard | <i>Netta rufina</i> | 2 | 2 | 0 | | | | 0 | 0 | 8 | 0 | 0 | 3 | | | | 0 | 0 | 5 | 2 | 2 | 0 | |
| Maned Goose | <i>Chenonetta jubata</i> | 3 | 3 | 0 | | | | | | | | | | | | | | | | 3 | 3 | 0 | |
| Mandarin Duck | <i>Aix galericulata</i> | 9 | 10 | 0 | | | | 0 | 0 | 25 | 0 | 0 | 14 | | | | 0 | 0 | 8 | 9 | 10 | 3 | |
| Carolina Duck | <i>Aix sponsa</i> | 3 | 3 | 0 | | | | 0 | 0 | 10 | 0 | 0 | 1 | | | | 0 | 0 | 9 | 3 | 3 | 0 | |
| White-winged Wood Duck | <i>Cairina scutulata</i> | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | | | | 1 | 0 | 0 | | | 0 | 2 | 2 | 0 | |
| Smew | <i>Mergus albellus</i> | 2 | 2 | 0 | 0 | 1 | 0 | | | | | | | 0 | 2 | 0 | | | 0 | 0 | 4 | 0 | |
| Hooded Merganser | <i>Mergus cucullatus</i> | 4 | 4 | 0 | | | | 0 | 0 | 4 | 0 | 0 | 3 | | | | | | | 2 | 1 | 0 | |
| Ruddy Duck | <i>Oxyura jamaicensis</i> | 4 | 3 | 0 | | | | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 1 | | | | 2 | 3 | 0 | |

White-winged Wood Ducks. On loan from the Wildfowl & Wetlands Trust. One of our two pairs produced four youngsters in 1991. Photo: Dr. R. Wilkinson



| STOCK 1/1/1991 | | | RECEIVED | | | BORN/H'CH | | | D.N.S. 30 DAYS | | | DEATHS OTHERS | | | DISPOSALS | | | STOCK 31/12/91 | | |
|-------------------|---|-----|----------|---|-----|-----------|---|-----|-------------------|---|-----|------------------|---|-----|-----------|---|-----|-------------------|---|-----|
| M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? |

FALCONIFORMES

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-----------------------------|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|---|---|
| Andean Condor | <i>Vultur gryphus</i> | 2 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Bateleur Eagle | <i>Terathopus ecaudatus</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | | 1 | 1 | 0 |
| Wedge-tailed Eagle | <i>Aquila audax</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | | 1 | 1 | 0 |

GALLIFORMES

| | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|----------------------------------|---|---|---|---|---|---|---|---|----|---|---|---|---|---|---|---|---|----|---|---|---|
| Variable Chachalaca | <i>Ortalis motmot</i> | 1 | 1 | 0 | | | | 0 | 0 | 4 | | | | | | | 0 | 0 | 4 | 1 | 1 | 0 |
| Bare-faced Curassow | <i>Crax fasciolata</i> | 1 | 2 | 0 | | | | 5 | 0 | 0 | | | | 0 | 1 | 0 | 4 | 0 | 0 | 2 | 1 | 0 |
| Californian Quail | <i>Lophortyx californica</i> | 2 | 2 | 0 | | | | 0 | 0 | 12 | | | | 0 | 1 | 2 | 1 | 0 | 10 | 1 | 1 | 0 |
| Rourol Partridge | <i>Rollulus rouloul</i> | 2 | 2 | 0 | | | | 2 | 1 | 9 | 0 | 0 | 9 | | | | 1 | 1 | 0 | 3 | 2 | 0 |
| Satyr Tragopan | <i>Tragopan satyra</i> | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | | | | | | | 1 | 0 | 0 | 2 | 3 | 0 |
| Temminck's Tragopan | <i>Tragopan temminckii</i> | 1 | 1 | 0 | | | | 6 | 3 | 5 | 0 | 0 | 2 | 0 | 0 | 3 | 6 | 3 | 0 | 1 | 1 | 0 |
| Himalayan Monal | <i>Lophophorus impeyanus</i> | 1 | 1 | 0 | | | | 0 | 0 | 10 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 8 | 1 | 1 | 0 |
| Blue Eared Pheasant | <i>Crossoptilon auritum</i> | 2 | 1 | 0 | 0 | 1 | 0 | | | | | | | 1 | 2 | 0 | | | | 1 | 0 | 0 |
| Brown Eared Pheasant | <i>Crossoptilon mantchuricum</i> | 1 | 1 | 2 | | | | | | | | | | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| White Eared Pheasant | <i>Crossoptilon crossoptilon</i> | 1 | 1 | 0 | | | | 0 | 0 | 3 | 0 | 0 | 1 | | | | 0 | 0 | 2 | 1 | 1 | 0 |
| Golden Pheasant | <i>Chrysolophus pictus</i> | 1 | 2 | 0 | | | | 0 | 0 | 11 | | | | | | | 0 | 0 | 11 | 1 | 2 | 0 |
| Lady Amherst's Pheasant | <i>Chrysolophus amherstiae</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 |
| Grey Peacock-Pheasant | <i>Polyplectron bicalcaratum</i> | 3 | 1 | 0 | 0 | 1 | 0 | | | | | | | 1 | 0 | 0 | 2 | 2 | 0 | | | |
| Palawan Peacock Pheasant | <i>Polyplectron emphanum</i> | 3 | 2 | 0 | 0 | 1 | 0 | | | | | | | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 2 | 2 |
| Edwards' Pheasant | <i>Lophura edwardsi</i> | 0 | 1 | 0 | 1 | 0 | 0 | 6 | 2 | 5 | 0 | 0 | 1 | 0 | 0 | 4 | 2 | 2 | 0 | 5 | 1 | 0 |
| Common Peafowl | <i>Pavo cristatus</i> | 3 | 3 | 0 | | | | 0 | 0 | 7 | | | | 1 | 1 | 0 | 0 | 0 | 7 | 2 | 2 | 0 |
| Congo Peafowl | <i>Afropavo congensis</i> | 1 | 1 | 0 | 1 | 0 | 0 | | | | | | | | | | 1 | 0 | 0 | 1 | 1 | 0 |

GRUIFORMES

| | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red-crowned Crane | <i>Grus japonensis</i> | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | | | | | | | | | | 1 | 5 | 0 |
| White-naped Crane | <i>Grus vipio</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 |
| Sarus Crane | <i>Grus antigone</i> | 1 | 1 | 1 | | | | 0 | 0 | 3 | | | | | | | 1 | 1 | 4 | 0 | 0 | 0 |
| Demoiselle Crane | <i>Anthropoides virgo</i> | 2 | 2 | 0 | | | | | | | | | | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| West African Crowned Crane | <i>Balearica pavonina pavonina</i> | 4 | 3 | 0 | | | | 0 | 0 | 4 | 0 | 0 | 2 | | | | | | | 4 | 3 | 2 |
| Cough Island Moorhen | <i>Gallinula comeri</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 |
| Sun Bittern | <i>Eurypyga helias</i> | 2 | 0 | 0 | | | | | | | | | | | | | | | | 2 | 0 | 0 |
| Little Black Bustard | <i>Eupodotis afra</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 |

CHARADRIIFORMES

| | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-----------------------------|---|---|---|--|--|--|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|
| Southern Stone Curlew | <i>Burhinus magirostris</i> | 0 | 1 | 0 | | | | | | | | | | | | | | | | 0 | 1 | 0 |
| Blacksmith's Plover | <i>Vanellus armatus</i> | 3 | 3 | 0 | | | | 0 | 0 | 9 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 7 | 2 | 2 | 0 |
| Crowned Plover | <i>Vanellus coronatus</i> | 3 | 3 | 0 | | | | 0 | 0 | 11 | 0 | 0 | 4 | 0 | 0 | 1 | 1 | 1 | 6 | 2 | 2 | 0 |

COLUMBIFORMES

| | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|---|---|
| Speckled Pigeon | <i>Columba guinea</i> | 0 | 0 | 4 | | | | | | | | | | | | | | | | 0 | 0 | 4 |
| Pink Pigeon | <i>Nesoenas mayeri</i> | 3 | 2 | 0 | 1 | 1 | 0 | | | | | | | 1 | 0 | 0 | | | | 3 | 3 | 0 |
| Laughing Dove | <i>Streptopelia senegalensis</i> | 1 | 1 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | | | | | | | 1 | 1 | 6 |
| Bar-tailed Cuckoo Dove | <i>Macropygia unchall</i> | 3 | 0 | 0 | | | | | | | | | | | | | 1 | 0 | 0 | 2 | 0 | 0 |
| Emerald Dove | <i>Chalcophaps indica</i> | 3 | 0 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | 3 | 1 | 0 |
| Crested Bronzewing Pigeon | <i>Ocyphaps lophotes</i> | 2 | 2 | 4 | | | | | | | | | | 0 | 1 | 0 | | | | 2 | 1 | 4 |
| Common Bronzewing Pigeon | <i>Phaps chalcoptera</i> | 1 | 1 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 2 | 2 | 0 |
| Diamond Dove | <i>Geopelia cuneata</i> | 1 | 1 | 6 | | | | 0 | 0 | 7 | 0 | 0 | 2 | | | | 0 | 0 | 10 | 1 | 1 | 1 |
| Mountain Witch Dove | <i>Geotrygon versicolor</i> | 1 | 2 | 1 | | | | | | | | | | | | | | | | 1 | 2 | 1 |
| Golden Heart Pigeon | <i>Gallinolumba rufigula</i> | 1 | 2 | 0 | | | | | | | | | | 0 | 1 | 0 | | | | 1 | 1 | 0 |
| Luzon Bleeding Heart Pigeon | <i>Gallinolumba luzonica</i> | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | | | | 0 | 1 | 0 | 2 | 2 | 0 |
| Celebes Quail Dove | <i>Gallinolumba tristigmata</i> | 3 | 1 | 0 | | | | 0 | 0 | 5 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 |
| Pink-necked Green Pigeon | <i>Treron vernans</i> | 1 | 1 | 0 | | | | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | | | | 2 | 1 | 0 |
| Superb Fruit Dove | <i>Ptilinopus superbus</i> | 0 | 0 | 0 | 1 | 2 | 0 | | | | | | | | | | | | | 1 | 2 | 0 |
| Pied Imperial Pigeon | <i>Ducula bicolor</i> | 0 | 0 | 0 | 2 | 2 | 0 | | | | | | | | | | | | | 2 | 2 | 0 |
| Blue Crowned Pigeon | <i>Goura cristata</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 | 0 |
| Victoria Crowned Pigeon | <i>Goura victoria</i> | 0 | 0 | 0 | 1 | 0 | 0 | | | | | | | | | | 1 | 0 | 0 | 0 | 0 | 0 |

Adult Red Crowned Crane and chick - one of two hatched in 1991.



