



CHESTER ZOO

THE NORTH OF ENGLAND
ZOOLOGICAL SOCIETY



ANNUAL REPORT
1994

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Chairman's Report

The close of 1994 marked the end of our 60th anniversary year which had seen much to celebrate at the Zoo. The highlight for the Society was the award of the first NEZS Conservation Medal which we were proud to present to the distinguished zoologist Dr. Jane Goodall. The decision to inaugurate a conservation medal in the Society's name was more than a jubilee gesture. We see it as an important symbol of the serious commitment to zoological and conservation science that underpins the Society. This commitment we also emphasize in the mission statement which the Council produced in 1994. This was the result of a "think tank" we held to help analyse and confirm the principles and aims by which Chester Zoo functions, and to identify the strategic steps required to achieve those aims. The statement is published on the back cover.

On the commercial side, the Zoo continued its programme of investment both in essential infrastructure and in the improvements to its enclosures. In particular the superb new Tuatara exhibit in the Tropical House, and of course the progress so evident at the new entrance. The Zoo cannot afford to stand still and, despite a slightly lower visitor number in 1994 we were still able to make excellent progress.

Our surplus at the year end was £ 258,362. This was achieved on a turnover of £ 5,780,859 and a visitor figure of 773,554, some 5% down on 1993. An examination of the monthly figures shows this was largely due to the exceptionally poor Easter. Since our visitors are the main source of income for the Zoo it is important for us to be aware of any developing trend. An analysis of the gate figures over the last decade shows a gradual increase during the years of economic boom, peaking in 1989. Since then the pattern has been a fluctuating one with 1993 and 1994 both above the low of 1992.

Various factors affect our visitor numbers. Many such as weather, demographic trends and general economic conditions are outside our control. It is important however, that the Zoo fulfils its market to its maximum potential by controlling those factors which it can influence, and there is every indication that this is what the Zoo is doing and will continue to do successfully.

Thus, during 1994, investment in the Zoo continued, ensuring that standards both for our visiting public and for the animals in our care, continued to improve.

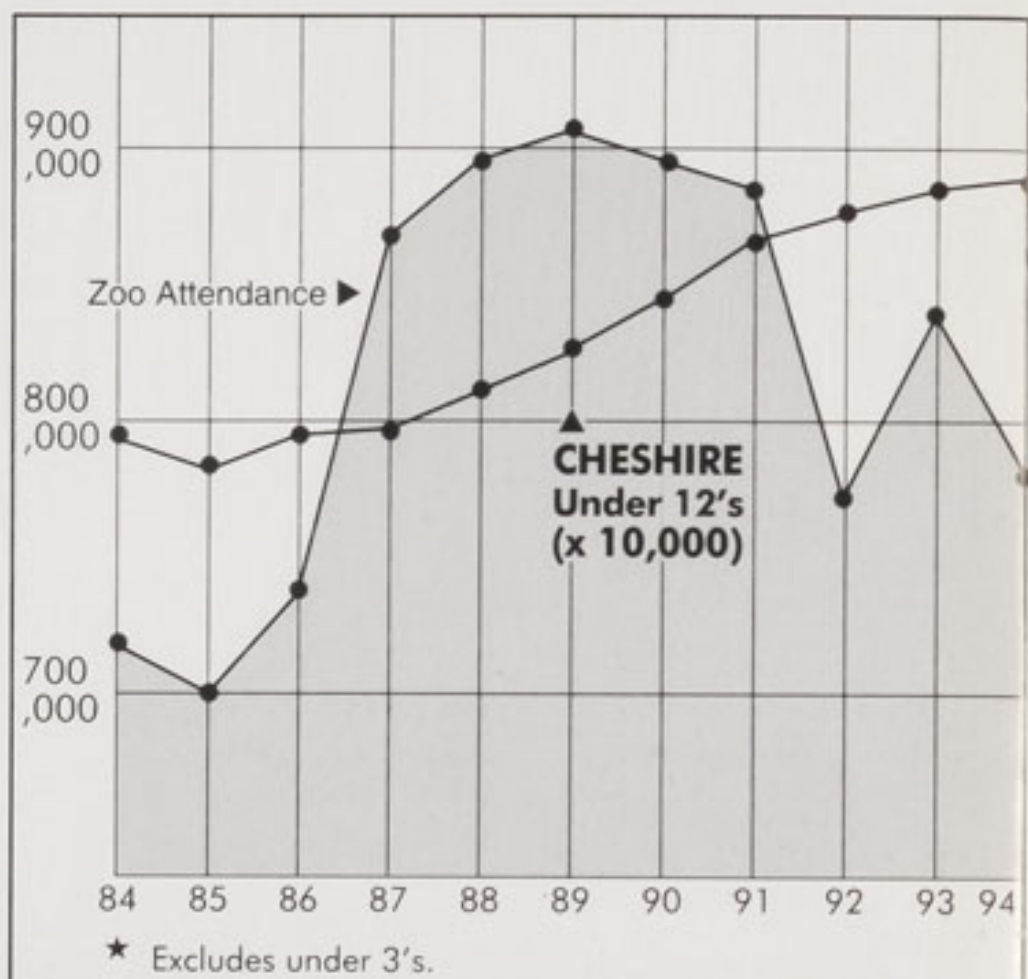
In its 60 year history the quest for excellence has been the driving force of the Zoo's two directors. Both have been men of vision and dedication. George Mottershead founded and developed the Zoo to become a place of innovation in animal management and exhibition policy. Michael Brambell has proved a worthy successor and has pushed the Zoo forward into a new age of conservation awareness, of a more demanding public, and of a more competitive commercial environment. It was thus with regret that we learned of Michael's decision to retire at the end of August 1995.

During his years in office he has stamped the hallmark of excellence upon Chester Zoo by a continuous programme of investment in often uncertain and difficult times. Above all he has strengthened the ethos of dedication to animal welfare. His leadership has confirmed Chester Zoo as one of the great zoos of the world, actively involved in interzoo captive breeding programmes and increasingly involved in a variety of scientific/academic projects. He has succeeded in showing that it is possible to balance the requirements of a scientific organisation with the demands of commercial viability. I know that his good work will be continued under his successor, Dr. Gordon McGregor Reid, who will lead the Zoo into the 21st Century, and to whom I wish every success.

On behalf of all our members I thank Michael and Patricia for their years of dedication to the well-being of the Zoo, and wish them both a long and happy retirement.

Beatrice J. Jones

ZOO ATTENDANCE★



Zoo Director, Dr Michael Brambell presented Dr Jane Goodall with a specially commissioned painting of Boris, the dominant male chimpanzee, by Mr Les Grandy, the Zoo animal artist.



Dr Gordon McGregor Reid, Curator-in-Chief and Director Designate, moves the vote of thanks to Dr Jane Goodall.

Front Cover Picture: Three Asiatic lion cubs were born in July.

The North of England Zoological Society

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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

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

Registered Office: Coughall Road, Chester, CH2 1LH.

Company Registration: Number 287902 (England).

Registered Charity: Number 306077.

Member of
IUCN
The World Conservation Union



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

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 International Union of Directors of Zoological Gardens, the World Zoo Organisation.

ALVA
ASSOCIATION OF LEADING VISITOR ATTRACTIONS

The Zoo is a member of the Association of Leading Visitor Attractions.

Membership as at 31st December 1994

		1993
Life Members	153	161
Honorary Members	6	6
Members of more than 25 years standing and over pensionable age	32	30
Annual Members	4,489	3,756
TOTAL	4,680	3,953
Associate Members	0	3
Junior Members	2,148	1,854
	2,148	1,857
GRAND TOTAL (All categories)	6,828	5,810
	(+17.5%)	

Adoptions as at 31st December 1994

		1993
Adopters	2,211	1,361
Value of Adoptions (net of V.A.T.)	£86,796	£83,551

Staff Professional Representations

Dr. M.R. Brambell Director	Honorary Treasurer, The Federation of Zoological Gardens of Great Britain & Ireland. Member of Council, The Zoological Society of London. (Chairman, London Zoo Board) Member of Council, The Owl Centre, Ravenglass, Cumbria. Member of Scientific Advisory Panel, Jersey Wildlife Preservation Trust.
Dr. G. McGregor Reid Curator-in-Chief	President, British Cichlid Association Fellow of the Institute of Biology. Member of Council, The Linnean Society of London. Member of Council and Conservation Committee, Flora & Fauna Preservation Society. Member of Captive Breeding Specialist Group (IUCN) Member of Fish Specialist Group, World Conservation Union (IUCN). Member of the Joint Management of Species Committee, The Federation of Zoological Gardens of Great Britain & Ireland. Member of European Union of Aquarium Curators.
Dr. R. Wilkinson Curator of Birds	Honorary Research Fellow, University of Keele. Member of Council, the Avicultural Society. Member of the Joint Management of Species Committee, The Federation of Zoological Gardens of Great Britain & Ireland. Member of Pheasant Specialist Group (IUCN/Birdlife/WPA). Member of Committees of the World Pheasant Association and the Congo Peafowl Trust.
Mr. N.G. Ellerton Curator of Mammals	Member of the Captive Care Committee, the Primate Society. Member of Joint Management of Species Committee, The Federation of Zoological Gardens of Great Britain & Ireland.
Miss B.M. Norgain Head of Education	Member of Education Committee, The Federation of Zoological Gardens of Great Britain & Ireland.
Mrs. P. Cade Public Relations Officer	Member of Marketing & PR Committee, The Federation of Zoological Gardens of Great Britain & Ireland. A Director of the North West Tourist Board.

In addition, several staff are Chairmen or members of Taxon Advisory Groups (TAGs), and co-ordinators of European Endangered Species Programmes (EEPs), Joint Management of Species Programmes (JMSPs), or other conservation groups.



Mr. N.G. Ellerton, Mrs. P.A. Rudd and Mr. A.R. Woodward, serve on the N.W. Group committee of the Flora & Fauna Preservation Society as Chairman, Secretary and Treasurer respectively.



Director's Report

Dr. M. R. Brambell Zoo Director

Though the policy of keeping species which are in danger of becoming extinct with the intent to breed them within co-operative programmes is not exclusive, it nevertheless must be the driving force behind the scientifically-based Chester Zoo. The broader educational function of the Zoo implies that a wider range of species is kept and maintained than those already listed as being in danger and this is recognised. Nevertheless, resources are severely limited and spaces for those species which need zoo help if they are to be sure of survival are at a premium across the world.

Priority must be given to conserving species. To those who say that conservation-sensitive species are dull, the question is: Are elephants, rhinoceroses, many of the antelopes, most of the large cats, the great apes, cranes, parrots, cichlid fish, Madagascar tree boas dull? The very species, which most of us have grown up to take for granted, are now the ones which we could soon be losing and it is these which Chester Zoo, and the all too few zoos across the world like Chester Zoo, can best help. This is a repetitive story to which those who detract zoos reply that the best places to conserve are in the wild and who always add the jibe that, in any case, zoos have saved very few species. Of course the best place is in the wild, if there is certainty that that can be done, and of course zoos have not saved very many species, not yet. Perhaps they will not have to be used to save most species but that does not negate their value.

Lifeboats

Much as lifeboats generally do not have to be used, they are there because it is folly not to have them. There is now no certainty that the zoo 'lifeboat' will not have to be used in many cases in the future. The probability is increasing that the role of zoos and related management programmes is going to be the only way that can ensure survival. In 1967 when I joined the zoo-movement there were an estimated 80,000 to 100,000 Black Rhinoceroses in Africa. The estimate now is about 1,500, with only a very few pockets of reasonably protected breeding groups left. A lot of money has been poured into Africa to save the rhinoceros, only some of the projects have shown signs of being able to respond to such help. Virtually no money other than that generated by zoos themselves has gone into providing the 'lifeboat' for rhinoceroses which zoos can provide.

The zoo conservation effort is on a shoe-string. This was tragically underlined by the death of the baby black rhinoceros born at Chester Zoo in November, the second not to survive of Esther's three babies. The cause is not clear, but points to an inadequacy by the mother while she is gestating. By the law of averages not every animal available to the breeding programme will be as fit as desired for the role required for it.

With all too few animals to use, such situations are bound to happen and are bound to be given greater high-lighting. Who now remembers the difficulties encountered in the



Herpetologist Keith Brown with one of the 8 juvenile Tuatara.

early days of Orang-utan breeding in zoos? The odd birth used to be headline news, the problems severely exercised zoo management. Now the majority of Orang-utan births go largely unnoticed and the international zoo lifeboat for that species is well founded. Perhaps, in spite of the setbacks, the Black Rhinoceros story is not so far off becoming a similar one to that of the Orang-utans.

The Animal Division maintained groups from 502 species, 42% of which can be regarded as conservationally sensitive. These produced 704 young in 1994. The sadness is that the two largest of these, the elephant and the rhinoceros, were two which did not survive. The first co-operatively planned breeding of the extinct in the wild Flamehead Cichlid Fish added more than 500 to the number of that species from Lake Victoria now surviving in aquaria, a truly remarkable achievement.

Esteem

1994 saw the arrival, in trust from the people of New Zealand, of eight Tuatara, which are being kept within the Tropical House in a newly designed habitat. It was a mark of the esteem in which this Zoo is held that this

group of animals was allowed to come, under the escort of the Maori chief Ben Hippolite and his wife, Tammy.

Outside of the Zoo itself, the Society is supporting several wild-based projects, albeit with far too little of the resources those projects need. In the Philippines we are supporting the effort to save the Philippine Spotted Deer, *Cervus alfredi*; in Zaire, we are supporting the effort to save the Northern White Rhinoceros, *Ceratotherium simum cottoni*; in Brazil we have been supporting the Buffy-headed Capuchin, *Cebus apella xanthosternus*; in India the zoo-coordinating scheme Zoo Outreach Organisation has been getting help from us and we have been helping the Sangai, *Cervus eldi*. Gordon Reid spent some time advising the Nigerian authorities on the fish population of the Gashaka Gumti National Park.

There are projects in Madagascar involving two Ph.D. research students associated with Chester Zoo. The net cost of all these contributions is still very small compared to the overall turnover of the Society (but much more significant when compared with its capacity to make surpluses).

Membership at the end of 1994 numbered 4680 with voting rights and 2148 juniors. The Society is in good heart, its zoo is underfunded but is performing well both at Chester and abroad. Much work remains to be done.

Nevertheless, approaching the age of 63, I considered it soon to be the right time to step down and make way for younger, more vigorous minds. I requested to be allowed to retire at the end of August 1995 and a search by the Council for my successor got underway. From an international field of applications, Dr. Gordon McGregor Reid, the Curator-in-Chief here at Chester Zoo, was appointed. It is with a great sense of pride and confidence that I will be handing over the reins of the Zoo to such a well-chosen successor.

We are helping the programme in the Philippines to save the Spotted Deer Cervus alfredi.



Dr. Gordon McGregor Reid
in Gashaka Gumti
National Park in Nigeria



The year began with the initiation of a Chairman's 'Think Tank' to identify a broad strategy for the growth and development of Chester Zoo and to confirm the style and image that we intend to project. Reassuringly, the Council and Staff of the Zoo remain convinced that conservation must be at the core of Zoo activities.

The Zoo now keeps and aims to breed from 209 species officially listed as being conservationally sensitive. This represents more than one-third of our total holdings, including (according to IUCN listings), 5 species extinct in nature, 24 highly endangered, 43 vulnerable, 48 species which are otherwise rare and 29 species which are or have been the subject of reintroduction programmes within the zoo community.

Conservation Award

Perhaps the most remarkable conservation story of 1994 was the dramatic recovery of Zoo stocks of the Pacific island snail *Partula varia*, now extinct in nature. More than 30 were bred from a single (hermaphrodite) individual, the last snail in the world! Chester has provided other *Partula* stock for an experimental 'field trial' in a Kew Gardens hothouse, and for a televised reintroduction to small site in Moorea. A Zoo Federation Award has been announced for cooperative work on *Partula*, which recognises the substantial input of Keith Brown and Chester staff to the British team led by Paul Pearce Kelly of London Zoo.