Chilean Flamingo and chick - one of three reared in 1991.



Photo: Dr. R. Wilkinson Curator of Birds

BIRDS (CONTINUED)

| STOCK 1/1/1991 | RECEIVED | | | BORN/H'CH | | | D.N.S. 30 DAYS | | | DEATHS OTHERS | | | DISPOSALS | | | STOCK 31/12/91 | | |
|-------------------|----------|---|-----|-----------|---|-----|-------------------|---|-----|------------------|---|-----|-----------|---|-----|-------------------|---|-----|
| | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? |

PSITTACIFORMES

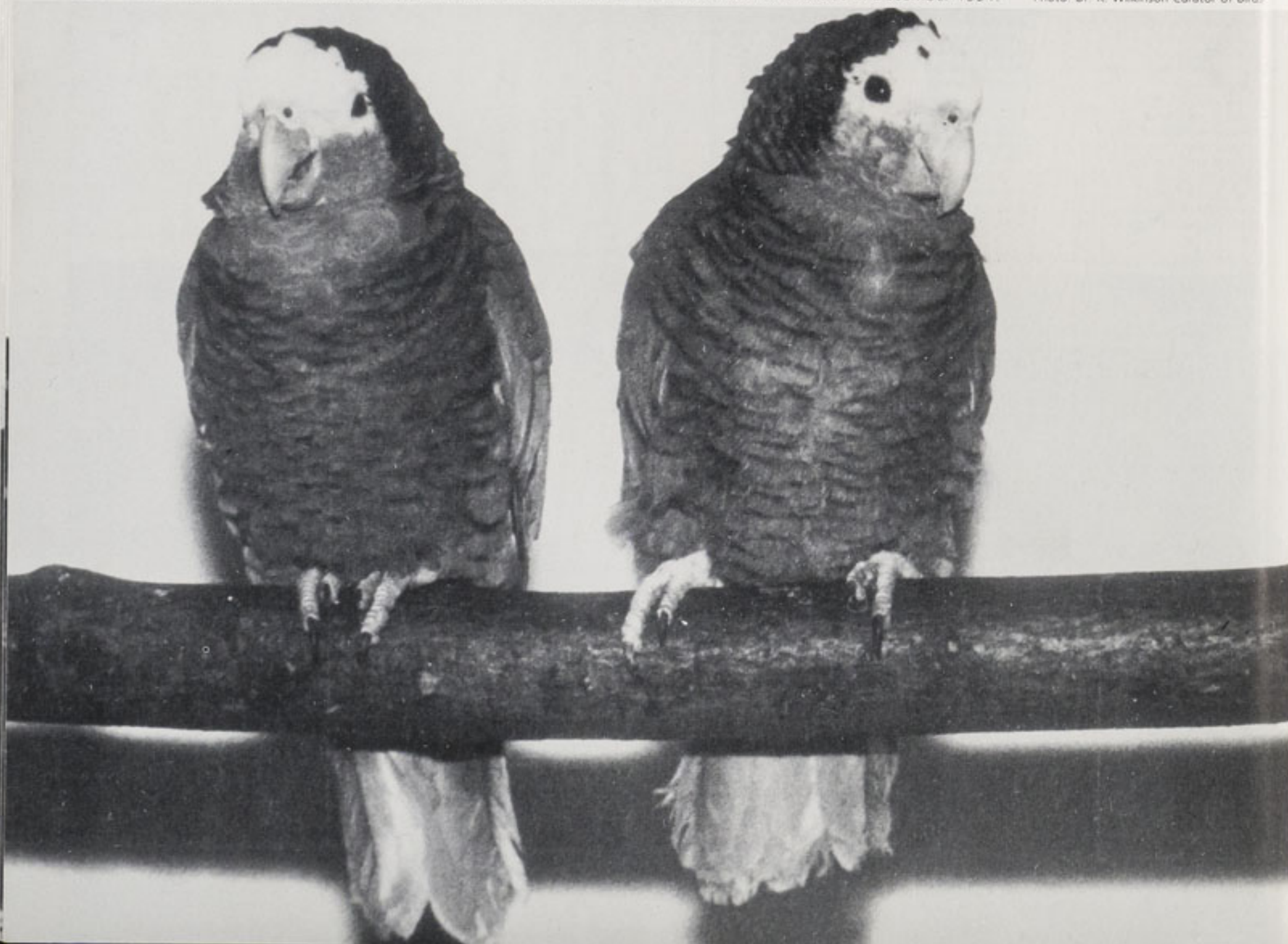
| | | | | | | | | | | | | | | | | | | |
|--------------------------------|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blue-streaked Lory | <i>Eos reticulata</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | 1 | 1 | 0 |
| Duyvenbode's Lory | <i>Chalcopsitta duivenbodei</i> | 1 | 0 | 0 | 0 | 1 | 0 | | | | | | | | | 1 | 1 | 0 |
| Yellow-backed Chattering Lory | <i>Lorius garrulus flavopalliatu</i> | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | | | | 1 | 0 | 0 | 2 | 2 |
| Stella's Lorikeet | <i>Charmosyna papou</i> | 1 | 1 | 0 | 1 | 1 | 0 | | | | | 1 | 1 | 0 | | | 1 | 1 |
| Musk Lorikeet | <i>Glossopsitta concinna</i> | 1 | 5 | 0 | 0 | 1 | 0 | | | | | 1 | 1 | 0 | | | 1 | 5 |
| Musschenbroek's Lorikeet | <i>Neopsittacus musschenbroekii</i> | 2 | 2 | 0 | | | | 0 | 0 | 4 | 0 | 0 | 1 | | | 0 | 0 | 2 |
| Palm Cockatoo | <i>Probosciger aterrimus</i> | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 |
| Leadbeaters Cockatoo | <i>Cacatua leadbeateri</i> | 3 | 1 | 0 | | | | | | | | | | | 2 | 0 | 0 | 1 |
| Blue-eyed Cockatoo | <i>Cacatua ophthalmica</i> | 4 | 5 | 0 | 1 | 0 | 0 | | | | | | | 1 | 1 | 0 | 4 | 4 |
| White Cockatoo | <i>Cacatua alba</i> | 0 | 0 | 0 | 1 | 0 | 0 | | | | | | | 1 | 0 | 0 | 0 | 0 |
| Kea | <i>Nestor notabilis</i> | 3 | 1 | 0 | 0 | 1 | 0 | | | | | | | | | 3 | 2 | 0 |
| Red-sided Eclectus Parrot | <i>Eclectus roratus polychlorus</i> | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 |
| Solomon Island Eclectus Parrot | <i>Eclectus roratus solomonensis</i> | 1 | 1 | 0 | | | | | | | | 0 | 1 | 0 | | | 1 | 0 |
| 'Vosmaeri' Eclectus Parrot | <i>Eclectus roratus vosmaeri</i> | 0 | 0 | 0 | 0 | 1 | 0 | | | | | | | | | | 0 | 1 |
| Greater Vasa Parrot | <i>Coracopsis vasa</i> | 4 | 2 | 0 | | | | 1 | 3 | 0 | | | | | 3 | 3 | 0 | 2 |
| Lesser Vasa Parrot | <i>Coracopsis nigra nigra</i> | 6 | 3 | 0 | | | | 0 | 0 | 3 | 0 | 0 | 2 | | 2 | 1 | 0 | 4 |
| Splendid Parrakeet | <i>Neophema splendida</i> | 2 | 1 | 0 | | | | | | | | | | 1 | 0 | 0 | 1 | 1 |
| Derbyan Parrakeet | <i>Psittacula derbiana</i> | 4 | 3 | 0 | | | | 0 | 0 | 4 | 0 | 0 | 2 | 1 | 1 | 0 | 3 | 2 |
| Blue and Yellow Macaw | <i>Ara ararauna</i> | 2 | 2 | 2 | | | | 2 | 1 | 0 | | | | | 0 | 0 | 2 | 4 |
| Scarlet Macaw | <i>Ara macao</i> | 2 | 2 | 0 | 0 | 1 | 0 | | | | | | | 1 | 1 | 0 | 1 | 2 |
| Red-fronted Macaw | <i>Ara rubrogenys</i> | 3 | 2 | 0 | | | | 0 | 0 | 5 | | | | 1 | 0 | 0 | 2 | 2 |
| Yellow-naped Macaw | <i>Ara auricollis</i> | 1 | 1 | 0 | 1 | 1 | 0 | | | | | | | 1 | 1 | 0 | 1 | 1 |
| Red-masked Conure | <i>Aratinga erythrogastris</i> | 5 | 2 | 0 | | | | | | | | | | 3 | 0 | 0 | 2 | 2 |
| Queen of Bavaria Conure | <i>Aratinga guarouba</i> | 1 | 2 | 0 | | | | | | | | | | 0 | 1 | 0 | 1 | 1 |
| Thick-billed Parrot | <i>Rhynchopsitta pachyrhyncha</i> | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 |
| Greater Patagonian Conure | <i>Cyanoliseus patagonus byroni</i> | 0 | 0 | 0 | 0 | 1 | 0 | | | | | | | 0 | 1 | 0 | 0 | 0 |
| Lesser Patagonian Conure | <i>Cyanoliseus patagonus</i> | 4 | 5 | 0 | | | | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 4 |
| Blue-throated Conure | <i>Pyrrhura cruentata</i> | 1 | 1 | 0 | | | | 0 | 0 | 4 | 0 | 0 | 4 | | | | 1 | 1 |
| Slender-billed Parrakeet | <i>Enicognathus leptorhynchus</i> | 1 | 1 | 0 | 0 | 2 | 0 | | | | | | | 0 | 1 | 0 | 1 | 2 |
| Yellow-faced Parrotlet | <i>Forpus xanthops</i> | 3 | 2 | 0 | 1 | 0 | 0 | | | | | | | | | | 4 | 2 |
| Grey-cheeked Parrakeet | <i>Brotogeris pyrrhopterus</i> | 3 | 3 | 0 | 1 | 0 | 0 | | | | | | | 0 | 1 | 0 | 1 | 0 |
| Lilacine Amazon Parrot | <i>Amazona autumnalis lilacina</i> | 1 | 1 | 0 | | | | | | | | | | | | | 3 | 2 |
| Cuban Amazon | <i>Amazona leucocephala</i> | 0 | 0 | 0 | 5 | 3 | 1 | | | | | | | | | | 5 | 3 |
| Green-cheeked Amazon | <i>Amazona viridigenalis</i> | 2 | 2 | 0 | | | | | | | | | | | | | 2 | 2 |
| Hawk-headed Parrot | <i>Deropytus accipitrinus</i> | 2 | 2 | 0 | | | | 0 | 0 | 3 | | | | | | | 2 | 2 |