Last, but not least, Penny Rudd has, almost single-handedly, managed a thriving zoo breeding colony of Harvest Mice. These have provided founder stock for the well publicised re-introduction of Harvest Mice into the South of England which is being coordinated by the Natural History Museum.

Conservation Science

Chester was able to provide substantial input to a Federation survey of conservation science in British zoos. For example, Curator of Birds and Research Coordinator, Dr Roger Wilkinson has arranged to act as a Ph.D

supervisor for his assistant Mark Pilgrim. Mark is engaged part-time at Liverpool John Moore's University on a wide-ranging taxonomic study of a species complex of endangered neotropical parrots of the genus *Amazona*. This project involves the analysis of DNA in shed feathers, as a means of establishing the identity and relationships of those species most in need of help.

Roger is also a Ph.D supervisor for Robert Stjernstedt, a Zambian student registered with Manchester Metropolitan University.

Robert is working on the behaviour and ecology of Helmet Shrikes (*Prionops plumata* and *P. retzii*) in mixed feeding flocks in the mlombo woodland of Kasanka National Park. Of particular conservation interest is the fact that, of the two species of Helmet Shrikes being investigated, only *P. retzii* is brood-parasitised by a cuckoo. Alarmingly, this may reduce the reproductive success by as much as 50%.

Ian Mason of Keele University is another of Roger's growing band of Ph.D students. Ian is comparing survival rates and movements of Barn Owls in Staffordshire and Cheshire, following two methods of captive breeding and release. British Barn Owls are not critically endangered, but their numbers have declined dramatically over the past 50 years and some regional populations have become extinct. Chester Zoo is playing a leading role in locally reinstating zoo bred stock to the wild (four owls having been provided this year) but it is now time to scientifically evaluate the success of this programme. In recognition of Dr Wilkinson's scientific contributions he has been elected as an Honorary Research Fellow of the University of Keele.

In February, amid much media publicity, Chester Zoo hosted the first ever international working group meeting on 'frozen zoos' which was attended by leading European scientists. The meeting was funded by the European Community with a view to establishing guidelines for the setting-up of 'gene banks' for rare and endangered animals, mainly using cryobiological (ultra low temperature) techniques for the preservation of sperm and ova.

Conservation in the field

Adam Britt (ex-keeper, now Research Associate of the Zoo) continues his work in Madagascar on a lemur re-introduction programme, in collaboration with the Malagasy authorities, the University of Liverpool and Duke University, U.S.A. Sean Wheeler, a Liverpool John Moore's University Ph.D research student, spent several months diving in Lake Tanganyika, East Africa. He is being supervised by Gordon Reid on a project to study rare goby-like fishes from the 'surf zone'. These fishes are of potential value in monitoring the health of the lake.

Nick Ellerton, Curator of Mammals, continues to work with Dr Caroline McGregor Argo of Liverpool John Moores University and Dr Steve Montford of Front Royal Zoo, Washington, to develop a conservation project for Sangai, the highly endangered Manipur Brow-Antlered Deer. We await approval from the Indian authorities for involvement with their captive bred stocks. There are also plans to bring the Burmese form of Brow-Antlered Deer to Chester to gain knowledge of the reproductive biology in this group.

During March and April, Dr Gordon Reid was seconded from the Zoo to assist WWF and the Nigerian Conservation Foundation with the first ever field study of conservationally sensitive fishes in Gashaka Gumti National Park, the largest wildlife reserve in Nigeria. Gordon was also involved in training programmes for local people. This project was generously supported with scientific equipment donated by the Smithsonian Institution, Washington and by the American Museum of Natural History, New York. In recognition of his research achievements Gordon was elected as a Fellow of the Institute of Biology.

Zoo outreach work

In February, Sally Walker of Zoo Outreach India gave a talk to zoo staff and the Scientific Committee on the valuable conservation work being done in India using funds provided by the Zoo. There is no doubt that great value for money is being obtained. Our 'guaranteed support for three years' outreach policy has been taken-up by other organisations as an example of well-conceived wildlife funding. Certainly, a number of rare animals have benefited from Chester's largesse. The world population of Northern White Rhino is now only 32. Chester Zoo has hence agreed to fund, for three years from 1994, the costs of game guard protection.

Field Project Manager Lucia Lastimososa visited us for two weeks in summer and told us of valuable, Chester assisted, progress made with the highly endangered Philippine Spotted Deer - now up to 46 animals in the world captive herd. We continue to support the International Management and Recovery Plan for Buffy-headed Capuchin, perhaps the world's most critically endangered rainforest primate. We have signed a Memorandum of Participation to breed Buffy-headed Capuchins and await 6 animals from the Primate Centre in Brazil. Finally, the Zoo helps at home as well as abroad and has provided electronic PIT tags (Personal Identity Transponders) for the registration of the total captive population of Scottish Wildcats in the UK breeding programme.



The Animal Collection

Dr. Gordon McGregor Reid
Curator-in-Chief



The 3 Asiatic Lion cubs Jade, Sabu and Rajah were born in July and have become very popular with visitors.

The animal collection is managed for the purposes of conservation (mainly through cooperative breeding programmes), education through exhibition and interpretation, and benign scientific study (non invasive, non intrusive research). These activities are, wherever possible, married with the clear need to maintain the Zoo as an attraction for the many thousands of paying visitors who provide most of our financial support.

Total funds allocated in 1994 to support the animal collection (welfare and management) were £1,267,604. The Division operated at about 3% under budget overall. Costs directly referable to animal welfare are tabulated in the income and expenditure account (p.12). Operating costs were offset to the value of £86,796 (net of V.A.T.) by the 'animal adoptions' sponsorship scheme managed by Maureen Allsopp.

John Hall left the Mammal Department to take up the position of Curator at Knowsley Safari Park. A temporary 'keeper exchange' was organised with Australia and Anthony Dorian from Taronga Park Zoo was swapped with our own Gavin Bouchier.

Changes in the collection

As part of a cooperative management programme, female Asian Elephant Kirsty was transferred to Dublin Zoo and, in turn, we received female Jangoli from Flamingoland. Male Black Rhino Parky went to Howletts Zoo on a short term breeding loan. The African Lions are no longer in the collection. We now have a pair of rare Asian Lions which came from London Zoo and which, to everyone's delight, have produced three healthy cubs. Male Persian Leopard Thomas went to Zoo Doue la Fontaine in France. To ease the damage being done to paddock surfaces, the Eland went to Knowsley Safari Park and were replaced by lighter Sitatunga from Belfast Zoo. A Sealion birth was a very welcome addition to the collection.

Chimpanzee Mandy produced baby Zee Zee and mother and daughter are doing well.

Similarly, Bornean Orang-utan Kibriah produced healthy female Maliku, the seventeenth born at Chester!

A long-awaited pair of Great Grey Owls arrived from Helsinki Zoo to settle well in the spacious new aviaries. Endangered Stanley Cranes were acquired from Harewood Bird Gardens and Whipsnade Zoo, and Blyth's Tragopan from the World Pheasant Association. White Pelicans arrived from Tierpark Berlin and they greatly enhance the collection. The breeding of rare cichlid fishes was so successful that a group of Otjikoto Tilapia were sent from Chester to New York Zoo to support the Desert Fishes Programme and Flamehead Cichlids were sent to St. Louis Zoo for use in the Lake Victoria Species Survival Programme.

Rare Madagascan Tree Boas came from Jersey Zoo to form a breeding group. A crowning achievement was the arrival, with a media fanfare, of the 'living dinosaurs': actually 8 juvenile Tuatara on a long-term breeding loan, courtesy of the New Zealand Government and the Maori people.

Collection care and management

Under the terms of the Zoo Licensing Act, a team of independent inspectors and environmental health officers satisfactorily surveyed all of our animal operations in October. The Scientific Committee of the Zoo Council has been re-organised. Among other concerns, the Committee monitors the veterinary status of the collection and human and animal health and safety. A revised Health & Safety Policy has been drawn up by the Society to cover critical areas, including precautions for the use of firearms in the Zoo in emergencies and the secure housing of these firearms.

Veterinary care. The loss of a rare Black Rhino calf in November was the saddest event of the year and the Zoo has conducted a thorough veterinary and animal husbandry review to see what lessons can be learned. Outbreaks of *Campylobacter* infection among hoofstock were a cause for concern and, from this, plans were drawn up for improved accommodation and hard standings to create

more favourable conditions for overwintering Red Lechwe and Zebra. Outline planning approval was received by MAFF for a new, improved Quarantine Station to be located near to the Zoo.

The total number of clinical cases presented during the year was 492 comprising 255 Mammals, 221 Birds and 16 Reptiles. Follow-up treatments brought the total number of attendances by the Veterinary Officer to 1624. This figure does not include weekly visits for the purpose of elephant phlebotomy (to study endocrine function and vitamin E status). Anaesthesia, immobilisation or sedation was carried out on 115 occasions.

This year, 320 post-mortem examinations were carried out. This figure has been subdivided into three groups, in two classes (refer to table below).

Supplies. More than 840 tonnes of food and bedding were supplied to the animals (see box p.21, for details). Plans were developed for the eventual relocation of the Animal Supplies Department to a site within the zoo perimeter. Major improvements were made in the mechanised handling of foodstuffs, mainly through the acquisition of a forklift truck.

Table: Post-mortem examinations 1994.

	A	B	TOTAL
MAMMALS	62	56	118
BIRDS	120	59	179
REPTILES	21	2	23
TOTALS	203	117	320*

The figures in column 'A' refer to those animals which were resident in the collection for more than 30 days; column 'B' refers to those animals which were less than 30 days in the collection and includes births in the collection and specimens acquired from outside sources.

* From a total of 320 carcasses submitted for post-mortem examination, 63 had been destroyed for humane reasons.



Communications & documentation.

Increasingly, livestock monitoring and the cooperative arrangements made between zoos depend upon sophisticated computerised documentation. Herpetologist and Computer Analyst, Keith Brown, made great strides in rationalising and upgrading computer systems throughout the zoo. Much progress was made in collaboration with the Department of Computer Science, University of Liverpool, in laying the foundations for a multimedia Public Information System which will incorporate text, sound and still and moving images.

Display & interpretation

The Cheshire County Council Employment Training Team again provided substantial assistance to Estates and Animal Division staff. The large Owl Aviary complex, near the Oakfield building, was completed and so were major redevelopment works in the Tropical House, including the replacement of all of the ground floor aviaries. Vine-effect backdrops and tree models were also installed here to generally enhance the area in places where there is not sufficient light for natural plant growth. A lovely new Tuatara exhibit was completed for a grand opening.

More than 3000 items for educational interpretation were delivered, made or commissioned during the year (refer to box insert). Twenty-four large-scale interpretation panels were installed including a series of high profile animals at the zoo entrance and a lovely 'How do you measure up to a life-size Ostrich?' panel next to their enclosure. A prototype panel for Black Vulture was set beside the Europe on the Edge aviary. Experiments with computerised desk-top publishing systems allowed us to create a prototype weatherproof panel for the Mauritius Kestrels exhibit. Signboards were placed in the Parrot House on behalf of the World Parrot Trust. The Elephant and Orang-utan interpretation was updated. A footprint 'fun trail' was painted in the elephant area. Interactive 'zoo keepers wheels' were fixed at several locations and are much enjoyed by the public.

Events, talks and meetings

Professor Bernard Wood delivered a fascinating lecture on 'man and apes' for President's evening. Staff appeared in several television programmes which featured the Zoo, such as the BBC's 'Playdays'. A reunion was held for the staff of Shavington Zoo which was the Crewe-based precursor of Chester Zoo. The event was attended by Mr Hancock, the

first keeper to transfer with Mr George Mottershead to the new site at Upton. In April, Gordon Reid presided over an Institute of Biology meeting in the Lecture Hall, where prizes were awarded for the best scientific posters that were shown. In May, Jane Goodall delivered the 60th Anniversary Lecture at the Zoo. She was presented with the Gold Medal of the North of England Zoological Society for her lifetime achievements in the study of Chimpanzee social behaviour.

The Fish and Aquatic Invertebrate Taxon Advisory Group (TAG) held a Conservation Workshop and the first meeting of the Tadpole Shrimp Conservation Group took place. The zoo also hosted no less than eight bird TAG meetings and the Elephant TAG and Workshop.

Training

Fifteen students attended the numerous training sessions offered under our Zoo Animal Management Course which is taught by zoo staff and associates. Organised through the National Extension College, this two year programme leads to a City & Guilds Certificate to be examined in 1995. Aquarists Mike Crumpler and Justin Bell received training in special livestock management techniques at the Institute of Aquaculture, University of Stirling. Nick Ellerton, Neil Spooner and Charlie McKenzie of the Mammal Department attended an ARKS computerised zoo documentation course at Oxford Brookes University, while Dr Roger Wilkinson and Mark Pilgrim of the Bird Department went on a two week study tour of North American Zoos.

About 30 outside volunteers (many of them advanced students of biology or veterinary medicine) gained practical work experience on the animal sections in an important scheme organised by Personnel Officer, Penny Rudd. Similarly, dozens of undergraduate and postgraduate university students engaged on specific research projects with the kind assistance of Zoo staff.

Scientific publications

Zoo staff and associates continue to produce numerous good quality publications in a wide range of topics. For example, staff contributions were made to a special publication on Conserving West African Wildlife by Nick Ellerton & Niall Ormerod (Chimpanzees); Keith Brown & Isolde McGeorge (Royal Python); Roger Wilkinson (Crowned Crane) and Gordon Reid (Fishes). Mammal Section Coordinator, Neil Spooner and Avicultural Deputy, Mark Pilgrim delivered papers at the EEP Congress on Research and Captive Propagation, Erlangen, Germany. Mammal keeper Ray Packwood has been particularly active in preparing studies on small mammals for our *Animal Notes* series. University biologists continue to use the collection as a focus for their published research. See, for example, the cited study by Smith & Wootton (1994) from University College, Bangor, Wales. Also cited, are some representative degree theses prepared by students from universities in the North West.

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Britt, A. (1994) Report on fieldwork on Ruffed Lemur (*Varecia variegata*). North of England Zoological Society.

Brown, K.B. & McGeorge, I. (1994) The plight of Royal Pythons (*Python regius*), pp. 13-14 + 3 figures. In Tuley, P. (ed.) *Wildlife Conservation in West Africa. Proceedings of a biennial symposium of the Nigerian Field Society (UK) held in association with World Wide Fund for Nature (UK)*. Nigerian Field Society (UK) Occasional Paper (1).

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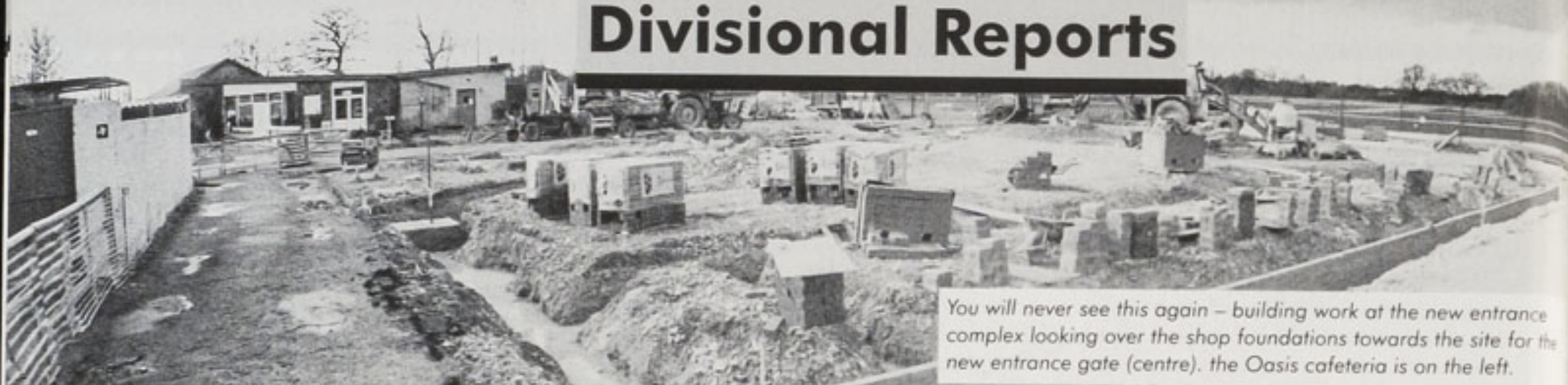
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ARCHIVE COPIES OF ARTWORK Copied, filed and indexed 1994.