CUCULIFORMES

| | | | | | | | | | | | | | | | | | | | |
|-----------------------|------------------------------|---|---|---|---|---|---|---|---|---|--|--|---|---|---|---|---|---|---|
| Red-crested Turaco | <i>Tauraco erythrolophus</i> | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | | | | | 0 | 1 | 0 | 1 | 1 |
| Schalow's Turaco | <i>Tauraco schalowi</i> | 2 | 1 | 0 | | | | 0 | 0 | 2 | | | | | | | | 2 | 1 |
| White-cheeked Turaco | <i>Tauraco leucotis</i> | 2 | 2 | 0 | | | | | | | | | | | | | | 2 | 2 |
| Violet Plantain Eater | <i>Musophaga violacea</i> | 1 | 1 | 0 | | | | 0 | 0 | 2 | | | 0 | 0 | 1 | 0 | 0 | 1 | 1 |

Cuban Amazons. A group of these rare Caribbean parrots were received from HM Customs & Excise in December 1991.

Photo: Dr. R. Wilkinson Curator of Birds



| | | STOCK 1/1/1991 | | | RECEIVED | | | BORN/H'CH | | | D.N.S. 30 DAYS | | | DEATHS OTHERS | | | DISPOSALS | | | STOCK 31/12/91 | | | |
|-------------------------------|--|-------------------|---|-----|----------|---|-----|-----------|-----|-----|-------------------|---|-----|------------------|---|-----|-----------|---|-----|-------------------|---|-----|---|
| | | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | |
| STRIGIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Barn Owl | <i>Tyto alba</i> | 2 | 2 | 0 | | | | 0 | 0 | 16 | | | | | | | 1 | 1 | 16 | 1 | 1 | 0 | |
| White-faced Scops Owl | <i>Otus leucotis</i> | 1 | 2 | 0 | | | | | | | | | | | | | | | | 1 | 2 | 0 | |
| Great Eagle Owl | <i>Bubo bubo</i> | 1 | 1 | 0 | | | | 0 | 0 | 3 | | | | | | | 1 | 1 | 3 | 0 | 0 | 0 | |
| Milky Eagle Owl | <i>Bubo lacteus</i> | 1 | 0 | 0 | 1 | 0 | 0 | | | | | | | | | | | | | 2 | 0 | 0 | |
| Great Horned Owl | <i>Bubo virginianus</i> | 1 | 1 | 0 | | | | | | | | | | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 1 | 0 | |
| Vermiculated Fishing Owl | <i>Scotopelia bouvieri</i> | 0 | 1 | 0 | | | | | | | | | | | | | | | | 0 | 1 | 0 | |
| Rufous Fishing Owl | <i>Scotopelia ussheri</i> | 0 | 0 | 0 | 1 | 0 | 0 | | | | | | | | | | | | | 1 | 0 | 0 | |
| Spectacled Owl | <i>Pulsatrix perspicillata</i> | 4 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | | | | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 2 | 0 | |
| Snowy Owl | <i>Nyctea scandiaca</i> | 2 | 2 | 0 | | | | 0 | 0 | 4 | | | | | | | 0 | 0 | 4 | 2 | 2 | 0 | |
| CAPRIMULGIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Tawny Frogmouth | <i>Podargus strigoides</i> | 2 | 0 | 0 | | | | | | | | | | | | | | | | | 2 | 0 | 0 |
| APODIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Sparkling Violetear | <i>Colibri coruscans</i> | 1 | 0 | 0 | 0 | 1 | 0 | | | | | | | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| COLIIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Red-backed Mousebird | <i>Colius castanotus</i> | 0 | 0 | 2 | | | | | | | | | | | | | | | | | 0 | 0 | 2 |
| CORACIIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Kookaburra | <i>Dacelo novaeguineae</i> | 2 | 2 | 0 | | | | 1 | 2 | 0 | | | | | | | 0 | 1 | 0 | 3 | 3 | 0 | |
| Blue-crowned Motmot | <i>Momotus momota</i> | 3 | 2 | 0 | | | | | | | | | | | | | 1 | 0 | 0 | 2 | 2 | 0 | |
| Roller | <i>Coracias garrulus</i> | 1 | 0 | 0 | | | | | | | | | | | | | 1 | 0 | 0 | 0 | 0 | 0 | |
| Grey Hornbill | <i>Tockus nasutus</i> | 2 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | | | | 1 | 2 | 2 | 2 | 3 | 1 | |
| Red-billed Hornbill | <i>Tockus erythrorhynchus</i> | 1 | 1 | 0 | | | | | | | | | | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| Trumpeter Hornbill | <i>Bycanistes buccinator</i> | 1 | 1 | 0 | | | | 1 | 1 | 0 | | | | | | | | | | 2 | 2 | 0 | |
| Great Indian Hornbill | <i>Buceros bicornis</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Rhinoceros Hornbill | <i>Buceros rhinoceros</i> | 1 | 1 | 0 | | | | | | | | | | 1 | 0 | 0 | | | | 0 | 1 | 0 | |
| Wrinkled Hornbill | <i>Aceros corrugatus</i> | 1 | 1 | 0 | | | | 0 | 0 | 2 | 0 | 0 | 2 | | | | | | | 1 | 1 | 0 | |
| PICIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Collared Aracari | <i>Pteroglossus torquatus</i> | 1 | 1 | 0 | | | | | | | | | | 1 | 0 | 0 | | | | 0 | 1 | 0 | |
| Toco Toucan | <i>Ramphastos toco</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Channel-billed Toucan | <i>Ramphastos vitellinus</i> | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | | | | 0 | 0 | 2 | 2 | 2 | 2 | |
| White Woodpecker | <i>Leuconerpes candidus</i> | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | | | | | | | | | | 2 | 2 | 1 | |
| PASSERIFORMES | | | | | | | | | | | | | | | | | | | | | | | |
| Blue-winged Pitta | <i>Pitta brachyura</i> | 2 | 2 | 0 | | | | | | | | | | 0 | 1 | 0 | | | | 2 | 1 | 0 | |
| Red-eared Bulbul | <i>Pycnonotus jocosus</i> | 2 | 2 | 0 | | | | 0 | 0 | 12 | 0 | 0 | 11 | | | | 0 | 0 | 1 | 2 | 2 | 0 | |
| Chinese Bulbul | <i>Pycnonotus sinensis</i> | 1 | 1 | 1 | | | | 0 | 0 | 1 | | | | 0 | 0 | 1 | | | | 1 | 1 | 1 | |
| Fairy Bluebird | <i>Irena puella</i> | 2 | 2 | 1 | | | | 0 | 0 | 7 | 0 | 0 | 5 | | | | 0 | 0 | 3 | 2 | 2 | 0 | |
| White-rumped Shama | <i>Copsychus malabaricus</i> | 1 | 1 | 0 | | | | 0 | 0 | 7 | | | | 0 | 0 | 1 | 0 | 0 | 6 | 1 | 1 | 0 | |
| Plumbeous Redstart | <i>Rhyacornis fuliginosus</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Orange-headed Ground Thrush | <i>Zosterops citrina</i> | 2 | 2 | 0 | | | | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 1 | 0 | | | | 2 | 1 | 0 | |
| Red-tailed Laughing Thrush | <i>Garrulax milnei</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| White-crested Laughing Thrush | <i>Garrulax leucolophus</i> | 1 | 0 | 0 | | | | | | | | | | | | | | | | 1 | 0 | 0 | |
| Pekin Robin | <i>Leiothrix lutea</i> | 1 | 1 | 1 | 1 | 1 | 0 | | | | | | | | | | | | | 2 | 2 | 1 | |
| Silver-eared Mesia | <i>Leiothrix argentea</i> | 1 | 1 | 0 | | | | 0 | 0 | 8 | 0 | 0 | 7 | | | | 0 | 0 | 1 | 1 | 1 | 0 | |
| Splendid Sunbird | <i>Nectarinia coccinogastra</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | 0 | 1 | 0 | | | | 1 | 0 | 0 | |
| Oriental White-eye | <i>Zosterops palpebrosa</i> | 0 | 0 | 0 | 1 | 1 | 1 | | | | | | | | | | | | | 1 | 1 | 1 | |
| Blue-grey Tanager | <i>Thraupis episcopus</i> | 0 | 0 | 0 | 0 | 0 | 1 | | | | | | | | | | | | | 0 | 0 | 1 | |
| Silver-beaked Tanager | <i>Ramphocelus carbo</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 | 0 | |
| Yellow-rumped Tanager | <i>Ramphocelus flammigerus icteronotus</i> | 0 | 0 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | 0 | 1 | 0 | |
| Virginian Cardinal | <i>Cardinalis cardinalis</i> | 0 | 0 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | 0 | 1 | 0 | |
| Giant Cowbird | <i>Scapipura oryzivora</i> | 1 | 0 | 0 | | | | | | | | | | | | | | | | 1 | 0 | 0 | |
| Yellow-fronted Canary | <i>Serinus mozambicus</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Mexican House Finch | <i>Carpodacus mexicanus</i> | 3 | 4 | 0 | | | | 3 | 2 | 22 | 0 | 0 | 5 | 1 | 1 | 5 | 0 | 0 | 12 | 5 | 5 | 0 | |
| Beavan's Bullfinch | <i>Pyrrhula erythaca</i> | 0 | 0 | 0 | 2 | 3 | 0 | | | | | | | 0 | 1 | 0 | | | | 2 | 2 | 0 | |
| Red-billed Firefinch | <i>Lagonisticta senegala</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 | 0 | |
| Red-cheeked Cordon-bleu | <i>Uraeginthus bengalus</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 | 0 | |
| Orange-cheeked Waxbill | <i>Estrilda melpoda</i> | 0 | 0 | 9 | | | | | | | | | | | | | | | | 0 | 0 | 9 | |
| Golden-breasted Waxbill | <i>Amandava subflava</i> | 0 | 1 | 0 | 2 | 1 | 0 | | | | | | | 1 | 0 | 0 | | | | 1 | 2 | 0 | |
| Star Finch | <i>Neochmia ruficaudata</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | 1 | 1 | 0 | | | | 0 | 0 | 0 | |
| Zebra Finch | <i>Poephila guttata</i> | 1 | 2 | 0 | 1 | 0 | 0 | | | | | | | | | | | | | 2 | 2 | 0 | |
| Red-billed Buffalo Weaver | <i>Bubalornis niger</i> | 2 | 1 | 0 | | | | | | | | | | | | | | | | 2 | 1 | 0 | |
| White-headed Buffalo Weaver | <i>Dinemellia dinimelli</i> | 1 | 1 | 4 | | | | 0 | 0 | 8 | 0 | 0 | 5 | 0 | 0 | 3 | | | | 1 | 1 | 4 | |
| Java Sparrow | <i>Padda oryzivora</i> | 1 | 1 | 9 | | | | 0 | 0 | 5 | | | | 0 | 0 | 5 | | | | 1 | 1 | 9 | |
| Golden Palm Weaver | <i>Ploceus bojeri</i> | 6 | 1 | 0 | | | | | | | | | | 1 | 1 | 0 | | | | 5 | 0 | 0 | |
| Red-billed Weaver | <i>Quelea quelea</i> | 7 | 1 | 0 | | | | | | | | | | | | | | | | 7 | 1 | 0 | |
| Fire-fronted Bishop | <i>Euplectes diadematus</i> | 1 | 0 | 0 | | | | | | | | | | | | | | | | 1 | 0 | 0 | |
| Asian Glossy Starling | <i>Aplonis panayensis</i> | 1 | 2 | 0 | | | | | | | | | | | | | | | | 1 | 2 | 0 | |
| Red-winged Starling | <i>Onycognathus morio</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Long-tailed Glossy Starling | <i>Lamprotornis caudatus</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Blue-eared Glossy Starling | <i>Lamprotornis chalybaeus</i> | 0 | 0 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | 1 | 1 | 0 | |
| Purple Glossy Starling | <i>Lamprotornis purpureus</i> | 1 | 1 | 0 | | | | 0 | 0 | 3 | | | | 0 | 0 | 1 | | | | 1 | 1 | 2 | |
| Emerald Starling | <i>Lamprocolius iris</i> | 0 | 0 | 3 | 0 | 0 | 2 | | | | | | | 0 | 0 | 1 | | | | 0 | 0 | 4 | |
| Amethyst Starling | <i>Cinnyricinclus leucogaster</i> | 2 | 1 | 0 | 1 | 2 | 0 | | | | | | | | | | | | | 3 | 3 | 0 | |
| African Pied Starling | <i>Spreo bicolor</i> | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | | | | 2 | 2 | 0 | |
| Superb Starling | <i>Spreo superbus</i> | 2 | 2 | 0 | | | | 0 | 0 | 5 | 0 | 0 | 5 | | | | | | | 2 | 2 | 0 | |
| Fischer's Starling | <i>Spreo fischeri</i> | 1 | 1 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 0 | |
| Hildebrandt's Starling | <i>Spreo hildebrandti</i> | 1 | 0 | 0 | | | | | | | | | | 1 | 0 | 0 | | | | 0 | 0 | 0 | |
| Ashy Starling | <i>Cosmopsarus unicolor</i> | 0 | 1 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | 0 | 2 | 0 | |
| Royal Starling | <i>Cosmopsarus regius</i> | 4 | 1 | 0 | | | | | | | | | | 1 | 0 | 0 | | | | 3 | 1 | 0 | |
| Rothschild's Mynah | <i>Leucopsar rothschildi</i> | 6 | 5 | 0 | | | | 3 | 0 | 1 | | | | 1 | 0 | 1 | 1 | 0 | 0 | 7 | 5 | 0 | |
| Coleto Mynah | <i>Sarcops calvus</i> | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | | | | | | | 1 | 1 | 0 | |
| Red-billed Blue Magpie | <i>Urocissa erythrorhyncha</i> | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | |
| Azure-winged Magpie | <i>Cyanopica cyana</i> | 4 | 2 | 0 | | | | 0 | 0</ | | | | | | | | | | | | | | |