MAMMALS	267	10 or more years ago, colour copying was not widely available, was of poor quality and expensive.
BIRDS	720	
REPTILES & AMPHIBIANS	177	
INVERTEBRATES	29	
FISH	497	
ADOPTIONS	116	
VARIOUS	15	
TOTAL	1821	Total copy archives held at end of 1994.

Divisional Reports



You will never see this again – building work at the new entrance complex looking over the shop foundations towards the site for the new entrance gate (centre), the Oasis cafeteria is on the left.

Estates

Work is underway on the new Main Entrance, close to the Oasis cafeteria, on the northern side of West Zoo. In the near future, there will be direct access to the Zoo from the A41 trunk road from the new roundabouts that lead to the Upton Park and Ride car park, via our new 150 metre link road. This leads to tarmac coach and car parks, with a capacity for 60 coaches and 600 cars. Additional overflow parking will be created.

Construction of the new entrance complex is well under way and should be ready to accept visitors between Easter and Whitsuntide 1995.

Other 1994 projects included:

- Tropical House aviaries (see right)
- Elephant house effluent treatment plant
- Oasis cafeteria refurbishment
- New Tuatara exhibit within the Tropical House
- Tree survey of the 1800 trees within the zoo
- Upgrading the lighting in the Jubilee Cafeteria
- New sewage treatment plant and many minor works.

The Gardens department were busy, collecting the 1st prize for the North West Britain in Bloom – receiving the award at the Southport Flower Show, as well as winning a special award in the Chester in Bloom competition. We have bought an additional polytunnel to replace old frames, which gives us valuable extra space for the 160,000 bedding plants raised each year.

The Groundstaff have maintained the grounds to a high standard throughout the year and have an intensive winter maintenance programme refurbishing pushchairs and wheelchairs, picnic benches and seats and gutters around the zoo.

Our best wishes go to Jim Whitby, the full time First-Aider who has retired after 9 years service. We welcome Peter Bartley as Plant and Transport Engineer, responsible for maintaining the Zoofari overhead railway, vehicles, lifting equipment and electrical plant.

Mr S. O'Brien.

Education

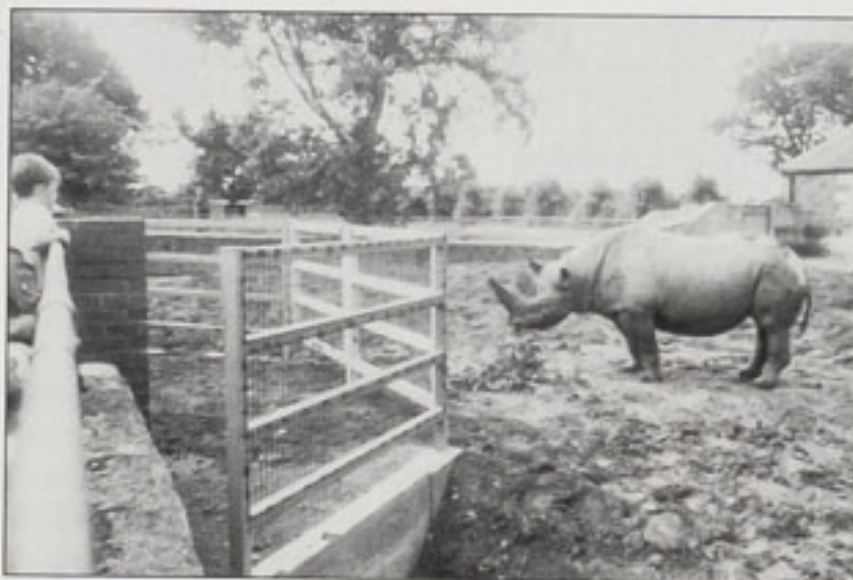
There was a small but welcome increase in education visits (1.5%) compared with 1993. Over 400 teachers and student teachers attended courses or planning meetings with Education officers.

Work in the Economic and Industrial Understanding section of the National Curriculum

Centre: The rhinoceros level crossing, built by Estates staff.

Right: New aviaries in the Tropical House, built by Cheshire County Council Employment Training team.

Below: The sheer magic of the FEDs in the Christmas Journey at Children's Farm.



developed well thanks to links with the Industry, Business and Education service from Ellesmere Port.

One year appointments (Ann Macaulay, 1993 – 94 and Jean Atkin 1994 – 5) facilitated the development of 'zoo visit based' school work programmes in English and French.

Volunteers gave nearly 10,000 hours of labour. Eighty thousand visitors benefited directly from their efforts: and many more indirectly through office work providing material for schools. Since our volunteers began in July 1985, grand totals show over 80,000 hours of work, contact with over 500,000 visitors and takings of over £55,000 (in addition to Christmas Journey takings).

Our insistence on the training of leaders and the introduction of a deposit system undoubtedly contributed to the improved educational value of many of the daytime Christmas Journeys. The evening Christmas Journeys brought visitors from as far as Norfolk, Suffolk, Southampton and Barnard Castle.

We are most grateful to North West Securities for their generous gift which will provide a new 'Lets' Make Centre' at a more appropriate site.

Miss B. M. Norgain.

Finance and Administration

The Division has continued to improve and extend its use of information technology to enhance the control and recording of all the financial transactions of the Society and the trading subsidiary. We have installed further improved software applications, upgraded hardware and put in new machines to widen our levels of control of both accounting and non-accounting functions.

Networking has been introduced to the computers in Animal Division following its successful use in the Accounts office for many years. We are making more use of modems for communications between computers. Our membership and adoptions records are being upgraded to a much improved system.

We have tested modem ticket issuing procedures and are now in a better position to install improved equipment at the new entrance in 1995.

Mr E. A. Du Cros.

■ **Top:** 'Why Bird' interviews Senior Ape keepers Steve Hogarth and Ross Meredith for 'Playdays'.
Lower pictures: Junior members enjoy the Contact session (left) and Day with a Keeper (right and lower right)

Marketing

Highlights of the Diamond Jubilee year included the presentation of the Society's first gold medal to Dr Jane Goodall on 26th May, and the 13th June Birthday with a morning of 1934 admission prices. We sold Wall's ice cream at 1p per cornet ("don't bother with change, I'll take five" said one youngster). There were some enthusiastic song and dance routines by local schools in bright sunlight on the Jubilee lawn (see page 18). The re-union of members of staff of the Shavington "proto zoo" was most ably organised by Society member Gwyn Griffiths on 16th May, (see page 10).

We issued our first postage stamps (a sell out), produced a new zoo tie (also a sell out) and began face painting and selling soft ice cream. Hannah Lawson's cheerful animal paintings brightened up the bridge approach and children's play area and the footprints intrigued younger visitors to the elephant house. Her conservation map mural in the indoor picnic area continues to attract great attention.

The Oakfield had an excellent year for function bookings, thanks to Richard Casson, Lesley Bell and Jane Lawson and the highest level of Christmas bookings to date. All departments exceeded budget sales targets

Yet again, we are in debt to Jean Dixon and Pauline Mckee for their first class help with the photographic competition and to Canon, Stena Sealink, Bridgemere Garden World, Ness Photo Laboratories and Hargreaves for a range of splendid prizes.

Television appearances included "Beat That Einstein", "Why did the chicken", "Playdays", "Wish you were here", "Growing up wild", "The Really Wild Show Guide to Britain" and "Wise Up", plus frequent weather slots with Fred Talbot of Granada TV.

We made four new TV commercials - including "new arrivals" Maliku (Orang utan) and Ariel (Sea lion) in the summer.

Membership is at its highest ever, and we are grateful to Maureen Allsopp, Mary McManus and Keith Brown for remaining calm and collected during the introduction of the new rolling membership computer programme.

The three Asiatic lion cubs enthralled visitors and, yet again, Father Christmas and the reindeer were impeccable.

In all - a better than average year!

Mr C. M. N. Vere

Membership & Adoptions

The introduction of "rolling membership" has brought greater interest, and we added over 1,000 members (all categories) in the year (a gain of 17.5%). Members' meetings were well attended - with a highlight being the joint presentation by Ape keepers Ross Meredith and Steve Hogarth, which was repeated for the Adopter days. We ran a members' survey asking for ideas for members' events - and this is being actioned by the restructured Membership committee. The Members' raffle - which raised funds for



scholarships - was well supported, and the 100 Club gives a much greater chance of a prize than the National Lottery!

There has been a welcome surge in **personal** adoptions - with net income of £86,796 from 2,211 wonderful adopters. We are very grateful indeed to personal and corporate adopters: your reward is knowing that you have made an important contribution to the welfare of the animals.

Mrs M. M. A. Allsopp

Junior Club

The Juniors enjoyed 1994

Many youngsters took part in a variety of events which ranged from the old favourites like the Contact Session in January, Tracks and Signs in March - when everyone took home a plaster cast of a footprint - and the Christmas party. New events included the visit to Cholmondeley Castle and Farm in April. Also there was an exciting opportunity for Juniors to visit the Freshwater Biological Association's headquarters in Windermere in November. Here, Juniors were allowed to use the electron microscope and see the fish counting station, amongst a myriad of other fascinating things on the extensive tour.

Our visit to Twycross Zoo in February will go down in history as the "eight counties" tour as problems with the bus involved returning from



Warwickshire via Yorkshire in the deep snow! The weather was also wet for our visit to the Chestnut Centre in Derbyshire in May, but even this did not spoil the wonders to be seen there, including the rare Giant Otters. In June, the Juniors packed in a full day on Anglesey, visiting the Sea Zoo, Butterfly Palace and enjoying a boat trip around Puffin Island. Moth trapping in the Zoo in August and the search for rare Natterjack toads and Red Squirrels in Ainsdale and Freshfields Reserves on the Sefton coast in September brought us to the autumn. In October we went to Tatton in time for the Red Deer rut where Rangers gave Juniors the rare chance to go into the off-show deer enclosure within the Park.

Another action packed year for this enthusiastic group. Our thanks to staff, helpers and Juniors for making it all happen!

Mrs P. A. Rudd, Junior Club Leader

Council Committees & their Terms of Reference

FINANCE COMMITTEE (including TRUST FUND)

MEMBERS

Mr. A.R. Barnes (Chairman)	Dr. M.R. Brambell (Director)
Mr. J.H. Howatt	Mr. E.A. Du Cros (Staff)
Mrs. B.J. Jones	Mr. A.R. Sykes (Staff)
Mr. G.K. Jump	Mr. C.M.N. Vere (Staff)
Mr. N.J.W. Wilson	

Recommends financial policy to Council. This includes reviewing pricing policy, revenue and capital budgets, long term forecasts, long and short term borrowing and lending, the allocation of financial surpluses and, at least annually, to meet with the external Auditors to discuss audit findings.

REMUNERATION COMMITTEE

MEMBERS

Mrs. B. J. Jones (Chairman) Mr. J. H. Howatt
Mr. A. R. Barnes

Determines remuneration and conditions of service of the Director, Deputy Director and other Heads of Division.

PROGRAMME COMMITTEE

MEMBERS

Mr. J.H. Howatt (Chairman)	Mrs. E.M. Livingstone
Dr. J.R. Baker	Dr. M.R. Brambell (Director)
Miss J. P. Dixon	Miss B.M. Norgain (Staff)
Mrs. J.R. Jardine	Dr. G. McGregor Reid (Staff)
Mrs. B.J. Jones	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.

PENSION FUND

TRUSTEES

Dr. M.R. Brambell (Chairman)	Mrs. B.J. Jones
Miss J.P. Dixon	Mr. T. Williams
Mr. E.A. Du Cros (Staff)	

ASSESSORS

Mr. M.J. Fairclough	Mr. P. Challons
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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.

SCIENTIFIC COMMITTEE

MEMBERS

Mr. B.H. Coles (Chairman)
Dr. J.R. Baker
Dr. J.E.D. Charles-Jones
Dr. D.A.P. Cooke
Mr. D.B. Edwards
Mr. B. Livingstone
Dr. J.S. Madden
Mr. N.K. Maybury
Mrs. M.C. Parslow
Mr. P.J. Wisniewski

STAFF

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

CONSULTANTS

Mr. D.G. Lyon	Mr. N. Walker
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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 - 1994

Advertising Agency
Auditors
Bankers
Consultant Engineers
Environmental Consultants
Insurance Advisors
Interpretation Consultants

Land Agents

Williams Barber & Bird, Liverpool.
Coopers & Lybrand, Liverpool.
Barclays Bank plc., Chester.
Giffords, Chester & Southampton.
Caldicott Morgan, Mold.
Lowndes Lambert UK Ltd., Manchester.
Mr. M.F. Coupe, Heswall.
Mr. G.L. Grandy, Heswall.
Miss H. Lawson, Meols.
Turtle Graphics, Southampton.
Mr. C. Tudge, London.
Denton Clark & Co., Chester.

Legal Advisors:

General Matters
Employment Law &
Contract Law
Company Law
Market Research Consultants
Medical Advisor (Honorary)
Pension Fund:
Actuaries
Fund Managers
Planning Consultants
Quantity Surveyors
Veterinary Advisors

Bremner, Sons & Corlett, Chester.

Mace & Jones, Liverpool.
Walker, Smith & Way, Chester.
John Arden Associates, Manchester.
Dr. H. Charles-Jones, Chester.

William M. Mercer Ltd., Liverpool.
Fraser Green Ltd., London.
Cluttons, London.
Davis, Langdon & Everest, Chester.
The Gatehouse Veterinary Hospital,
Rossett. University of Liverpool
Veterinary Field Station, Leahurst.

The reunion for former members of staff of the Shavington "proto zoo", organised by Society member Gwyn Griffiths.



Our second venture into the world of philately - thanks to Runcorn based Local Post - this special issue may be used for postage of letters to any part of the world.



REPORT OF COUNCIL FOR THE YEAR TO 31ST DECEMBER 1994

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. There was no significant change in the principal activity of the Society during the year.
2. The Society had a satisfactory financial performance in 1994, with the impact of a fall in visitor numbers being outweighed by an increase in the amount spent by each. The results for the year are set out in detail on pages 12 to 17. The state of the Society's affairs at the date of the balance sheet was considered satisfactory.
3. Details of changes in the fixed assets are shown in note 10 to the accounts.
4. Members of Council, who have all served throughout the year, are listed on page 3.
5. Afford Bond resigned as auditors of the Society and its subsidiary company with effect from 17 October 1994. Coopers & Lybrand were appointed by Council to act as auditors until the end of the next annual general meeting. They have signified their willingness to be re-appointed auditors and a resolution to that effect will be proposed at that meeting.

Approved by Council and signed on its behalf:

.....
MICHAEL R. BRAMBELL Secretary
 31 March 1995

STATEMENT OF COUNCIL'S RESPONSIBILITIES IN RELATION TO FINANCIAL STATEMENTS

Members of Council are required by UK company law to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the Society and of the group as at the end of the financial year and of the surplus or deficit of the group for that period.

In preparing those financial statements, Council is required to:

- select suitable accounting policies and apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Society will continue to operate.

Council is responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the Society and of the group and to enable it to ensure that the financial statements comply with the Companies Act 1985 and applicable accounting standards. It is also responsible for safeguarding the assets of the Society and of the group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

AUDITORS' REPORT TO THE MEMBERS OF THE NORTH OF ENGLAND ZOOLOGICAL SOCIETY

We have audited the financial statements on pages 12 to 17.

Respective responsibilities of Council and auditors

As described above the Society's Council are responsible for the preparation of financial statements. It is our responsibility to form an independent opinion, based on our audit, on those statements and to report our opinion to you.