REPTILES

STOCK 1/1/1991 RECEIVED BORN/H'CH D.N.S. 30 DAYS DEATHS OTHERS DISPOSALS STOCK 31/12/91
M F Y/7 M F Y/7 M F Y/7 M F Y/7 M F Y/7 M F Y/7 M F Y/7

RHYNCHOCEPHALIA

Tuatara *Sphenodon punctatus* 0 1 0 0 1 0

CHELONIA

Red-legged Tortoise *Geochelone carbonaria* 0 5 0 1 3 0 0 1 0 1 7 0
 Greek Tortoise *Testudo graeca* 9 6 0 1 1 0 1 0 0 9 7 0
 Herman's Tortoise *Testudo hermanni* 13 10 0 2 0 0 2 0 0 9 10 0
 Aldabra Giant Tortoise *Geochelone gigantea* 1 3 0 0 0 0 0 0 0 1 3 0
 Matamata Turtle *Chelus fimbriatus* 0 1 2 0 0 2 0 0 0 0 1 2
 Malayan Box Turtle *Cuora amboinensis* 2 2 0 0 0 2 0 0 0 2 2 2
 Soft-shelled Turtle *Trionyx triunguis* 1 0 0 0 1 0 1 1 0 0 0 0
 Snapping Turtle *Chelydra serpentina* 1 1 0 1 1 0 0 0 0 2 2 0
 Carolina Box Turtle *Terrapene ornata carolinensis* 2 2 2 0 0 1 1 1 0 1 1 3

SAURIA

Egyptian Spiny-tailed Lizard *Uromastyx aegyptius* 0 0 0 3 2 0 0 0 0 3 2 0
 Central American Night Lizard *Lepidophyma flavimaculatum* 0 2 2 0 1 0 0 2 1 0 1 1
 Northern Green Gecko *Naultinus elegans* 4 5 0 1 0 0 0 0 4 4 5 0
 Tokay Gecko *Gekko gecko* 4 12 20 1 0 0 0 0 4 2 9 24
 Round Island Gecko *Phelsuma guentheri* 0 1 0 0 0 0 0 1 0 0 0 0
 Leopard Gecko *Eublepharis macularius* 4 19 0 0 0 87 0 0 73 2 10 12
 Forest Gecko *Hoplodactylus granulosus* 2 2 0 0 2 0 0 2 0 1 2 0
 Anolis Lizard *Anolis equestris equestris* 2 0 0 0 0 0 2 0 0 0 0 0
 Common Iguana *Iguana iguana* 3 6 0 1 2 0 0 0 4 3 7 4
 Black Spiny-tail Iguana *Ctenosaura similis* 4 2 1 0 0 3 0 2 1 3 0 3
 Rhinoceros Iguana *Cyclura cornuta* 2 4 0 0 0 3 0 0 0 2 4 3
 Thailand Water Dragon *Physignathus cocincinus* 2 3 0 1 1 0 1 1 0 1 2 0
 Eastern Water Dragon *Physignathus lesuerii lesuerii* 3 4 0 0 0 0 0 0 0 3 4 0
 Philippine Sail-fin Lizard *Hydrosaurus pustulatus* 1 5 0 0 0 5 0 0 0 1 5 5
 Malayan Sail-fin Lizard *Hydrosaurus amboinensis* 1 3 12 1 1 0 0 0 8 1 2 15
 Crocodile Lizard *Shinisaurus crocodilurus* 5 4 0 0 0 0 3 3 0 2 1 0
 American Basilisk *Basiliscus basiliscus* 2 5 0 0 0 53 0 0 42 1 3 11
 Plumed Basilisk *Basiliscus plumifrons* 1 0 0 0 0 11 1 0 0 0 0 11
 Prehensile-tailed Skink *Corucia zebata* 2 7 1 1 2 0 1 4 0 2 5 1
 Salvator Monitor *Varanus salvator* 1 1 0 0 1 0 0 1 0 1 2 0
 Fat-tail Gecko *Thecadactylus rapicauda* 0 1 0 0 0 0 0 0 0 0 1 0
 Bearded Dragon *Acanthodraco barbatus* 1 4 0 1 4 0 1 0 0 0 0 0
 Teguxin *Tupinambis teguxin* 1 0 0 1 0 0 1 0 0 0 0 0