Basis of opinion

We conducted our audit in accordance with Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by Council in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Society's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement whether caused by fraud or other irregularity or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion

In our opinion the financial statements give a true and fair view of the state of affairs of the Society and of the group at 31 December 1994 and of the surplus and cash flows of the group for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

COOPERS & LYBRAND

Chartered Accountants and Registered Auditors
 LIVERPOOL
 31 March 1995

CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR TO 31ST DECEMBER 1994

CONTINUING OPERATIONS:	NOTES	1994		1993	
		£	£	£	£
TURNOVER	3		5,780,859		5,606,162
Direct costs					
Catering		1,055,163		973,336	
Souvenir shops		554,704		528,184	
Monorail system		264,076		233,068	
Animal welfare		1,011,888		940,404	
Garden upkeep		232,693		223,885	
			<u>(3,118,524)</u>		<u>(2,898,877)</u>
			2,662,335		2,707,285
Indirect costs					
Maintenance		485,858		464,054	
Other operating expenses		1,805,379		1,575,935	
			<u>(2,291,237)</u>		<u>(2,039,989)</u>
OPERATING SURPLUS	4		371,098		667,296
Net Profit on sale of fixed assets			14,585		68,689
Transfer from capital expenditure grants			<u>3,677</u>		<u>7,554</u>
SURPLUS BEFORE INTEREST			389,360		743,539
Interest receivable	7		949		783
Interest payable	8		<u>(131,947)</u>		<u>(158,111)</u>
SURPLUS ON ORDINARY ACTIVITIES			258,362		586,211
EXCEPTIONAL ITEM					
Corporation tax – prior years	9		<u>-</u>		<u>(225,000)</u>
NET SURPLUS FOR THE YEAR			258,362		361,211
Accumulated surplus brought forward			1,558,617		1,197,406
ACCUMULATED RESERVES CARRIED FORWARD		£	<u><u>1,816,979</u></u>	£	<u><u>1,558,617</u></u>

There is no material difference between the result disclosed above and that on an unmodified historical cost basis.

The Society has no recognised gains or losses other than the net surpluses above and therefore no separate statement of total recognised gains and losses has been presented.

The notes on pages 15 to 17 form part of these financial statements.

	NOTES	SOCIETY		CONSOLIDATED	
		31.12.94 £	31.12.93 £	31.12.94 £	31.12.93 £
FIXED ASSETS					
TANGIBLE ASSETS	10				
Freehold property		574,900	487,841	574,900	487,841
Buildings and enclosures		2,017,871	1,850,891	2,017,871	1,850,891
Monorail system		884,628	1,030,613	884,628	1,030,613
Machinery and equipment		392,494	374,755	447,054	392,740
Animals		1,000	1,000	1,000	1,000
		3,870,893	3,745,100	3,925,453	3,763,085
INVESTMENT IN SUBSIDIARY COMPANY	11	100	100	-	-
CURRENT ASSETS					
Stocks	12	55,217	47,831	227,742	193,883
Debtors	13	235,341	176,127	134,539	150,588
Cash at bank		10,269	374	17,964	374
Cash in hand		28,553	23,054	54,395	66,995
		329,380	247,386	434,640	411,840
CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR					
Bank overdraft	14	1,204,327	1,151,338	1,204,327	1,156,762
Obligations under finance leases		184,888	187,045	184,888	187,045
Trade creditors		145,956	109,993	219,516	175,344
Corporation tax	9	37,500	37,500	37,500	37,500
Other taxes and social security costs		45,822	41,509	120,871	143,206
Other creditors		10,557	16,542	13,137	17,292
Accruals		41,666	38,739	50,197	47,856
		1,670,716	1,582,666	1,830,436	1,765,005
NET CURRENT LIABILITIES		(1,341,336)	(1,335,280)	(1,395,796)	(1,353,165)
TOTAL ASSETS LESS CURRENT LIABILITIES		2,529,657	2,409,920	2,529,657	2,409,920
CREDITORS: AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR					
Finance leases – net obligations due from 2 to 5 years		335,378	503,067	335,378	503,067
Corporation tax – due from 2 to 5 years	9	150,000	150,000	150,000	150,000
Corporation tax – due after more than 5 years	9	-	37,500	-	37,500
		485,378	690,567	485,378	690,567
NET ASSETS		£ 2,044,279	£ 1,719,353	£ 2,044,279	£ 1,719,353
RESERVES					
Income and expenditure account		1,816,979	1,558,617	1,816,979	1,558,617
Trust fund	15	227,300	160,736	227,300	160,736
FUNDS EMPLOYED	16	£ 2,044,279	£ 1,719,353	£ 2,044,279	£ 1,719,353

The notes on pages 15 to 17 form part of these financial statements.

The financial statements on pages 12 to 17 were approved by Council and were signed on its behalf by:

.....
BEATRICE J. JONES Chairman of Council
31 March 1995

CONSOLIDATED CASH FLOW STATEMENT FOR THE YEAR TO 31ST DECEMBER 1994

	NOTES	1994		1993	
		£	£	£	£
OPERATING ACTIVITIES					
Operating Surplus		371,098		667,296	
Depreciation charges		461,342		412,595	
Amortisation of Capital Grants		(10,287)		-	
(Increase)/Decrease in stocks		(33,859)		22,987	
Decrease/(Increase) in debtors		16,049		(60,780)	
Increase in creditors due within 1 year		21,138		3,448	
Net cash inflow from operating activities			825,481		1,045,546
RETURNS ON INVESTMENTS AND SERVICING OF FINANCE					
Interest received		949		783	
Interest paid - bank and other		(63,836)		(91,290)	
Interest paid - finance leases		(69,226)		(69,535)	
Net cash outflow from returns on investments and servicing of funds			(132,113)		(160,042)
TAXATION - Not ordinarily applicable.					
Net cash outflow from taxation			(37,500)		-
INVESTING ACTIVITIES					
Receipts of capital expenditure grants		239,315		7,554	
Receipts from disposal of tangible fixed assets		54,936		80,968	
Payments to acquire tangible fixed assets		(889,412)		(407,377)	
Net cash outflow from investing activities			(595,161)		(318,855)
NET CASH INFLOW BEFORE FINANCING					
LESS: FINANCING					
Receipts of donations and legacies	1	66,564		22,831	
Repayments of finance leases		(169,846)		(171,386)	
Net cash outflow from financing			(103,282)		(148,555)
CASH AND CASH EQUIVALENTS					
(Increase) / Decrease in bank overdraft	2	(47,565)		375,865	
Increase in cash in hand and at bank		4,990		42,229	
(DECREASE)/INCREASE IN CASH AND CASH EQUIVALENTS		£	(42,575)	£	418,094

NOTES TO THE CONSOLIDATED CASH FLOW STATEMENT FOR THE YEAR TO 31ST DECEMBER 1994

	31.12.94	31.12.93	Movement
	£	£	in 1994
			£
1. ANALYSIS OF CHANGES IN FINANCING DURING THE YEAR			
Donations and legacies	227,300	160,736	66,564
Finance leases	520,266	690,112	(169,846)
Total financing	£ 747,566	£ 850,848	£ (103,282)
2. ANALYSIS OF CHANGES IN CASH AND CASH EQUIVALENTS DURING THE YEAR			
Bank overdraft	(1,204,327)	(1,156,762)	(47,565)
Cash at bank and in hand	72,359	67,369	4,990
Total net cash and cash equivalents	£ (1,131,968)	£ (1,089,393)	£ (42,575)

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1994

1. ACCOUNTING POLICIES

The following accounting policies have been applied consistently in dealing with items which are considered material in relation to the Society's financial statements.

- (a) **Basis of Accounting.** The financial statements have been prepared in accordance with applicable accounting standards in the United Kingdom under the historical cost convention.
- (b) **Basis of Consolidation.** The consolidated income and expenditure account and balance sheet include the financial statements of the Society and its subsidiary undertaking made up to 31 December 1994. Intra-group sales and profits are eliminated fully on consolidation.
- (c) **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. For insurances purposes, the Zoo buildings and house properties are valued at £7,546,008 replacement cost.
- (d) **Freehold 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 the 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.
- (e) **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. Grants are amortised at a rate equal to the depreciation rate applied to the asset to which they relate.
- (f) **Animals.** No annual assessment is made of the value of the animal collection. It is valued consistently at a nominal sum and not depreciated. Purchases and sales during the year are treated as revenue transactions.
- (g) **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.
- (h) **Stocks.** Stocks are valued on a basis consistent with that used in previous years at the lower of cost and estimated net realisable value.
- (i) **Turnover.** Turnover represents cash and invoiced amounts of admission charges, goods sold and services provided (stated net of Value Added Tax).
- (j) **Pensions.** The Society operates a voluntary pension scheme covering the majority of permanent employees providing benefits based on final pensionable pay. The assets of the scheme are held in trustee administered funds completely independent of the Society's finances. Contributions to the scheme are charged to the income and expenditure account so as to spread the cost of pensions over the employees' working lives with the Society.
- (k) **Property Sales.** Profit on sales of land and buildings consists of the difference between the net amount realised and the sum of cost and subsequent additions and is reported separately on the face of the income and expenditure account in any year where a sale has occurred.

2. STATUS

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. The Society is registered with the Charity Commission No. 306077. As a registered charity, The North of England Zoological Society is entitled to claim exemption from the charge to tax on income and chargeable gains at Section 505 Income and Corporation Tax Act 1988 and Section 256 Taxation of Chargeable Gains Act 1992. In the opinion of Council no corporation tax liability arose in respect of the Society's activities in the year.

3. TURNOVER

The turnover is attributable as follows:-

	1994	1993
	£	£
Admission charges	2,896,608	2,769,687
Catering receipts	1,446,144	1,420,410
Souvenir receipts	852,562	825,109
Monorail receipts	227,383	237,445
Motor boat trips	32,331	35,955
Zoo guides	118,965	125,862
Members' subscriptions	101,885	92,731
Property rents	29,235	28,671
Sundry income	75,746	70,292
	<u>£ 5,780,859</u>	<u>£ 5,606,162</u>

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR TO 31ST DECEMBER, 1994 (continued)

4. OPERATING SURPLUS

	1994 £	1993 £
This is after charging:-		
Auditors' remuneration – audit [Society : £ 7,230 (1993 £ 8,350)]	10,900	12,250
– non-audit	5,250	2,690
Depreciation	461,342	412,595
Hire of equipment	5,970	3,178
Operating lease rentals – plant and equipment	2,588	3,295

As permitted by Section 230 of the Companies Act 1985 the Society's results are included in the Consolidated Income and Expenditure Account and no separate income and expenditure account is presented. The Society's surplus for the financial year, determined in accordance with the Companies Act, was £258,362. (1993; £361,211)

5. DIRECTORS

The members of Council, being charity trustees, received no remuneration. (1993; Nil)

6. EMPLOYEES

Aggregate staff costs.

Wages and salaries	2,352,559	2,196,053
Social security costs	206,183	201,399
Other pension costs	116,085	110,966
	<u>£ 2,674,827</u>	<u>£ 2,508,418</u>

Number of persons employed.

The average (full time equivalents) throughout the financial year was as follows:-

	Permanent	Temporary	Permanent	Temporary
Keeping	56	1	55	1
Maintenance and gardens	51	13	51	11
Education	4	–	5	–
Publicity and fundraising	6	–	6	–
Catering and shops	18	43	19	39
Administration	20	3	22	3
	<u>155</u>	<u>60</u>	<u>158</u>	<u>54</u>

Pensions.

Pension contributions are determined by a qualified actuary on the basis of triennial valuations using the projected unit method. The assumptions which have the most significant effect on the results of the valuations are those relating to the valuation rate of interest (9% pa.) the rate of future salary inflation and future increases in Lower Earnings Limit (7% pa.) the rate of future pension increases (4% pa.) and the rate of future dividend growth (5% pa.). The most recent valuation was at 31 December 1993 which showed that the market value of the scheme's assets was £1,973,000 and that the actuarial value of those assets represented 102.3% of the benefits that had accrued to members, after allowing for an increase in pensions, in line with the increase in the Retail Price Index, with effect from 1 January 1995.

The contributions made to the scheme have been:

	To 31 December 1994		From 1 January 1995	
	Members	Society	Members	Society
6% Contributory members	6.0%	14.6%	6.0%	19.3%
3% Contributory members	3.0%	6.7%	3.0%	8.2%
Non-Contributory members	Nil	2.3%	Nil	2.2%

The actuary has given it as his opinion that, provided contributions continue at the revised rates as set out above, the next actuarial valuation as at 31 December 1996 is likely to show that the resources of the scheme are likely in the normal course of events to be sufficient to meet in full the liabilities of the scheme as they fall due.

Contributions amounting to £7,679 had been prepaid to the fund at the year end and are included in debtors. (1993 £2,088)

7. INTEREST RECEIVABLE

Bank deposits and other loans	£	£	£	£
		949		783

8. INTEREST PAYABLE

Bank	62,721	86,859
Other	–	1,717
	<u>62,721</u>	<u>88,576</u>
Finance leases – Monorail	68,795	68,795
– Other	431	740
	<u>69,226</u>	<u>69,535</u>
	<u>£ 131,947</u>	<u>£ 158,111</u>

9. EXCEPTIONAL ITEM – Corporation tax – prior years

As the Society is a Registered Charity it had been considered that no tax liability (other than V.A.T.) arose on income. However in 1993 the Inland Revenue raised an assessment on certain of the catering and souvenir retailing activities in respect of the financial years up to 1991. A settlement figure of £225,000 was agreed, payable in 6 equal instalments of £37,500, interest free, from 1994 to 1999.

Since 1 January 1992 any commercial activity which falls outside the statutory exemption for the purposes of Corporation Tax has been conducted through Chester Zoo Enterprises Ltd., which pays all its profits annually to the Society by Deed of Covenant.

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR TO 31ST DECEMBER, 1994 (continued)

10. TANGIBLE FIXED ASSETS

	Freehold Property	Buildings & Enclosures	Monorail System	Machinery & Equipment	Animals	Total
SOCIETY	£	£	£	£	£	£
COST						
At 1 January 1994	487,841	3,602,924	1,470,930	1,122,860	149,685	£ 6,834,240
Additions	102,921	578,701	1,231	151,797	-	834,650
Grants	-	(235,638)	-	-	-	(235,638)
Disposals	(15,862)	-	-	(84,464)	-	(100,326)
At 31 December 1994	574,900	3,945,987	1,472,161	1,190,193	149,685	£ 7,332,926
DEPRECIATION						
At 1 January 1994	-	1,752,033	440,317	748,105	148,685	£ 3,089,140
Provided during year	-	186,370	147,216	109,569	-	443,155
Grant Amortisation	-	(10,287)	-	-	-	(10,287)
Disposals	-	-	-	(59,975)	-	(59,975)
At 31 December 1994	-	1,928,116	587,533	797,699	148,685	£ 3,462,033
NET BOOK VALUE						
At 31 December 1994	574,900	2,017,871	884,628	392,494	1,000	£ 3,870,893
At 1 January 1994	487,841	1,850,891	1,030,613	374,755	1,000	£ 3,745,100

Animal purchases of £7,087 (1993 £11,532) and sales of £5,774 (1993 £12,751) have been treated as revenue transactions. Included in the total net book value of tangible fixed assets is £704,293 (1993 £827,623) in respect of assets acquired under 'finance' leases. Depreciation for the year on these assets was £117,382 (1993 £120,356). A European Regional Development Grant of £235,638 (1993 £NIL) was received in respect of certain assets acquired in the year.

	£	£	£	£	£	£	£
CONSOLIDATED							
COST							
At 1 January 1994	487,841	3,602,924	1,470,930	1,153,546	149,685	£	6,864,926
Additions	102,921	578,701	1,231	206,559	-	-	889,412
Grants	-	(235,638)	-	-	-	-	(235,638)
Disposals	(15,862)	-	-	(84,464)	-	-	(100,326)
At 31 December 1994	574,900	3,945,987	1,472,161	1,275,641	149,685	£	7,418,374
DEPRECIATION							
At 1 January 1994	-	1,752,033	440,317	760,806	148,685	£	3,101,841
Provided during year	-	186,370	147,216	127,756	-	-	461,342
Grant Amortisation	-	(10,287)	-	-	-	-	(10,287)
Disposals	-	-	-	(59,975)	-	-	(59,975)
At 31 December 1994	-	1,928,116	587,533	828,587	148,685	£	3,492,921
NET BOOK VALUE							
At 31 December 1994	574,900	2,017,871	884,628	447,054	1,000	£	3,925,453
At 1 January 1994	487,841	1,850,891	1,030,613	392,740	1,000	£	3,763,085

Animal purchases of £7,087 (1993 £11,532) and sales of £5,774 (1993 £12,751) have been treated as revenue transactions. Included in the total net book value of tangible fixed assets is £704,293 (1993 £827,623) in respect of assets acquired under 'finance' leases. Depreciation for the year on these assets was £117,382 (1993 £120,356). A European Regional Development Grant of £235,638 (1993 £NIL) was received in respect of certain assets acquired in the year.