SERPENTES

Brazilian Rainbow Boa *Epicrates cenchria cenchria* 1 2 0 1 2 0 1 2 0 1 2 0
 Sunbeam Snake *Xenopeltis unicolor* 1 1 7 0 0 1 0 0 1 1 7
 Calabar Python *Calabaria reinhardtii* 2 0 0 1 1 0 1 0 0 2 1 0
 Indian Python *Python molurus bivittatus* 2 3 0 0 0 0 2 2 0 0 1 0
 Royal Python *Python regius* 4 2 1 0 0 0 2 0 0 2 2 1
 Rubber Boa *Charina bottae* 2 0 0 0 0 0 2 0 0 2 0 0
 Green Tree Python *Morelia viridis* 1 1 8 0 0 1 0 0 1 1 1 7
 Green Anaconda *Eunectes murinus* 1 2 0 0 1 0 0 2 0 1 1 0
 Boa Constrictor *Constrictor constrictor* 3 2 0 0 0 0 2 1 0 1 1 0
 Cuban Boa *Epicrates angulifer* 2 2 0 0 0 0 1 0 0 2 2 0
 Jamaican Boa *Epicrates subflavus* 2 2 0 0 0 0 1 0 0 1 2 0
 Rainbow Boa *Epicrates cenchria maura* 1 2 0 0 0 0 1 2 0 1 2 0
 Madagascan Boa *Sanzinia madagascariensis* 4 4 0 0 0 2 0 0 0 2 2 2
 Honduran Milk Snake *Lampropeltis triangulum* 3 2 0 0 0 4 0 0 0 3 2 4
 Texas Indigo Snake *Drymarchon corais erebennus* 1 1 0 0 0 0 1 0 0 0 0 0
 Black Rat Snake *Elaphe obsoleta obsoleta* 1 1 0 0 0 0 1 0 0 1 1 0
 Western Hog Nose Snake *Heterodon nasicus nasicus* 0 1 0 0 0 0 0 1 0 0 1 0
 Jewel Racer *Drymobius margareteriferus* 4 1 0 0 0 0 4 1 0 4 1 0
 Mangrove Snake *Boiga dendrophila* 1 2 0 0 0 0 1 2 0 1 2 0
 Indian Cobra *Naja naja* 1 1 0 0 0 3 0 0 1 1 1 2
 Green Mamba *Dendroaspis angusticeps* 1 1 0 0 0 0 1 1 0 1 1 0
 Gaboon Viper *Bitis gabonica* 1 0 0 1 1 0 1 0 0 1 1 0
 Swamp Viper *Atheris nitschei* 0 1 0 0 0 0 0 1 0 0 0 0
 Bamboo Pit Viper *Trimeresurus albolabris* 3 1 1 0 0 0 2 1 1 1 0 0
 African Bush Viper *Atheris squamiger* 0 6 3 0 0 0 0 0 1 0 0 2
 Black Tail Rattlesnake *Crotalus molossus molossus* 1 1 0 1 1 0 1 1 0 0 0 0
 Tropical Rattlesnake *Crotalus durissus colineatus* 0 0 0 1 2 0 1 2 0 1 2 0
 San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* 0 0 0 3 3 0 1 0 0 2 3 0
 Moojen's Fer-de-Lance *Bothrops moojeni* 0 0 0 2 3 0 1 2 0 1 1 0
 Maximilian's Viper *Bothrops neuwiedi* 0 0 0 1 1 0 1 0 0 0 1 0
 Emerald Tree Boa *Corallus caninus* 0 0 0 3 3 0 1 0 0 2 3 0

CROCODYLIA

Mississippi Alligator *Alligator mississippiensis* 1 4 0 1 4 0 1 0 0 1 4 0
 Broad-fronted Crocodile *Osteolaemus tetraspis* 1 1 0 0 0 0 1 0 0 0 1 0
 Johnston's Crocodile *Crocodylus johnstoni* 1 1 0 1 1 0 1 0 0 1 1 0

120 163 60 22 30 13 0 2 177 0 2 1 40 46 13 7 4 115 95 143 122
 343 65 179 3 99 126 360

360 Specimens 58 Species.

AMPHIBIA

| | | STOCK 1/1/1991 | | | RECEIVED | | | BORN/H'CH | | | D.N.S. 30 DAYS | | | DEATHS OTHERS | | | DISPOSALS | | | STOCK 31/12/91 | | |
|----------------------------------|------------------------------------|-------------------|----|-----|----------|---|-----|-----------|---|-----|-------------------|---|-----|------------------|----|-----|-----------|-----|-----|-------------------|----|-----|
| | | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? | M | F | Y/? |
| Smoky Jungle Frogs | <i>Leptodactylus pentadactylus</i> | 0 | 0 | 34 | | | | | | | | | 0 | 0 | 18 | | | | 0 | 0 | 16 | |
| Black Axolotl | <i>Amblystoma mexicanum</i> *aq | 0 | 1 | 0 | | | | 0 | 0 | 81 | | | | | | | | | 0 | 1 | 0 | |
| White Axolotl | <i>Amblystoma mexicanum</i> *aq | 0 | 0 | 32 | 0 | 0 | 1 | 0 | 0 | 11 | | | | | | 0 | 0 | 103 | 0 | 0 | 11 | |
| Japanese Fire-bellied Newt | <i>Cynops pyrrhogaster</i> | 0 | 0 | 12 | | | | 0 | 0 | 11 | | | 0 | 0 | 2 | | | | 0 | 0 | 21 | |
| Green Tree Frog | <i>Hyla cinerea</i> | 0 | 0 | 2 | | | | | | | | | | | | | | | 0 | 0 | 2 | |
| Red-eyed Tree Frog | <i>Agalychnis callidryas</i> | 1 | 1 | 60 | | | | | | | | | 0 | 1 | 20 | 0 | 0 | 29 | 1 | 0 | 11 | |
| White's Tree Frog | <i>Litoria caerulea</i> | 5 | 5 | 0 | | | | | | | | | 1 | 0 | 0 | | | | 4 | 5 | 0 | |
| New Guinea Tree Frog | <i>Litoria infrafrenata</i> | 0 | 0 | 0 | 3 | 4 | 0 | | | | | | | | | | | | 3 | 4 | 0 | |
| Green/Black Poison Arrow Frog | <i>Epipedobates trivittatus</i> | 0 | 0 | 0 | 0 | 0 | 7 | | | | | | | | | | | | 0 | 0 | 7 | |
| Argentine Ornate Horned Frog | <i>Ceratophrys ornata</i> | 1 | 1 | 1 | | | | | | | | | 0 | 1 | 0 | | | | 1 | 0 | 1 | |
| African Bullfrog | <i>Pyxicephalus adspersus</i> | 1 | 3 | 0 | | | | | | | | | | | | | | | 1 | 3 | 0 | |
| Albino South African Clawed Frog | <i>Xenopus laevis</i> *aq | 0 | 0 | 6 | | | | 0 | 0 | 4 | | | | | | | | 0 | 0 | 1 | 0 | |
| Nigerian Clawed Frog | <i>Xenopus tropicalis</i> aq | 0 | 0 | 5 | | | | | | | | | | | | | | | 0 | 0 | 5 | |
| Tomato Frog | <i>Discopus antongili</i> | 3 | 2 | 0 | | | | | | | | | | | | | | | 3 | 2 | 0 | |
| Climbing Toad | <i>Pedostildes hosei</i> | 2 | 2 | 0 | | | | | | | | | | | | | | 2 | 2 | 0 | | |
| Fire-bellied Toad | <i>Bombina orientalis</i> | 3 | 7 | 0 | | | | 0 | 0 | 60 | | | | | | | | 0 | 0 | 60 | 3 | |
| | | 16 | 22 | 152 | 3 | 4 | 8 | 0 | 0 | 156 | 0 | 0 | 0 | 1 | 2 | 40 | 0 | 0 | 193 | 18 | 24 | 83 |
| | | 190 | | | 15 | | | 156 | | | 0 | | | 43 | | | 193 | | | 125 | | |