11. INVESTMENT IN SUBSIDIARY COMPANY

Chester Zoo Enterprises Limited - 100% owned.
Registered in England and Wales - Class of shares held :- Ordinary £1 shares.
This company operates the catering and retail activities of the zoo.

12. STOCKS

Goods for resale
Consumables

SOCIETY		CONSOLIDATED	
1994	1993	1994	1993
£ 18,921	£ 16,375	£ 191,446	£ 162,374
36,296	31,456	36,296	31,509
£ 55,217	£ 47,831	£ 227,742	£ 193,883

The replacement cost of the above stocks would not be significantly different from the values stated.

13. DEBTORS

Trade debtors
Intra group debtor
Other debtors
Prepayments and accrued income

3,196	7,460	3,851	12,254
90,178	26,624	-	-
96,647	97,517	85,315	93,767
45,320	44,526	45,373	44,567
£ 235,341	£ 176,127	£ 134,539	£ 150,588

14. BANK OVERDRAFT

The bank overdraft is secured by a fixed charge on the freehold property. Interest is charged at a fixed rate above the bank's base rate.

15. TRUST FUND

Balance at 1 January 1994
Adoptions
Less: Transferred to animal foods
Donations and legacies etc.

160,736	137,905	160,736	137,905
86,796	83,551	86,796	83,551
(86,796)	(83,551)	(86,796)	(83,551)
66,564	22,831	66,564	22,831
£ 227,300	£ 160,736	£ 227,300	£ 160,736

The trust fund comprises unrestricted funds which are expendable at the discretion of the Council in furtherance of the objects of the Society. The description has been used by the Society to group together funds which have been earmarked for particular projects but does not legally restrict Council's discretion to apply the funds.

16. RECONCILIATION OF MOVEMENTS IN FUNDS EMPLOYED.

Funds employed at 1 January 1994
Surplus for the year
Movement on Trust Fund (see note 15)
Funds employed at 31 December 1994

1,719,353	1,335,311	1,719,353	1,335,311
258,362	361,211	258,362	361,211
66,564	22,831	66,564	22,831
£ 2,044,279	£ 1,719,353	£ 2,044,279	£ 1,719,353

17. CAPITAL COMMITMENTS

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

26,229	15,200	26,229	15,200
650,329	558,000	650,329	558,000
£ 676,558	£ 573,200	£ 676,558	£ 573,200
£ 2,588	£ 2,588	£ 2,588	£ 2,588

There is an annual commitment in respect of operating leases which expire within two to five years of:-
Plant and machinery

The Society has approval to receive £76,451 (1993 £312,089) of European Regional Development Fund grant in respect of the above connected capital commitments.

18. CONTINGENT LIABILITIES

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.

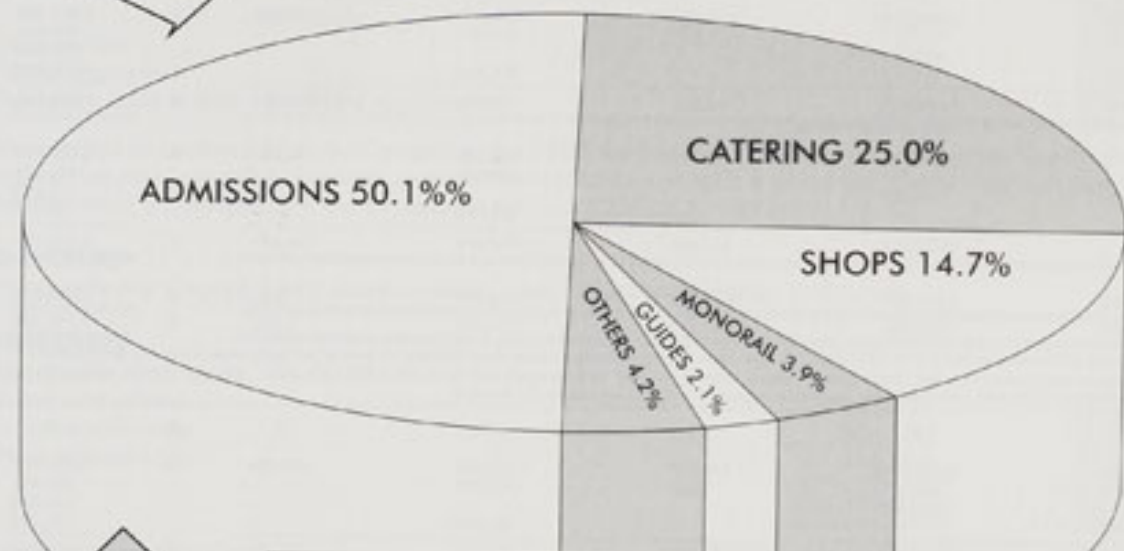
INCOME

1994

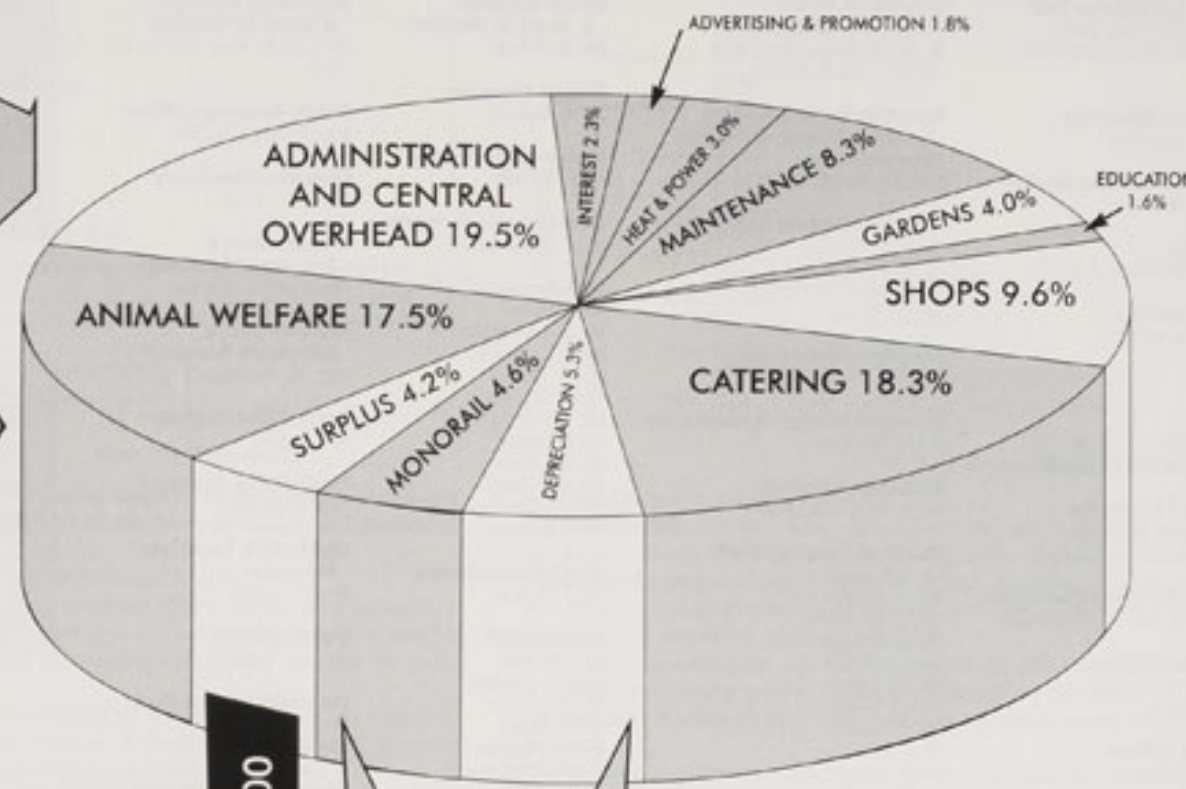
EXPENDITURE

TOTAL INCOME FROM VISITORS £6,711,000

ADOPTIONS £87,000



INCOME AVAILABLE TO RUN ZOO
£5,781,000



V.A.T. PAID ON INCOME £930,000

1994 VISITOR NUMBERS

	ADULT	CHILD/O.A.P.	TOTAL
NORMAL	499,622	167,436	667,058
PARTY (Non-Educational)	11,893	14,112	26,005
EDUCATIONAL	16,426	64,065	80,491
	527,941	245,613	773,554

SURPLUS £240,000

MONORAIL (£147,000)

OTHER (£304,000)

DEPRECIATION £451,000

FUNDS UTILISED BY ZOO FOR CAPITAL DEVELOPMENT
£889,000

SALES OF FIXED ASSETS £55,000

CAPITAL EXPENDITURE GRANTS £240,000

LEGACIES AND DONATIONS £66,000

NET REDUCTION IN BORROWINGS AND CREDITORS £163,000



60TH BIRTHDAY CELEBRATIONS

We invited schools from Upton, Merseyside and Greater Manchester to share our 60th Birthday on 13th July 1994. There were animal theme entertainments on the Jubilee lawn and wonderful Walls ice creams at 1934 prices (1p each).



Staff as at 31st December 1994

DIRECTOR'S SECTION

Director of Chester Zoo
Dr. M.R. Brambell, M.A.,
Vet. M.B., Ph.D., M.R.C.V.S.

Director's Secretary

Miss J.D. Lunsford

Computer Systems Analyst

Mr. K.W. Brown+

Librarian

Mrs. L. Wilkinson, A.L.A.*

Pest Controller

Mr. C. Humphries*

FINANCE & ADMINISTRATION

Financial Controller & Deputy Director

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

Deputy Financial Controller

Mr. A.R. Sykes, F.C.A., Dip.B.A.

Personnel Officer

Mrs. P.A. Rudd, B.A.,
Dip.R.S.A.+

Security Officer

Mr. T.A. Johnson

Assistant Security Officers

Mr. M. Boardman+
Mr. K.N. Done+

Accounts Supervisor

Miss C. Campion

Accounts & Cashiers

Mrs. S. Davies
Mrs. W. Davies*
Mrs. S. Delves*
Mrs. D. Farnell
Miss K. Hodson
Mrs. C.M. Pearson
Mrs. L. Richardson
Mrs. C. Shyne

Stores & Time Office Manager

Mr. P.J. Thompson+

Store Keepers

Mr. J. Andrewes+
Mr. M. Fallon+
Mr. J. Green+

Telephonists

Mrs. E.M. Lewis
Mrs. E.C. Manning

Timekeepers

Mr. J. Andrewes+
Mr. M. Fallon+
Mr. J. Green+
Mr. P.T. Hutchins +

Office Cleaner

Miss S. Read*

EDUCATION

Senior Education Officer & Head of Division

Miss B.M. Norgain, B.Sc., M.A.

Administration & Teachers

Mrs. J. Atkin, B.A.*
Mrs. J. Butler*
Miss L. Davenport, LL.B.
Mr. M. Powleson, B.A.
Mrs. S. Ruks, B.Sc.*

ANIMAL DIVISION

Curator-in-Chief & Head of Division

Dr. G. McGregor Reid, B.Sc.,
Ph.D., C.Biol., F.I.Biol.

Assistant to the Curators & International Movement Co-ordinator

Mrs. P.A. Rudd, B.A., Dip.R.S.A. +

Lab Technician & Safety Officer

Mr. D.C. Dinning

Divisional Secretary

Mrs. J. Whitear

Curator of Mammals

Mr. N.G. Ellerton

Mammal Section Co-ordinator

Mr. N. Spooner

Research Associate

Mr. A. Britt, B.Sc., M.Sc.

Mammal Keeping Staff

Mr. S.A. Blake
Mr. M. Boardman+
Mr. G. Bouchier
Mr. D. Brunger
Miss R. Buckle
Mr. M. Cleave
Miss J. Dodd
Mr. G. Easton
Mr. J. Frost
Mr. R. Green
Mr. D.I. Hall
Mr. S. Hogarth, B.Sc., M.Sc.
Mr. P. Howse, B.A.
Mr. P.M. Jones
Mr. C.G. Lavender
Mr. A. Lenihan
Mr. C.J. MacKenzie
Mr. R. Meredith
Mr. P. Molyneux
Mr. N.W. Ormerod
Mr. R. Packwood
Miss R. Parker
Miss B. Ramsay
Mr. M. Roberts
Mrs. R. Roberts
Mr. T.L. Rowlands
Mr. P. Whalley
Mr. J.A. Willis
Mr. A.R. Woodward

Curator of Birds

Dr. R. Wilkinson, B.Sc., Ph.D.

Avicultural Deputy

Mr. M. Pilgrim, B.Sc.

Bird Keeping Staff

Miss K.E. Davies
Mr. D. Langford
Mr. D.N. Manning
Mr. W.D. McLeod
Mr. R. Merry
Mr. P. I. Morris
Miss C. Veltkamp
Mr. B. West
Mr. S.R. Williams
Mr. A. Woolham

Herpetologist

Mr. K.W. Brown+

Reptile Keeping Staff

Miss I.A. McGeorge
Miss C. Morris

Aquarist

Mr. M.C. Crumpler

Aquarium Keeping Staff

Mr. J.T. Bell

Animal Supplies Officer

Mr. J.A.C. Forrest, B.Ed.

Animal Supplies Staff

Mr. A.B. Hutchinson
Mr. K.J. Newey
Mr. S. Sadler

ESTATES

Estate Engineer & Head of Division

Mr. S. O'Brien

Project Engineer

Mr. K. Roberts

Divisional Secretary

Miss H. Smith

Maintenance Foreman

Mr. R.J. Morrison

Maintenance

Mr. I. Blythe
Mr. C.J. Bridges
Mr. D.C. Holder
Mr. D. Kinsella
Mr. A. Lennon
Mr. E.P. Lindop
Mr. P. Owens
Mr. J.E. Parry
Mr. G.E. Scott
Mr. L.L. Shepherd
Mr. J. Spencer

Head Groundsman

Mr. P. Hughes

Groundstaff

Mrs. J. Cole*
Mrs. C. Cowley
Mr. S. Gilyeat
Mr. R. Head
Mr. M. Hughes
Mr. P.T. Hutchins+
Mr. C. Jones
Mr. P. Powell
Mr. C. Yarwood

Head Gardener

Mr. E.J. Rudman

Deputy Head Gardener

Mr. J.G. Johnson

Foreman Gardener

Mr. C. Williams

Gardens

Mr. C.P. Braithwaite
Mr. K.N. Done+
Mr. R. Duncan
Mr. M. Hargreaves
Mr. P. Harrison
Mr. G. Hewitt
Mr. R. Hoddinott
Mr. D.R. Jones
Mr. A. Millington
Mr. R.A. Newey
Mr. S.H. Newey
Mr. C. Pritchard
Mr. J.E. Richardson
Mr. I.F. Roberts
Mr. N.P. Wood

Plant Engineer

Mr. W.P. Bartley

Plant & Equipment

Mr. B. Goss
Mr. B. McCone

Monorail & Boats

Mr. D. Paech
Mr. P. Quayle
Mr. D.A. Toms

MARKETING

Marketing Manager & Head of Division

Mr. C.M.N. Vere, M.B.E., T.D.,
M.A.

Public Relations Officer

Mrs. P. Cade, M.I.P.R.