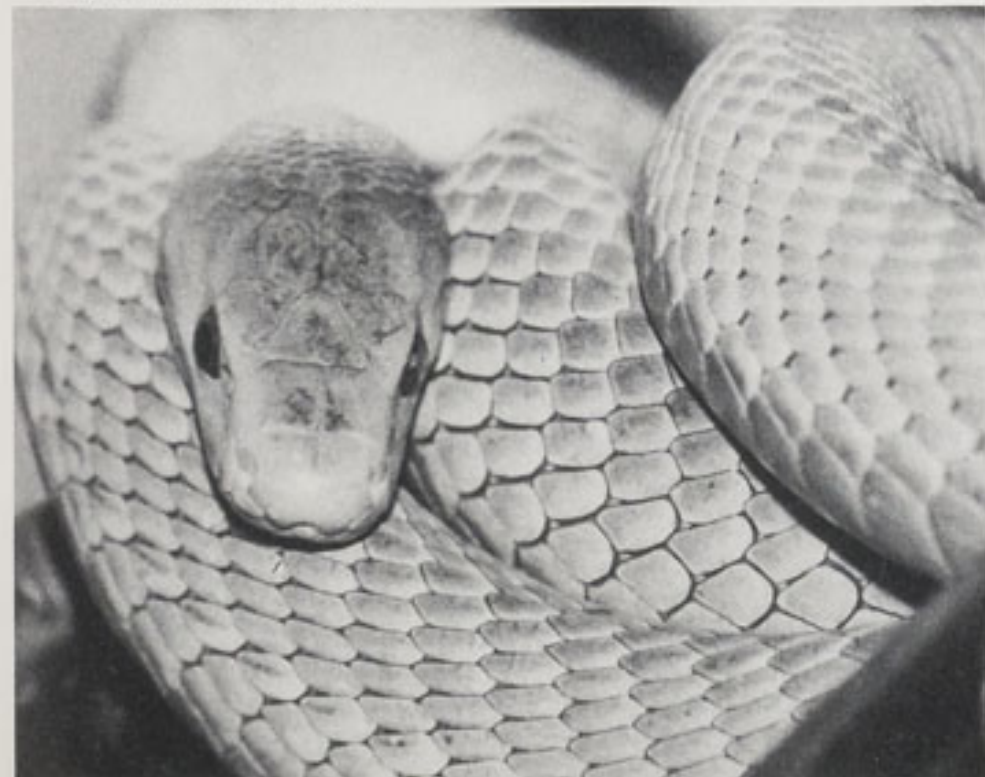
125 specimens, 16 species, 4 species bred
aq indicates species kept by the Aquarium

INVERTEBRATES

| | | STOCK 31/12/91 |
|----------------------------|---------------------------------------|-------------------|
| ARACHNIDS | | |
| Pink-toe Tarantula | <i>Avicularia avicularia</i> | 6 |
| Mexican Red-knee Tarantula | <i>Euatalus smithii</i> | 28 |
| Goliath Bird-eater | <i>Theraphosa leblondi</i> | 1 |
| Israeli Gold Scorpion | <i>Lieus quinquestrintus</i> | 2 |
| INSECTS | | |
| Phillipino Mantid | <i>Hierodulia</i> sp. | 8 |
| Fruit Beetle | <i>Pachnoda marginata</i> | 20 |
| Dung Beetle | <i>Heliocopriss</i> sp. | 10 |
| Goliath Jungle Nymph | <i>Heteroteryx dillittha</i> | 1 |
| Seychelles Millipede | <i>Scathiostrongylus seychellarum</i> | 6 |
| Giant African Millipede | <i>Various</i> sp. | 6 |
| MOLLUSCS | | |
| African Land Snail | <i>Achatina fulica</i> | 12 |
| | <i>Partula taeniata</i> | 452 |
| | <i>Partula tohiveana</i> | 31 |
| | <i>Partula suturalis</i> | 4 |
| Tulip Snail | <i>Fasciolaria tulipa</i> | aq 1 |
| Conch | <i>Fusinus polygonoides</i> | aq 1 |
| COELENTERATES | | |
| Florida Sea Anemone | <i>Condylactis passiflora</i> | aq 1 |
| Sand Anemone | <i>Phymanthus crucifer</i> | aq 4 |
| Carpet Anemone | <i>Stoichactas helianthus</i> | *aq 7 |
| Leather Coral | <i>Sarcophyton trocheliophorum</i> | aq 3 |
| Soft Coral | <i>Xenia</i> sp. | *aq 5 |
| Zoanthid Colony | <i>Zoanthid</i> sp. | *aq 2 |

The highly venomous Green Mamba from Africa - a graceful arboreal snake that uses camouflage, stealth and speed to catch its prey before immobilising it by injecting venom from short fangs near the front of the mouth. The prey is swallowed whole.

Photo by: Keith Brown, Herpetologist.

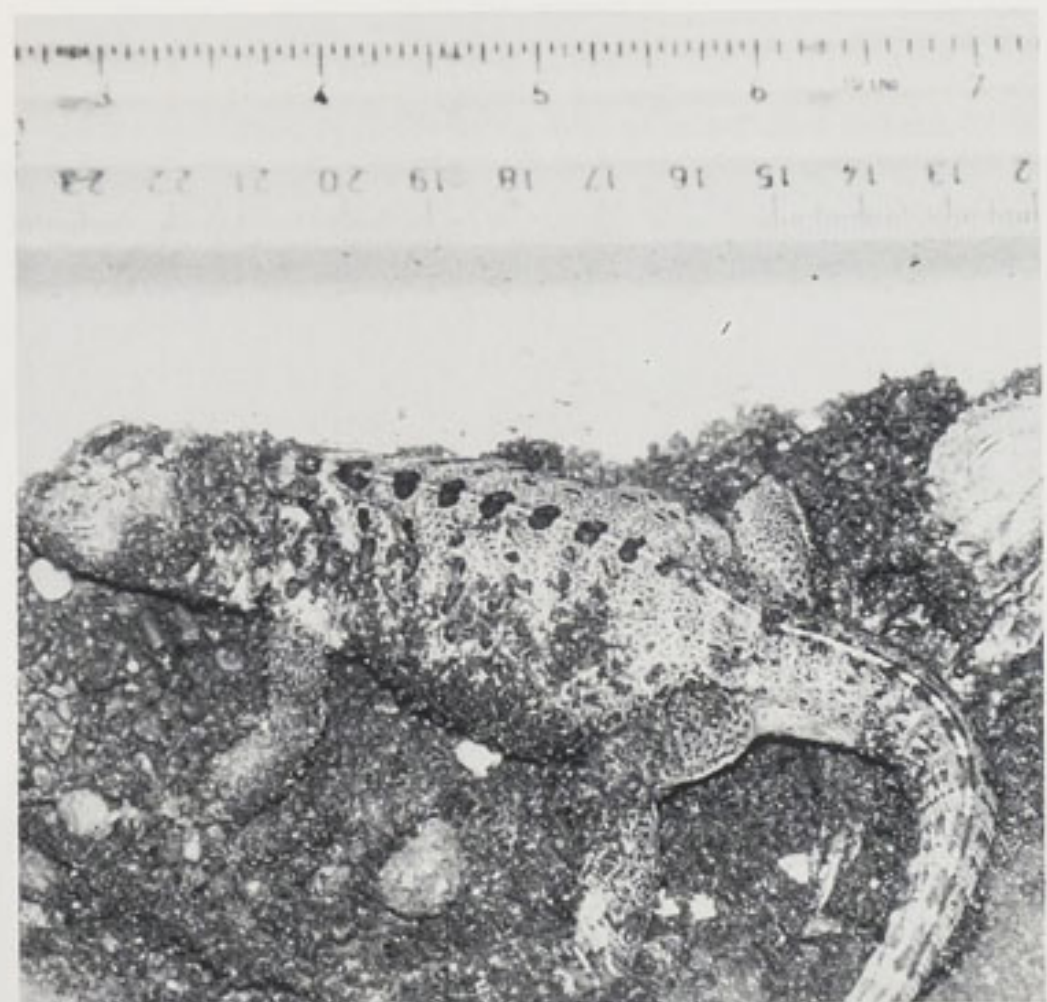


| | | STOCK 31/12/91 |
|---------------------|-----------------------------------|-------------------|
| CRUSTACEANS | | |
| Banded Coral Shrimp | <i>Stenopus hispidus</i> | aq 2 |
| Blood Shrimp | <i>Lysmata</i> sp. | aq 1 |
| Reef Lobster | <i>Enoplometopus occidentalis</i> | aq 1 |
| Blue Lobster | | *aq 10 |
| Hermit Crab | <i>Dardanus</i> sp. | aq 3 |
| ECHINODERMS | | |
| Short-spined Urchin | <i>Arabacia lixula</i> | aq 2 |
| Slate Pencil Urchin | <i>Eucidaris tribuloides</i> | aq 2 |
| Serpent Starfish | <i>Ophiolepis superba</i> | aq 3 |
| | | 635 |

Number of Specimens - 635
Number of Species - 30
*indicates species bred in the Society's collection in 1991
aq indicates species kept by the Aquarium

Three *Rhinoceros Iguanas* hatch after 82 days incubation at a temperature of 35°- 37.5°C. This is a major achievement for this endangered species.

Photo by: Keith Brown, Herpetologist.



ACIPENSERIDAE

| | | |
|------------------------|-------------------------------------|---|
| Sterlet | <i>Acipenser ruthenus</i> | 5 |
| Shovel-nosed Sturgeon | <i>Scaphirhynchus platyrhynchus</i> | 2 |
| Mississippi Paddlefish | <i>Polyodon spathula</i> | 4 |

LEPISOSTEIDAE

| | | |
|-------------|-----------------------------|---|
| Spotted Gar | <i>Lepisosteus oculatus</i> | 6 |
|-------------|-----------------------------|---|

OSTEOGLOSSIDAE

| | | |
|------------------------|---------------------------------|---|
| South American Arowana | <i>Osteoglossum bicirrhosum</i> | 6 |
| Black Arowana | <i>Osteoglossum ferreirai</i> | 3 |

NOTOPTERIDAE

| | | |
|--------------------|-------------------------|----|
| African Knife Fish | <i>Xenomystus nigri</i> | 10 |
|--------------------|-------------------------|----|

MORMYRIDAE

| | | |
|--------------------------------|-------------------------------------|---|
| Blunt Jaw Elephant Trunkfish | <i>Gnathonemus elephas</i> | 4 |
| Elephant Trunkfish | <i>Gnathonemus idus</i> | 1 |
| Long-nosed Elephant Trunkfish | <i>Gnathonemus petersi</i> | 7 |
| Angolan Elephant Trunkfish | <i>Campylomormyrus cassaicus</i> | 5 |
| Down Poker | <i>Campylomormyrus rynchophorus</i> | 6 |
| Short-nosed Elephant Trunkfish | <i>Marcusenrus angolensis</i> | 5 |
| Short-faced Elephant Trunkfish | <i>Mormyrus longirostris</i> | 2 |
| Round-nosed Elephant Trunkfish | <i>Pollimyrus castelnaui</i> | 4 |