Divisional Secretary

Miss P.A. McKee

Membership & Adoptions Secretary

Mrs. M.M.A. Allsopp

Membership & Adoptions Assistant

Mrs. M. McManus*

Party Office Manager

Mrs. L. Bell

Party Office Assistant

Mrs. J. Lawson*

Oakfield & Functions Manager

Mr. R. Casson

Oakfield Chef

Mrs. G. Foden*

Oakfield Second Chefs

Mr L. Adamson
Mrs. J. Cleave

Catering Manageress

Mrs. S. Clews

Assistant Catering Manager

Mr. B.G. Lloyd

Jubilee Chef

Mr. I. Patten

General Catering

Miss R. Don*
Miss J. Glossop
Mr. M. Jones
Mr. D. Keay*
Mrs. P. Keay
Mrs. D. Lenihan
Mrs. B. Smith

Retail Sales Manager

Mr. A. Jones

Assistant Retail Sales Manager

Mrs. S. Stanton

Merchandise Controller

Miss W. Locker

Retail Supervisor

Mrs. C. Long

Retail Sales Assistants

Mrs. S. Bratchell*
Mrs. B. Jones*
Miss G. Robinson

Retired - 1994

Mr P. Brady
Mr. N. Morris
Mr. J. Smith
Mr. J. Whitby

Staff Leaving in 1994

Mr. J. Hall
Mr. M. Strefford
Mrs. S. Williams

Staff Association 1994 Committee

Chairman

Mr. C.J. MacKenzie

Vice Chairman & Gardens

Mr. J.E. Richardson

Groundstaff

Mr. P. Powell

Keepers

Mr. P.M. Jones
Mr. R. Merry

Retail & Catering

Miss W. Locker

Maintenance

Mr. B. Goss

Education & Administration

Miss L. Davenport, LL.B.

*denotes Part-time
+denotes Dual Responsibilities

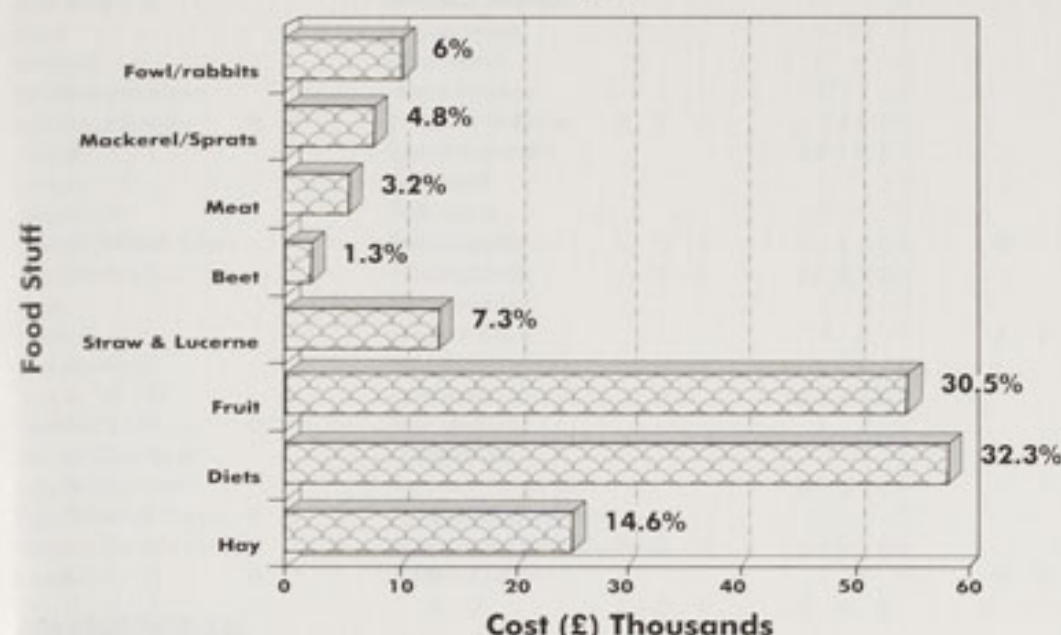


Senior keeper Phil Whalley drew this cockatoo as one of a number of illustrations for an Educational Division Teachers' Pack.

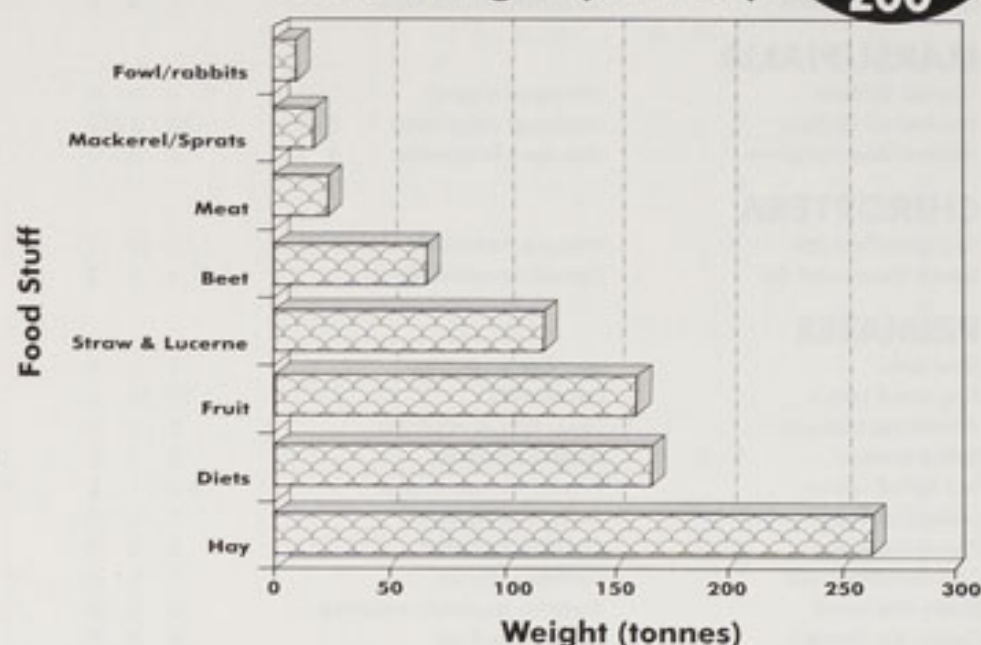
Animal Food Supplies – 1994



Food Costs (£)



Food Weight (tonnes)



More than 844 tonnes of food were supplied to the animals and birds in 1994 for a total cost of £248,138. An average weight of 2.31 tonnes costs £680 per day.

The 158 tonnes of fruit and vegetables costs £55,676.

The **fruit** consisted mainly of 36 tonnes of apples, 18 tonnes of bananas, 8 tonnes of pears, 6.5 tonnes of oranges, 3.5 tonnes of grapes, with smaller amounts of seasonal fruit, e.g. pineapples, melons, kiwi, peaches, coconuts, plums, etc.

The **vegetables** comprised mainly of 41 tonnes of cabbage, 41 tonnes of carrots, 3.5 tonnes of lettuce, 2 tonnes of tomatoes with additional quantities of leeks, courgettes, sweetcorn, celery and others as available.

Cereal supplies for consumption and bedding amounted to 480 tonnes at a cost of £45,000. These included 263 tonnes of hay, 67 tonnes of fodder beet and mangolds, 65 tonnes of straw, 53 tonnes of lucerne, 32 tonnes of sawdust

and shavings and 7,200 loaves of bread.

The **special diets** such as flamingo diet, primate diet, browser diet, parrot mix, coarse mix, reindeer diet, etc., amounted to 166 tonnes and cost £59,000.

Fleshy foods which consisted of 23 tonnes of meat, 10 tonnes of mackerel and herring and 7 tonnes of sprats, cost £14,500 and were supplemented by 10 tonnes of fowl and rabbits which cost £11,000.

Half a tonne of mealworms, 300,000 crickets and 100,000 frozen units were purchased from external sources to feed the birds and reptiles. These supplemented the 103,000 zoo bred units which consisted mainly of 92,000 locusts.

The diets were supplemented with a variety of vitamin powders, e.g. Stress, SA37, Vionate. These items, though in small quantities, form an important component of the diets of the animals, birds and reptiles in the collection.

Mr J. A. C. Forrest Animal Supplies Officer.

The Animal Collection – Notes

In the following pages the animals are listed thus:

- 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 1993 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 for recording the breeding performance of many species, they are inappropriate for species which produce large numbers of small or 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/?

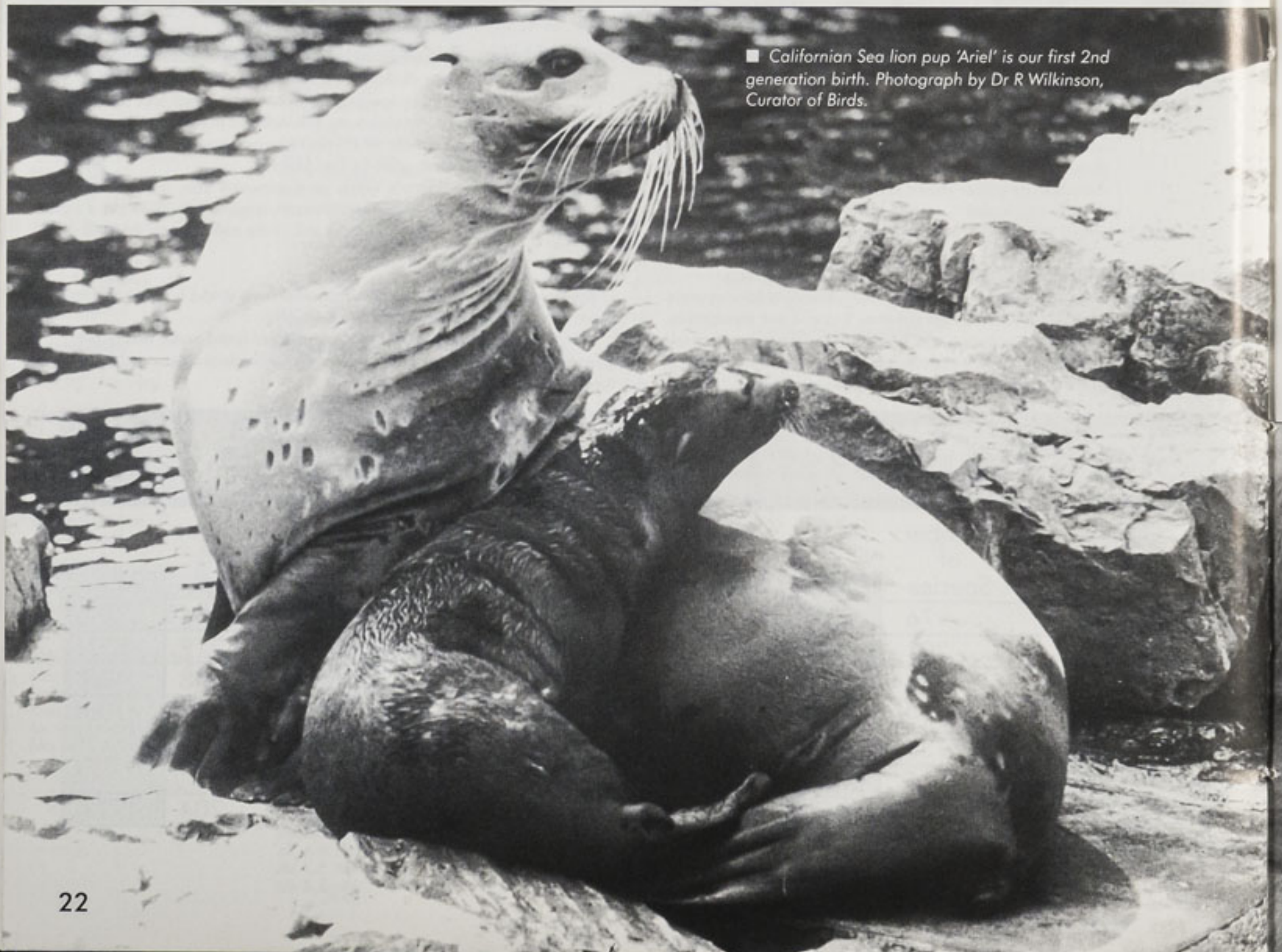
Stock as at 31st December 1994

	Number of Species		Number of Specimens		Species Breeding & Rearing		Specimens Bred & Reared	
	End 93	End 93	End 93	End 93	End 93	End 93	End 93	
Mammals	76	(79)	667	(676)	29	(32)	124	(164)
Birds	201	(196)	906	(811)	68	(68)	279	(251)
Reptiles	41	(65)	298	(359)	9	(10)	238	(408)
Amphibians	19	(15)	164	(115)	3	(2)	63	(100)
Fish	130	(136)	2,894	(2,444)	21	(36)	*	*
Invertebrates	35	(29)	494	(424)	16	(4)	*	*
Totals	502	(520)	5,423	(4,829)	146	(152)	704	(923)

* Not included

MAMMALS

		STOCK 1/1/1994 M F Y/?	RECEIVED M F Y/?	BORN/H'CH M F Y/?	D.N.S. 30 DAYS M F Y/?	DEATHS OTHERS M F Y/?	DISPOSALS M F Y/?	STOCK 31/12/94 M F Y/?
MONOTREMATA								
Short-nosed Echidna	<i>Tachyglossus aculeatus</i>	2 0 0						2 0 0
MARSUPIALIA								
Tammar Wallaby	<i>Macropus eugenii</i>	1 1 0						1 1 0
Red-necked Wallaby	<i>Macropus rufogriseus</i>	10 7 0		1 5 2	0 0 2	1 1 0	5 0 0	5 11 0
Western Grey Kangaroo	<i>Macropus fuliginosus</i>	2 4 0		0 1 0				2 5 0
CHIROPTERA								
Rodrigues Fruit Bat	<i>Pteropus rodricensis</i>	11 20 1		7 7 9	1 0 4	1 3 1		16 24 5
Seba's Short-tailed Bat	<i>Carollia perspicillata</i>	4 5 2		0 0 14	0 0 1	0 0 2		4 5 13
PRIMATES								
Slow Loris	<i>Nycticebus coucang</i>	1 1 0						1 1 0
Ring-tailed Lemur	<i>Lemur catta</i>	15 16 0		3 3 0		0 1 0		18 18 0
White Fronted Lemur	<i>Lemur fulvus albifrons</i>	2 4 0					0 1 0	2 3 0
Ruffed Lemur	<i>Varecia variegata</i>	2 2 0						2 2 0
Red Ruffed Lemur	<i>Varecia variegata rubra</i>	1 1 0		1 0 0				2 1 0
Lesser Bushbaby	<i>Galago senegalensis</i>	1 1 0				1 0 0	0 1 0	0 0 0
Pygmy Marmoset	<i>Callithrix pygmaea</i>	6 3 0		0 0 2	0 0 1		0 1 0	6 2 1
Common Marmoset	<i>Callithrix jacchus</i>	1 2 0				0 1 0	1 1 0	0 0 0
Silvery Marmoset	<i>Callithrix argentata melanura</i>	0 0 0	2 1 0	0 0 3	0 0 3	1 0 0		1 1 0
Cotton Top Tamarin	<i>Saguinus oedipus</i>	4 5 0						4 5 0
White-lipped Tamarin	<i>Saguinus labiatus</i>	3 1 0						3 1 0
Spider Monkey (black face)	<i>Ateles fusciceps robustus</i>	3 5 0	2 0 0	0 1 0			2 0 0	3 6 0
Lion-tailed Macaque	<i>Macaca silenus</i>	3 1 0				1 0 0		2 1 0
Celebes Macaque	<i>Macaca niger</i>	4 6 0	0 1 0	2 1 0	1 0 0			5 8 0
De Brazza Monkey	<i>Cercopithecus neglectus</i>	3 2 0					1 1 0	2 1 0
Talapoin Monkey	<i>Miopithecus talapoin</i>	1 4 0	1 0 0	0 1 0	0 1 0			2 4 0
Chimpanzee	<i>Pan troglodytes</i>	5 19 0		1 2 0	1 1 0		0 1 0	5 19 0
Orang utan (Bornean Form)	<i>Pongo pygmaeus pygmaeus</i>	1 6 0		0 1 0				1 7 0
Orang utan (Sumatran Form)	<i>Pongo pygmaeus abelii</i>	1 3 0						1 3 0
RODENTIA								
Prairie Marmot	<i>Cynomys ludovicianus</i>	0 0 114				0 0 44		0 0 70
African Crested Porcupine	<i>Hystrix cristata</i>	1 4 0		0 0 1	0 0 1			1 4 0
Capibara	<i>Hydrochoerus hydrochaeris</i>	1 1 0		1 0 0				2 1 0
Coypu	<i>Myocastor coypus</i>	5 2 0		1 2 0		2 1 0		4 3 0
Mountain Viscacha	<i>Lagidium viscaccia</i>	1 0 0						1 0 0



■ Californian Sea lion pup 'Ariel' is our first 2nd generation birth. Photograph by Dr R Wilkinson, Curator of Birds.