POLYPTERIDAE

| | | |
|----------------|-----------------------------|---|
| Marbled Bichir | <i>Polypterus palmas</i> | 2 |
| Bichir | <i>Polypterus senegalis</i> | 4 |

CHARACIDAE

| | | |
|----------------------|-----------------------------------|------|
| Blind Cave Fish | <i>Garra barreimiae</i> | *400 |
| Cave Fish | <i>Garra dunsirei</i> | 7 |
| Red-eyed Characin | <i>Arnoldichthys spilopterus</i> | 10 |
| Long-finned Characin | <i>Brycinus longipinnis</i> | 5 |
| Cardinal Tetra | <i>Paracheirodon axelrodi</i> | 8 |
| Congo Tetra | <i>Phenacogrammus interruptus</i> | 20 |

GYRINOCHEILIDAE

| | | |
|---------------|-------------------------------|----|
| Sucking Loach | <i>Gyrinocheilus ayonieri</i> | 12 |
|---------------|-------------------------------|----|

CITHARINIDAE

| | | |
|----------------------|----------------------------|---|
| Spotted African Pike | <i>Paraphago rostratus</i> | 2 |
|----------------------|----------------------------|---|

GASTERAPELECIDAE

| | | |
|---------------------|--------------------------------|----|
| Marbled Hatchetfish | <i>Carnegialla strigata</i> | 17 |
| Silver Hatchetfish | <i>Thoracocharax stellatus</i> | 1 |

CYPRINIDAE

| | | |
|-------------------|-------------------------------------|------|
| Bream | <i>Abramis brama</i> | 1 |
| Silver Shark | <i>Balantiocheilus melanopterus</i> | 14 |
| Cumming's Barb | <i>Puntius cummingi</i> | 15 |
| Cherry Barb | <i>Capoeta titteya</i> | *24 |
| Goldfish | <i>Carassius auratus</i> | *100 |
| Grass Carp | <i>Ctenopharyngodon idella</i> | 6 |
| Mirror Carp | <i>Cyprinus carpio</i> | 13 |
| Koi Carp | <i>Cyprinus carpio</i> | 50 |
| Golden Orfe | <i>Idus idus</i> | 30 |
| Black Ruby Barb | <i>Puntius nigrofasciatus</i> | *14 |
| Harlequin Rasbora | <i>Rasbora heteromorpha</i> | 8 |
| Golden Rudd | <i>Scardinius erythrophthalmus</i> | 40 |

Blind Cave Fish from Oman. Adults in a breeding tank. Glass marbles prevent parents from eating their own eggs.



COBITIDAE

| | | |
|-------------|--------------------------|----|
| Clown Loach | <i>Botia macracantha</i> | 12 |
|-------------|--------------------------|----|

ELECTROPHORIDAE

| | | |
|--------------|---------------------------------|---|
| Electric Eel | <i>Electrophorus electricus</i> | 5 |
|--------------|---------------------------------|---|

NANDIDAE

| | | |
|----------------------|--------------------|---|
| Dwarf Chameleon Fish | <i>Badis badis</i> | 1 |
|----------------------|--------------------|---|

CICHLIDAE

| | | |
|--------------------------|--|-----|
| Oscar or Marbled Cichlid | <i>Astronotus ocellatus</i> | 12 |
| Frontosa | <i>Cyphotilapia frontosa</i> | *80 |
| | <i>Cyrtocara ahli</i> | *12 |
| Heckel Discus | <i>Symphosodon discus</i> | 2 |
| Turquoise Discus | <i>Symphysodon sp</i> | *11 |
| | <i>Rhamphochromis macrophthalmus</i> | 2 |
| | <i>Nimbochromis venustus</i> | *10 |
| | <i>Lethrinops furcicaudus</i> | 1 |
| | <i>Melanochromis auratus</i> | *30 |
| | <i>Copadichromis borleyi</i> | 10 |
| | <i>Dimidiichromis compressiceps</i> | 2 |
| | <i>Pseudotropheus elongatus chailosi</i> | *30 |
| | <i>Cyrtocara moorii</i> | 12 |
| | <i>Microchromis zebroides</i> | 3 |
| | <i>Aulonocara hueseri</i> | 6 |
| | <i>Pseudocrenilabrus philander</i> | *6 |
| | <i>Pseudotropheus socolofi</i> | *40 |
| | <i>Pseudotropheus acei</i> | 10 |
| | <i>Pseudotropheus lombardoi</i> | 7 |
| | <i>Pseudotropheus auratus</i> | 7 |
| | <i>Pseudotropheus elongatus</i> | *6 |
| | <i>Placidochromis electra</i> | *6 |
| | <i>Protomelas taeniolatus</i> | 6 |
| | <i>Labidochromis caeruleus</i> | *10 |
| | <i>Labidochromis chisumulae</i> | *8 |
| | <i>Labeotropheus fuelleborni</i> | *5 |
| | <i>Nimbochromis polystigma</i> | 5 |

GOBIIDAE

| | | |
|--------------|-------------------------------|---|
| Peacock Goby | <i>Tateurdina ocellicauda</i> | 6 |
|--------------|-------------------------------|---|

ANABANTIDAE

| | | |
|------------------------|--------------------------------|----|
| Leopard Climbing Perch | <i>Ctenopoma acutirostre</i> | 4 |
| Pearl Gourami | <i>Trichogaster leerii</i> | 12 |
| Moonlight Gourami | <i>Trichogaster microlepis</i> | 1 |

ATHERINIDAE

| | | |
|--------------------------|-------------------------------------|------|
| Red Rainbow Fish | <i>Glossolepis incisus</i> | *18 |
| Boeseman's Rainbow Fish | <i>Melanotaenia boesemani</i> | *320 |
| Lake Tebera Rainbow Fish | <i>Melanotaenia herbertaxelrodi</i> | *20 |
| Lake Kutubu Rainbow Fish | <i>Melanotaenia lacustris</i> | *24 |

ICTALURIDAE

| | | |
|-----------------|----------------------------|---|
| Channel Catfish | <i>Ictalurus punctatus</i> | 4 |
|-----------------|----------------------------|---|

MOCHOKIDAE

| | | |
|---------------------------------|--------------------------------|---|
| Polka-dot Upside-down Catfish | <i>Synodontis angelicus</i> | 5 |
| Decorated Upside-down Catfish | <i>Synodontis decorus</i> | 2 |
| Upside-down Catfish | <i>Synodontis nigriventris</i> | 8 |
| Upside-down Catfish | <i>Synodontis nigrita</i> | 6 |
| Lake Malawi Upside-down Catfish | <i>Synodontis nyassae</i> | 6 |

Blind Cave Fish from Oman. Juveniles have vestigial eyes which degenerate with age.



PIMELODIDAE

| | | |
|----------------------------|-----------------------------------|---|
| Tiger Shovel-nosed Catfish | <i>Pseudoplatystoma fasciatum</i> | 1 |
| Shovel-nosed Catfish | <i>Sorubim lima</i> | 2 |

CALLICHTHYIDAE

| | | |
|-------------------|----------------------------|-----|
| Arched Corydoras | <i>Corydoras arcuatus</i> | 4 |
| Burgess's Catfish | <i>Corydoras burgessi</i> | *18 |
| Blue Catfish | <i>Corydoras nattereri</i> | 12 |
| Panda Catfish | <i>Corydoras panda</i> | *12 |
| Flag Tail Catfish | <i>Corydoras robiniae</i> | 3 |

LORICARIIDAE

| | | |
|---------------------------|-------------------------------|-----|
| Plecostomus Catfish | <i>Hypostomus plecostomus</i> | 8 |
| Royal Plecostomus | <i>Panaque nigrolinatus</i> | 1 |
| Blue-eyed Plecostomus | <i>Panaque suttoni</i> | 1 |
| Crown Plecostomus | <i>Peckoltia</i> sp. | 18 |
| Bristle-nosed Plecostomus | <i>Xenocara</i> sp. | *3 |
| Whiptailed Catfish | <i>Sturisoma aureum</i> | *10 |
| Angelicus Peckoltia | <i>Peckoltia</i> sp. | 4 |

CYPRINODONTIDAE

| | | |
|-------|----------------------------|------|
| Guppy | <i>Poecilia reticulata</i> | *200 |
|-------|----------------------------|------|

TOXOTIDAE

| | | |
|-------------|--------------------------|---|
| Archer Fish | <i>Toxotes jaculator</i> | 6 |
|-------------|--------------------------|---|

POTAMOTRYGONIDAE

| | | |
|---------------------|----------------------------|---|
| Freshwater Stingray | <i>Potamotrygon</i> sp. | 1 |
| Freshwater Stingray | <i>Potamotrygon motoro</i> | 5 |

DIPNOI

| | | |
|-------------------|------------------------------|---|
| African Lung Fish | <i>Protopterus annectens</i> | 1 |
|-------------------|------------------------------|---|

SCYLIORHINIDAE

| | | |
|------------------|--------------------------------|---|
| Banded Cat Shark | <i>Chiloscyllium punctatum</i> | 1 |
|------------------|--------------------------------|---|

HOLOCENTRIDAE

| | | |
|-------------|------------------------------|---|
| Soldierfish | <i>Myripristis axillaris</i> | 2 |
|-------------|------------------------------|---|

CENTRISCIDAE

| | | |
|------------|---------------------------|---|
| Shrimpfish | <i>Aeoliscus strigata</i> | 4 |
|------------|---------------------------|---|