		STOCK 1/1/1994 M F Y/?	RECEIVED M F Y/?	BORN/H'CH M F Y/?	D.N.S. 30 DAYS M F Y/?	DEATHS OTHERS M F Y/?	DISPOSALS M F Y/?	STOCK 31/12/94 M F Y/?
CARNIVORA								
Bush Dog	<i>Speothos venaticus</i>	1 1 0	1 0 0			1 0 0		1 1 0
Coati	<i>Nasua nasua</i>	4 30 0				3 3 0	0 8 0	1 19 0
Kinkajou	<i>Potos flavus</i>	0 2 0						0 2 0
Small-clawed Otter	<i>Aonyx cinerea</i>	1 1 0						1 1 0
Dwarf Mongoose	<i>Helogale undulata</i>	7 4 0		0 1 1	0 0 1	0 2 0	1 2 0	6 1 0
Meerkat	<i>Suricata suricatta</i>	0 0 5			0 0 1			0 0 4
Margay	<i>Felis wiedi</i>	3 1 0					1 0 0	2 1 0
Jungle Cat	<i>Felis chaus</i>	2 1 0						2 1 0
Wildcat (Scottish form)	<i>Felis sylvestris</i>	1 0 0	0 1 0					1 1 0
Black Footed Cat	<i>Felis nigripes</i>	1 0 0						1 0 0
Ocelot	<i>Felis pardalis</i>	1 2 0						1 2 0
Caracal	<i>Felis caracal</i>	2 2 0	1 0 0					3 2 0
European Lynx	<i>Felis lynx</i>	1 1 0						1 1 0
Serval	<i>Felis serval</i>	2 1 0						2 1 0
Geoffroy's Cat	<i>Felis geoffroyi</i>	1 3 0						1 3 0
Lion (African Form)	<i>Panthera leo</i>	1 3 0				1 0 0	0 3 0	0 0 0
Lion (Indian Form)	<i>Panthera leo persica</i>	0 0 0	1 1 0	2 1 0				3 2 0
Tiger (Siberian Form)	<i>Panthera tigris altaica</i>	1 2 0						1 2 0
Leopard (Persian Form)	<i>Panthera pardus saxicolour</i>	2 3 0					1 0 0	1 3 0
Cheetah	<i>Acinonyx jubatus</i>	2 0 0	0 3 0					2 3 0
PINNIPEDIA								
Californian Sealion	<i>Zalophus californianus</i>	1 4 0		0 1 0				1 5 0
PROBOSCIDEA								
Indian Elephant	<i>Elephas maximus</i>	2 5 0	0 3 0				0 2 0	2 6 0
PERISSODACTYLA								
Przewalski's Horse	<i>Equus przewalskii</i>	1 6 0				1 0 0		0 6 0
Common Zebra	<i>Equus burchelli boehmi</i>	2 6 0				1 0 0		1 6 0
Onager (Persian Form)	<i>Equus hemionus onager</i>	1 4 0		0 2 0				1 6 0
Brazilian Tapir	<i>Tapirus terrestris</i>	1 1 0						1 1 0
Black Rhinoceros	<i>Diceros bicornis</i>	2 2 0		1 0 0	1 0 0		1 0 0	1 2 0
Indian Rhinoceros	<i>Rhinoceros unicornis</i>	1 0 0						1 0 0
ARTIODACTYLA								
Collared Peccary	<i>Tayassu tajacu</i>	1 1 0				1 0 0		0 1 0
Guanaco	<i>Lama guanicoe</i>	7 13 0		5 2 0	1 0 0		3 0 0	8 15 0
Bactrian Camel	<i>Camelus bactrianus</i>	2 2 0		2 0 0			1 0 0	3 2 0
Chilean Pudu	<i>Pudu pudu</i>	1 0 0	0 2 0			0 1 0		1 1 0
Axis Deer	<i>Cervus axis</i>	3 12 0		7 6 0	2 2 0	1 1 0	1 2 0	6 13 0
Père David's Deer	<i>Elaphurus davidianus</i>	2 5 0		2 1 0				4 6 0
Reindeer	<i>Rangifer tarandus</i>	3 12 0	1 0 0	2 6 0	2 4 0		1 0 0	3 14 0
Chinese Water Deer	<i>Hydropotes inermis</i>	1 0 0						1 0 0
Giraffe	<i>Giraffa camelopardalis</i>	2 1 0						2 1 0
Nilgai	<i>Boselaphus tragocamelus</i>	6 13 0		8 3 0	3 1 0	3 1 0	2 4 0	6 10 0
Congo Buffalo	<i>Syncerus caffer nanus</i>	1 6 0		0 1 0		0 1 0		1 6 0
Eland	<i>Taurotragus oryx</i>	2 3 0					2 3 0	0 0 0
Bongo	<i>Tragelaphus eurycerus</i>	2 3 0					0 1 0	2 2 0
Sitatunga	<i>Tragelaphus spekei</i>	0 0 0	2 4 0	0 1 1				2 5 1
Wildebeeste	<i>Connochaetes taurinus</i>	0 4 0					0 4 0	0 0 0
Roan Antelope	<i>Hippotragus equinus</i>	1 1 0				0 1 0		1 0 0
Sable Antelope	<i>Hippotragus niger</i>	2 0 0	5 0 0			2 0 0		5 0 0
Red Lechwe	<i>Kobus lechwe</i>	7 17 0		1 3 0		6 7 0		2 13 0
Scimitar Horned Oryx	<i>Oryx dammah</i>	4 12 0	1 0 0			1 1 0	3 0 0	1 11 0
Gemsbok	<i>Oryx gazella gazella</i>	1 4 0						1 4 0
Blackbuck	<i>Antelope cervicapra</i>	12 21 0		19 12 1	7 8 0	0 2 0	6 0 0	18 23 1
Arabian Gazelle	<i>Gazella gazella arabica</i>	3 10 0		2 8 0	0 3 0	1 2 0		4 13 0
American Bison	<i>Bison bison</i>	1 6 0	1 0 0	2 1 0			1 0 0	3 7 0
		<u>177 345 154</u>	<u>18 16 0</u>	<u>70 73 34</u>	<u>19 20 14</u>	<u>29 29 47</u>	<u>33 36 0</u>	<u>210 362 95</u>
		676	34	177	53	105	69	667

**Number of specimens 667,
Number of species 76**

■ Left: Bornean Orang utan 'Kibriah' with her female baby 'Maliku'. This is our 17th birth in the Orang utan house. Photograph by Miss Elizabeth Stolarczyk from Bradford - Runner up in the 1994 Junior section of the Zoo Photographic competition. Below right: The distinctively marked Sitatunga, a marsh antelope took over the former Eland paddock, with births soon after their arrival.



BIRDS

		STOCK	RECEIVED	BORN/H'CH	D.N.S.	DEATHS	DISPOSALS	STOCK
		1/1/1994	M F Y/?	M F Y/?	30 DAYS	OTHERS	M F Y/?	31/12/94
		M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?
STRUTHIONIFORMES								
Ostrich (E. African form)	<i>Struthio camelus masaiicus</i>	1 0 0						1 0 0
RHEIFORMES								
Common Rhea	<i>Rhea americana</i>	1 1 0		0 0 6	0 0 4	0 0 1		1 1 1
CASUARIIFORMES								
Emu	<i>Dromaius novaehollandiae</i>	1 1 0		0 0 1			0 0 1	1 1 0
TINAMIFORMES								
Chilean Tinamou	<i>Nothoprocta perdicaria</i>	0 0 5					0 0 5	0 0 0
SPHENISCIFORMES								
Humboldt's Penguin	<i>Spheniscus humboldti</i>	15 17 6	0 0 6	0 0 15	0 0 7			15 17 20
PELECANIFORMES								
White Pelican	<i>Pelecanus onocrotalus</i>	0 0 0	0 0 2					0 0 2
CICONIIFORMES								
Little Egret	<i>Egretta garzetta</i>	4 2 0				1 1 0		3 1 0
White Stork	<i>Ciconia ciconia</i>	2 2 0						2 2 0
Waldraup Ibis	<i>Geronticus eremita</i>	9 8 13		0 0 6		0 0 1		9 8 18
Scarlet Ibis	<i>Eudocimus ruber</i>	0 0 0	2 2 0					2 2 0
Chilean Flamingo	<i>Phoenicopterus chilensis</i>	12 11 7		0 0 7	0 0 1	0 0 2		12 11 11
Caribbean Flamingo	<i>Phoenicopterus ruber ruber</i>	15 12 22		0 0 6		0 0 3		15 12 25
Caribbean x Chilean Flamingo	<i>P. ruber x P. chilensis</i>	0 1 0						0 1 0
ANSERIFORMES								
Fulvous Tree Duck	<i>Dendrocygna bicolor</i>	3 3 0				1 1 0		2 2 0
Black-billed Whistling Duck	<i>Dendrocygna arborea</i>	0 0 0	3 3 0					3 3 0
White-faced Whistling Duck	<i>Dendrocygna viduata</i>	1 1 0				1 0 0		0 1 0
Black-necked Swan	<i>Cygnus melanocoryphus</i>	1 1 0		2 0 6	0 0 4	0 0 2		3 1 0
Emperor Goose	<i>Anser canagicus</i>	2 2 0		0 0 1	0 0 1			2 2 0
Lesser White-fronted Goose	<i>Anser erythropus</i>	2 2 0						2 2 0
Ross's Snow Goose	<i>Anser rossii</i>	1 1 0	0 1 0			0 1 0		1 1 0
Red-breasted Goose	<i>Branta ruficollis</i>	6 6 0		0 0 5		0 0 1	0 0 4	6 6 0
Hawaiian Goose	<i>Branta sandvicensis</i>	3 3 0		0 0 4		1 0 0	0 1 4	2 2 0
Ashy-headed Goose	<i>Chloephaga poliocephala</i>	1 1 0					1 1 0	0 0 0
Common Shelduck	<i>Tadorna tadorna</i>	2 4 0		0 0 3		0 0 2	0 0 1	2 4 0
Baikal Teal	<i>Anas formosa</i>	1 3 0		0 0 1	0 0 1	0 1 0		1 2 0
Falcated Teal	<i>Anas falcata</i>	2 3 0	2 0 0			1 0 0		3 3 0
Northern Shoveler	<i>Anas clypeata</i>	2 1 0				1 1 0		1 0 0
Red Shoveler	<i>Anas platylea</i>	0 1 0						0 1 0
Laysan Teal	<i>Anas laysanensis</i>	4 3 0		1 1 0		1 0 0	1 1 0	3 3 0
Garganey	<i>Anas querquedula</i>	2 2 0						2 2 0
Chiloe Wigeon	<i>Anas sibilatrix</i>	1 2 0	1 1 0			1 1 0		1 2 0
Ringed Teal	<i>Callonetta leucophrys</i>	2 2 0	1 1 0			1 2 0		2 1 0
Marbled Teal	<i>Marmaronetta angustirostris</i>	3 5 0		0 0 12		0 0 2	0 0 10	3 5 0
Common Eider	<i>Samateria mollissima</i>	2 2 0						2 2 0
Ferruginous Duck	<i>Aythya nyroca</i>	0 0 0	1 1 0					1 1 0
Tufted Duck	<i>Aythya fuligula</i>	4 3 0						4 3 0
Rosy-billed Pochard	<i>Netta peposaca</i>	2 2 0		0 0 9	0 0 2		0 0 7	2 2 0
Red-crested Pochard	<i>Netta rufina</i>	3 3 0						3 3 0
Maned Goose	<i>Chenonetta jubata</i>	1 2 0					1 2 0	0 0 0
Mandarin Duck	<i>Aix galericulata</i>	7 6 0						7 6 0
Carolina Duck	<i>Aix sponsa</i>	1 2 0	3 4 0	0 0 1		1 0 0	0 0 1	3 6 0
White-winged Wood Duck	<i>Cairina scutulata</i>	3 2 0		0 0 5			2 1 5	1 1 0
Smew	<i>Mergus albellus</i>	2 1 0	1 1 0	1 2 0		1 1 0		3 3 0
Hooded Merganser	<i>Mergus cucullatus</i>	2 3 0	1 1 0	2 1 0		0 1 0		5 4 0
Ruddy Duck	<i>Oxyura jamaicensis</i>	4 2 0		0 0 1	0 0 1	1 0 0		3 2 0
White-headed Duck	<i>Oxyura leucocephala</i>	1 2 0	2 2 0	0 0 3	0 0 3	0 1 0		3 3 0
Bufflehead	<i>Bucephalus albeola</i>	0 0 0	2 2 0			0 2 0		2 0 0
FALCONIFORMES								
Mauritius Kestrel	<i>Falco punctatus</i>	1 1 0						1 1 0
Andean Condor	<i>Vultur gryphus</i>	2 1 0		1 0 0	1 0 0		1 0 0	1 1 0
European Black Vulture	<i>Aegypius monachus</i>	1 1 0						1 1 0
Secretary Bird	<i>Sagittarius serpentarius</i>	1 1 0	1 0 0				1 0 0	1 1 0
GALLIFORMES								
Variable Chachalaca	<i>Ortalis motmot</i>	1 1 0						1 1 0
Bare-faced Curassow	<i>Crax fasciolata</i>	2 1 0		5 0 0			1 0 0	6 1 0
Chinese Painted Quail	<i>Excalfactoria chinensis</i>	0 0 0	1 0 0					1 0 0
Californian Quail	<i>Lophortyx californica</i>	6 5 0		1 4 5	0 0 4	0 2 1	1 1 0	6 6 0
Rourolou Partridge	<i>Rollulus rouloul</i>	1 1 0	3 1 0			3 1 0		1 1 0
Blyth's Tragopan	<i>Tragopan blythii</i>	0 0 0	1 1 0					1 1 0
Satyr Tragopan	<i>Tragopan satyra</i>	4 4 0		1 1 3	0 0 3		3 2 0	2 3 0
Temminck's Tragopan	<i>Tragopan temminckii</i>	2 4 0		0 0 13	0 0 2	0 1 3	1 2 8	1 1 0
Himalayan Monal	<i>Lophophorus impeyanus</i>	1 1 0		0 0 18	0 0 1		0 0 15	1 1 2
Brown Eared Pheasant	<i>Crossoptilon mantchuricum</i>	1 1 0						1 1 0
White Eared Pheasant	<i>Crossoptilon crossoptilon</i>	2 1 0	1 1 0				1 1 0	2 1 0
Golden Pheasant	<i>Chrysolophus pictus</i>	1 1 1		1 3 0				2 4 1
Grey Peacock Pheasant	<i>Polyplectron bicalcaratum</i>	1 1 0						1 1 0
Palawan Peacock Pheasant	<i>Polyplectron emphanum</i>	4 3 0	0 1 0	0 0 2	0 0 1	0 1 0	1 0 0	3 3 1
Edwards' Pheasant	<i>Lophura edwardsi</i>	6 8 0		8 5 2	0 0 2	1 0 0	10 10 0	3 3 0
Common Peafowl	<i>Pavo cristatus</i>	3 2 0		0 0 4		1 1 0	0 0 4	2 1 0
Congo Peafowl	<i>Afropavo congensis</i>	1 1 0				0 1 0		1 0 0
GRUIFORMES								
Red-crowned Crane	<i>Grus japonensis</i>	2 2 1		2 0 0		0 1 0	0 0 1	4 1 0
White-naped Crane	<i>Grus vipio</i>	1 1 0						1 1 0
Wattled Crane	<i>Bucconeranus carunculatus</i>	1 1 0						1 1 0
Demoiselle Crane	<i>Anthropoides virgo</i>	1 1 0						1 1 0