SYNGNATHIDAE

| | | |
|-------------------|-----------------------------------|-----|
| Sea Horse | <i>Hippocampus hirtus</i> | *17 |
| Oceanic Sea Horse | <i>Hippocampus kuda</i> | *24 |
| Banded Pipe Fish | <i>Doryrhamphus dactylophonus</i> | 7 |
| Green Pipe Fish | <i>Syngnathoides biaculeatus</i> | 8 |

SCORPAENIDAE

| | | |
|-------------------|--------------------------|---|
| Scorpion Fish | <i>Pterois volitans</i> | 5 |
| Spotfin Lion Fish | <i>Pterois antennata</i> | 2 |

SERRANIDAE

| | | |
|-----------------------|----------------------------|---|
| Blue-jewelled Grouper | <i>Cephalopholis argus</i> | 1 |
|-----------------------|----------------------------|---|

HAEMULINAE

| | | |
|-----------|-------------------------------|---|
| Pork Fish | <i>Anisotremus virginicus</i> | 6 |
|-----------|-------------------------------|---|

SCIAENDIDAE

| | | |
|----------------|---------------------------|---|
| Jackknife Fish | <i>Equetus acuminatus</i> | 1 |
|----------------|---------------------------|---|

MONODACTYLIDAE

| | | |
|------|-------------------------------|---|
| Mono | <i>Monodactylus argenteus</i> | 2 |
|------|-------------------------------|---|

SCATOPHAGIDAE

| | | |
|----------------|---------------------------------|---|
| Silver Scat | <i>Selenotoca multifasciata</i> | 6 |
| Red Tiger Scat | <i>Scatophagus argus</i> | 3 |

POMACANTHIDAE

| | | |
|----------------------|--------------------------------|---|
| Bicolour Angelfish | <i>Centropyge bicolor</i> | 1 |
| Blue-faced Angelfish | <i>Euxhipops xanthometapon</i> | 1 |
| Queen Angelfish | <i>Holocanthus ciliaris</i> | 1 |

POMACENTRIDAE

| | | |
|--------------------------------|-----------------------------------|---|
| Yellow-tailed Blue Damsel Fish | <i>Abudefduf cyaneus</i> | 2 |
| Fire Clown Fish | <i>Amphiprion ephippium</i> | 2 |
| Tomato Clown Fish | <i>Amphiprion frenatus</i> | 4 |
| Common Clownfish | <i>Amphiprion ocellatus</i> | 4 |
| Beau Gregory Damsel Fish | <i>Eupomacentrus leucostictus</i> | 1 |
| Blue Damsel Fish | <i>Pomacentrus alleni</i> | 5 |

LABRIDAE

| | | |
|-------------------|------------------------------|---|
| Bird-mouth Wrasse | <i>Gomphosus varius</i> | 1 |
| Cigar Wrasse | <i>Hologymnosus doliatus</i> | 1 |

CALLIONYMIDAE

| | | |
|---------------|------------------------------------|---|
| Mandarin Fish | <i>Pterosynchiropus splendidus</i> | 3 |
|---------------|------------------------------------|---|

ACANTHURIDAE

| | | |
|--------------|------------------------------|---|
| Regal Tang | <i>Paracanthurus hepatus</i> | 5 |
| Yellow Tang | <i>Zebrasoma flavescens</i> | 3 |
| Sailfin Tang | <i>Zebrasoma veliferum</i> | 1 |
| Moorish Idol | <i>Zanclus canescens</i> | 1 |

BALISTIDAE

| | | |
|------------------------|---------------------------------|---|
| Clown Trigger Fish | <i>Balistoides conspicillum</i> | 1 |
| Red-tooth Trigger Fish | <i>Odonus niger</i> | 2 |

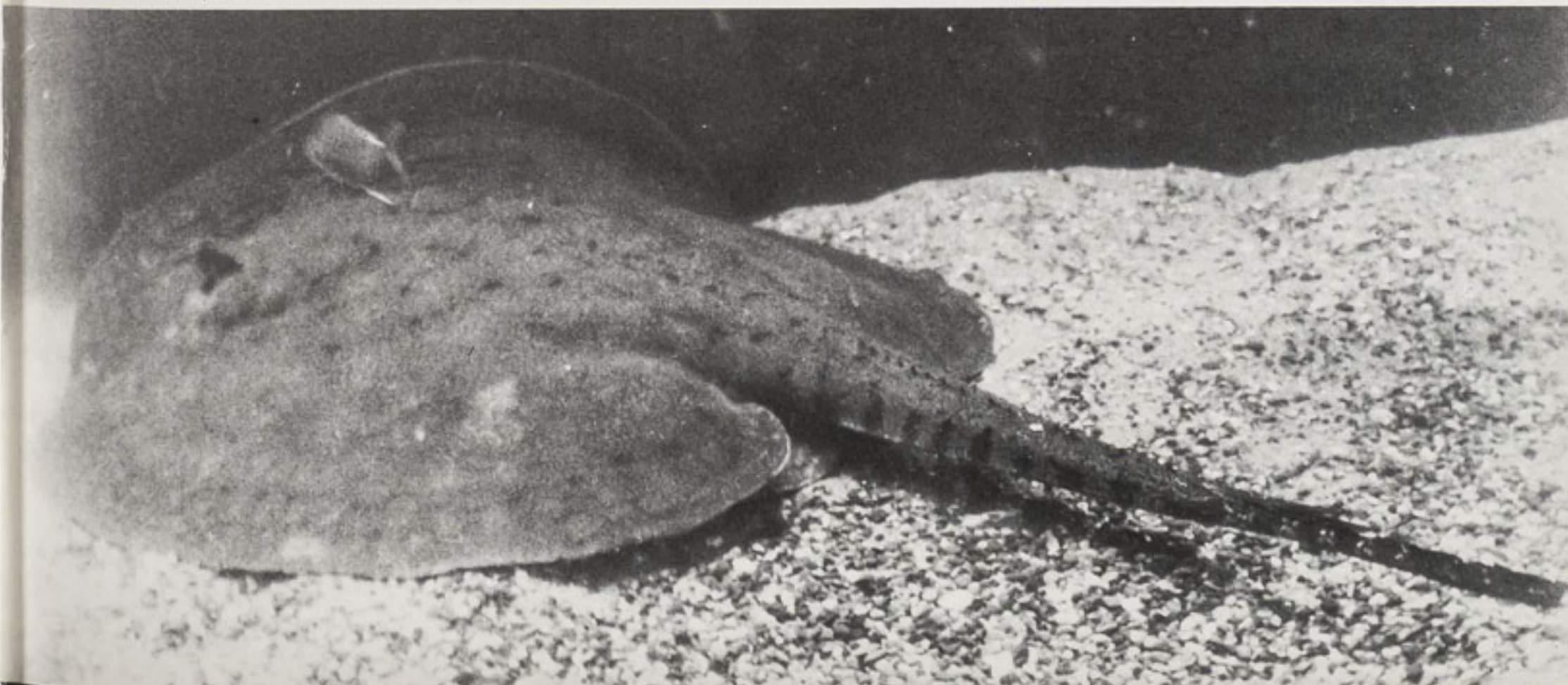
TETRAODONTIDAE

| | | |
|-----------------------|---------------------------------|----|
| Puffer Fish | <i>Arothron hispidus</i> | 1 |
| Figure-eight Puffer | <i>Tetraodon palembangensis</i> | 10 |
| Valentini Puffer Fish | <i>Canthigaster valentini</i> | 1 |

Number of specimens 2116
Number of species 136
* denotes species bred in 1991

Photo: Justin Bell, Aquarium Staff

Freshwater Stingray from the Amazon basin, first bred at Chester Zoo.





Asian Elephants, Chang (L) & Ti Hi Way (R)

The North of England Zoological Society

Registered Charity No. 306077

The continuing success of the Society hangs totally on its ability to persuade members of the public who live within its catchment area to visit and revisit. We have no regular exterior source of income and are wholly dependent on our trading to survive. But in persuading the public to visit, we have to make our conservational work attractive and easy to understand. Thus in a year where recessionary pressures have affected all areas of the market, we were grateful for the support from the public which gave attendance figures within 1.4 percentage points of the previous year, and maintained the recent 'plateau' of around 900,000 paying visitors.

We were pleased that *The Times* newspaper placed us at the top of their league table of value for money attractions in July 1991, on a 'cost per hour' basis. We also began a major improvement of interpretation, starting with Elephants and Rhinoceroses and plan to spread to other areas of the gardens.

But welcome though these are, the Society needs to keep addressing the requirement of upgrading its facilities for animals and visitors alike. Thus we are grateful for the opportunity to improve our car parking and entrance gate to the North of the Zoo which will give the opportunity for parallel additional facilities for the collection.

HOW YOU CAN SUPPORT US

We acknowledge the valuable support of our membership - and are delighted that it stands higher at the year end than ever before. We also thank our adopters and sponsors for their valuable assistance, with contributions ranging from a half share of adoption at £15, to the sponsorship of whole exhibits by far-sighted and generous firms. Donations and legacies are gratefully acknowledged. We must also thank our staff and volunteers for their time and support - and all the other friends who help our work - the media for their interest, suppliers for prompt deliveries and special terms and all those who give time or goods to help us. Conservational work was never meant to be easy but with the support we enjoy, it is much less difficult!

As the Society looks towards the next decade, the message is simple: conservation has a price - and that is the support we need to continue our work.

The Zoo is a member of the North West Tourist Board, The Yorkshire & Humberside Tourist Board, the Wales Tourist Board and the Merseyside Tourism Board. It is a founder member of the Cheshire Tourist Attractions Consortium, and a member of the Association of Leading Visitor Attractions.

The 1991 Annual Report was designed and devised by the Zoo's Marketing Department with typesetting and printing by Rockliff Printing Group, Aintree, Liverpool.

For further information on any aspect of the North of England Zoological Society, please write to the Director, Chester Zoo, Upton-by-Chester, Chester, CH2 1LH. Telephone 0244 380280.