		STOCK			RECEIVED			BORN/H'CH			D.N.S.			DEATHS			DISPOSALS			STOCK			
		1/1/1994			M F Y/2			M F Y/2			30 DAYS			OTHERS			M F Y/2			31/12/94			
		M	F	Y/2	M	F	Y/2	M	F	Y/2	M	F	Y/2	M	F	Y/2	M	F	Y/2	M	F	Y/2	
GRUIFORMES cont.																							
Blue Crane	<i>Anthropoides paradisea</i>	0	0	0	2	1	0							1	0	0				1	1	0	
West African Crowned Crane	<i>Balearica pavonina pavonina</i>	2	4	0	1	0	0							1	1	0				2	3	0	
Gough Island Moorhen	<i>Gallinula comeri</i>	1	1	0				0	1	0										1	2	0	
Sun Bittern	<i>Eurypyga helias</i>	2	0	0	0	1	0													2	1	0	
Little Black Bustard	<i>Eupodotis afra</i>	1	2	0				0	0	1	0	0	1							1	2	0	
CHARADRIIFORMES																							
Avocet	<i>Recurvirostra avosetta</i>	0	0	0	3	3	0							1	1	0				2	2	0	
Stone Curlew	<i>Burhinus oedipnemus</i>	0	2	0	1	1	0													1	3	0	
Southern Stone Curlew	<i>Burhinus magirostris</i>	0	1	0																0	1	0	
Blacksmith's Plover	<i>Vanellus armatus</i>	1	0	0														1	0	0	0	0	
Crowned Plover	<i>Vanellus coronatus</i>	3	3	0				3	3	1	0	0	1	0	1	0		1	1	0	5	4	0
Ruff	<i>Philomachus pugnax</i>	1	0	0										1	0	0				0	0	0	
COLUMBIFORMES																							
Speckled Pigeon	<i>Columba guinea</i>	3	0	0	0	2	1							1	1	0				2	1	1	
Rock Dove	<i>Columba livia</i>	0	0	0	2	2	0													2	2	0	
Pink Pigeon	<i>Nesoenas mayeri</i>	2	2	0	1	2	0							0	1	0				3	3	0	
Laughing Dove	<i>Streptopelia senegalensis</i>	1	1	4				0	0	3	0	0	1	0	0	1				1	1	5	
Emerald Dove	<i>Chalcophaps indica</i>	2	0	0										1	0	0				1	0	0	
Crested Bronzewing Pigeon	<i>Ocyphaps lophotes</i>	2	1	4										1	0	1				1	1	3	
Common Bronzewing Pigeon	<i>Phaps chalcoptera</i>	2	2	1				0	0	2	0	0	2				0	0	1	2	2	0	
Diamond Dove	<i>Geopelia cuneata</i>	1	0	0	0	1	0	0	0	2										1	1	2	
Mountain Witch Dove	<i>Geotrygon versicolor</i>	3	2	2	2	0	0							2	2	2				3	0	0	
Luzon Bleeding Heart Pigeon	<i>Gallucolumba luzonica</i>	1	2	0																1	2	0	
Celebes Quail Dove	<i>Gallucolumba trisigmata</i>	1	1	0										1	1	0				0	0	0	
Pink-necked Green Pigeon	<i>Treron vernans</i>	1	1	0										1	1	0				0	0	0	
Superb Fruit Dove	<i>Phainopepla superbus</i>	2	2	0				3	0	0				1	0	0				4	2	0	
Pied Imperial Pigeon	<i>Ducula bicolor</i>	2	2	0																2	2	0	
Blue Crowned Pigeon	<i>Goura cristata</i>	1	1	0																1	1	0	
Nicobar Pigeon	<i>Caloenas nicobarica</i>	4	1	0	0	2	0	0	0	1										4	3	1	
PSITTACIFORMES																							
Black-winged Lory	<i>Eos cyanogenia</i>	0	2	0	3	1	0							1	0	0				2	3	0	
Blue-streaked Lory	<i>Eos reticulata</i>	1	1	0	2	2	0							0	1	0				3	2	0	
Duyvenbode's Lory	<i>Chalcopsitta duivenbodei</i>	1	1	0																1	1	0	
Yellow-backed Chattering Lory	<i>Lorius garrulus flavopalliatatus</i>	3	2	0				2	0	3	0	0	1	0	0	1	2	0	0	3	2	1	
Stella's Lorikeet	<i>Charmosyna papou</i>	1	1	0				1	1	3	0	0	2	0	0	1				2	2	0	
Red-flanked Lorikeet	<i>Charmosyna placensis</i>	0	0	0	1	1	0													1	1	0	
Musschenbroek's Lorikeet	<i>Neopsittacus musschenbroekii</i>	1	1	0				0	0	2	0	0	1	0	0	1				1	1	0	
Palm Cockatoo	<i>Probosciger aterrimus</i>	1	1	0																1	1	0	
Blue-eyed Cockatoo	<i>Cacatua ophthalmica</i>	4	8	0				3	0	3	0	0	1				0	2	0	7	6	2	
Red-vented Cockatoo	<i>Cacatua haematuropygia</i>	1	1	0	1	1	0													2	2	0	
Kea	<i>Nestor notabilis</i>	2	2	0										0	1	0				2	1	0	
Solomon Island Eclectus Parrot	<i>Eclectus roratus solomonensis</i>	1	0	0													1	0	0	0	0	0	
'Vosmaeri' Eclectus Parrot	<i>Eclectus roratus vosmaeri</i>	0	2	0	1	0	0							0	1	0				1	1	0	
Greater Vasa Parrot	<i>Coracopsis vasa</i>	2	2	0				3	1	0							3	2	0	2	1	0	
Lesser Vasa Parrot	<i>Coracopsis nigra nigra</i>	4	3	0				0	2	0				0	1	0	4	4	0	0	0	0	
Princess of Wales Parakeet	<i>Polytelis alexandrae</i>	1	1	0																1	1	0	
Splendid Parakeet	<i>Neophema splendida</i>	1	1	0	1	0	0	0	0	5	0	0	1	1	0	1	0	0	3	1	1	0	
Derbyan Parakeet	<i>Psittacula derbiana</i>	2	2	0	2	0	1							0	0	1	2	0	0	2	2	0	
Black-cheeked Lovebird	<i>Agapornis nigrigensis</i>	0	0	0	3	3	0										3	3	0	0	0	0	
Hyacinthine Macaw	<i>Anodorhynchus hyacinthinus</i>	1	1	0																1	1	0	
Blue and Yellow Macaw	<i>Ara ararauna</i>	2	2	0				1	2	1				0	0	1	0	1	0	3	3	0	
Blue-throated Macaw	<i>Ara glaucogularis</i>	1	1	0										0	1	0				1	0	0	
Scarlet Macaw	<i>Ara macao</i>	1	1	0																1	1	0	
Red-fronted Macaw	<i>Ara rubrogenys</i>	3	3	0				4	1	0							1	1	0	6	3	0	
Yellow-naped Macaw	<i>Ara auricollis</i>	1	1	0																1	1	0	
Illiger's Macaw	<i>Ara macana</i>	1	1	0																1	1	0	
Red-masked Conure	<i>Aratinga erythrogenys</i>	2	3	0																2	3	0	
Golden-capped Conure	<i>Aratinga auricapilla</i>	1	1	0	0	1	0										0	1	0	1	1	0	
Queen of Bavaria Conure	<i>Guaruba guarouba</i>	1	1	0				0	0	1	0	0	1	0	0	1				1	1	0	
Thick-billed Parrot	<i>Rhynchopsitta pachyrhyncha</i>	2	3	0				0	2	0				1	0	0	0	1	0	1	4	0	
Lesser Patagonian Conure	<i>Cyanoliseus patagonus</i>	1	0	0													1	0	0	0	0	0	
Blue-throated Conure	<i>Pyrrhura cruentata</i>	1	1	0	3	2	0										1	0	0	3	3	0	
Slender-billed Parakeet	<i>Enicognathus leptorhynchus</i>	2	2	0				3	0	1				0	0	1	3	0	0	2	2	0	
Yellow-faced Parrotlet	<i>Forpus xanthops</i>	4	1	0	1	2	0							1	1	0	1	0	0	3	2	0	
Grey-cheeked Parakeet	<i>Brotogeris pyrrhopterus</i>	3	2	0										1	2	0				2	0	0	
Lilacine Amazon Parrot	<i>Amazona autumnalis lilacina</i>	2	1	0	1	1	0	0	2	0				0	1	0	1	2	0	2	1	0	
Cuban Amazon	<i>Amazona leucocephala</i>	1	1	0	1	0	0	1	2	0							1	1	0	2	2	0	
Green-cheeked Amazon	<i>Amazona viridigenalis</i>	2	2	0				2	2	0							1	1	0	3	3	0	
Hawk-headed Parrot	<i>Deroptyus accipitrinus accipitrinus</i>	1	0	0	1	0	0										1	0	0	1	0	0	

Juvenile Lilacine Amazon Parrot - 2 were hatched in 1994.
Photograph by Dr R. Wilkinson Curator of Birds



Thick-billed Parrot - 2 were hatched in 1994.
Photograph by Dr R. Wilkinson Curator of Birds



BIRDS continued

		STOCK	RECEIVED	BORN/H'CH	D.N.S.	DEATHS	DISPOSALS	STOCK
		1/1/1994	M F Y/?	M F Y/?	30 DAYS	OTHERS	M F Y/?	31/12/94
		M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?
CUCULIFORMES								
Red-crested Turaco	<i>Tauraco erythrolophus</i>	0 0 0	1 1 0	0 0 1	0 0 1			1 1 0
Schalow's Turaco	<i>Tauraco schalowi</i>	2 2 0	1 0 0	1 1 0		1 1 0	0 1 0	3 1 0
White-cheeked Turaco	<i>Tauraco leucotis</i>	2 1 0						2 1 0
Violet Plantain Eater	<i>Musophaga violacea</i>	1 1 0						1 1 0
STRIGIFORMES								
Barn Owl	<i>Tyto alba</i>	1 1 0	0 1 0	0 0 4		0 1 0	0 0 4	1 1 0
White-faced Scops Owl	<i>Otus leucotis</i>	1 4 0		2 1 0			2 4 0	1 1 0
Milky Eagle Owl	<i>Bubo lacteus</i>	1 1 0	1 0 0			1 0 0		1 1 0
Snowy Owl	<i>Nyctea scandiaca</i>	2 2 0		0 0 5	0 0 4	0 0 1		2 2 0
Vermiculated Fishing Owl	<i>Scotopelia bouvieri</i>	0 1 0						0 1 0
Rufous Fishing Owl	<i>Scotopelia ussheri</i>	0 1 0				0 1 0		0 0 0
Ferruginous Pygmy Owl	<i>Glaucidium brasilianum</i>	0 0 0	1 1 0					1 1 0
Great Grey Owl	<i>Strix nebulosa</i>	0 0 0	1 1 0					1 1 0
Spectacled Owl	<i>Pulsatrix perspicillata</i>	2 2 0	0 1 0					2 3 0
CAPRIMULGIFORMES								
Tawny Frogmouth	<i>Podargus strigoides</i>	2 2 0		0 0 1			0 0 1	2 2 0
APODIFORMES								
Sparkling Violetear	<i>Colibri caruscans</i>	0 0 1				0 0 1		0 0 0
COLIIFORMES								
Red-backed Mousebird	<i>Colius castanotus</i>	0 0 1						0 0 1
CORACIIFORMES								
Hoopoe	<i>Upupa epops</i>	2 2 0				0 1 0	1 0 0	1 1 0
Blue-crowned Motmot	<i>Momotus momota</i>	2 1 0					1 0 0	1 1 0
Blue-winged Kookaburra	<i>Dacelo leachii</i>	0 0 0	1 1 0					1 1 0
Kookaburra	<i>Dacelo novaeguineae</i>	0 1 0	1 0 0	2 0 0				3 1 0
Lilac-breasted Roller	<i>Coracias caudata</i>	0 0 0	1 1 0					1 1 0
Grey Hornbill	<i>Tockus nasutus epirhinus</i>	1 1 0		2 2 0			0 2 0	3 1 0
Trumpeter Hornbill	<i>Bycanistes buccinator</i>	1 1 0		0 0 3		0 0 1		1 1 2
Great Indian Hornbill	<i>Buceros bicornis</i>	1 1 0						1 1 0
Rhinoceros Hornbill	<i>Buceros rhinoceros</i>	1 1 0						1 1 0
Wrinkled Hornbill	<i>Aceras carrugatus</i>	1 1 0						1 1 0
Tarctic Hornbill	<i>Penelopides panini</i>	1 0 0					1 0 0	0 0 0
PICIFORMES								
Toco Toucan	<i>Ramphastos toco</i>	1 1 0						1 1 0
Channel-billed Toucan	<i>Ramphastos vitellinus</i>	4 2 0		0 0 6	0 0 4	2 1 2	2 0 0	0 1 0
White Woodpecker	<i>Leuconerpes candidus</i>	1 1 0					0 1 0	1 0 0

White-faced Scops Owl - 3 were hatched in 1994.
Photograph by Dr R. Wilkinson Curator of Birds

Blue-winged Kookaburra. Presently we have the only pair in the UK.
Photograph by Dr R. Wilkinson Curator of Birds



PASSERIFORMES

		STOCK 1/1/1994 M F Y/?	RECEIVED M F Y/?	BORN/H'CH M F Y/?	D.N.S. 30 DAYS M F Y/?	DEATHS OTHERS M F Y/?	DISPOSALS M F Y/?	STOCK 31/12/94 M F Y/?
Blue-winged Pitta	<i>Pitta brachyura</i>	1 0 0						1 0 0
Red-eared Bulbul	<i>Pycnonotus jocosus</i>	1 1 3		0 0 5	0 0 2	0 0 2		1 1 4
Chinese Bulbul	<i>Pycnonotus sinensis</i>	1 1 0		0 0 2	0 0 2	0 1 0		1 0 0
Fairy Bluebird	<i>Irena puella</i>	2 1 0	0 2 0	0 0 1	0 0 1	1 0 0		1 3 0
White-rumped Shama	<i>Copsychus malabaricus</i>	2 0 0	1 0 0					3 0 0
Plumbeous Redstart	<i>Rhyacornis fuliginosus</i>	1 0 0	1 1 0			2 0 0		0 1 0
Yellow-throated Laughing Thrush	<i>Garrulax galbanus</i>	2 2 1						2 2 1
Orange-headed Ground Thrush	<i>Zoothera citrina</i>	2 0 0	0 1 0			1 0 0		1 1 0
Red-tailed Laughing Thrush	<i>Garrulax milnei</i>	1 1 0		0 0 2	0 0 1			1 1 1
Pekin Robin	<i>Leiothrix lutea</i>	1 1 2		0 0 5	0 0 1		0 0 3	1 1 3
Silver-eared Mesia	<i>Leiothrix argentauris</i>	1 2 0						1 2 0
Red-faced Liocichla	<i>Liocichla phoenicea</i>	0 0 0	1 0 0					1 0 0
Mountain Fulvetta	<i>Alcippe peracensis</i>	0 0 0	0 0 2			0 0 1		0 0 1
Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	0 0 0	0 0 2			0 0 1		0 0 1
Narcissus Flycatcher	<i>Ficedula narcissina</i>	0 0 0	0 1 0					0 1 0
Splendid Sunbird	<i>Nectarinia coccinigastra</i>	1 0 0						1 0 0
Oriental White-eye	<i>Zosterops palpebrosa</i>	0 0 2	0 0 2					0 0 4
Blue-grey Tanager	<i>Thraupis episcopus</i>	0 0 1						0 0 1
Silver-beaked Tanager	<i>Ramphocelus carbo</i>	3 1 0		0 0 5	0 0 5	1 0 0		2 1 0
Yellow-rumped Tanager	<i>Ramphocelus flammigerus icteronotus</i>	0 1 0				0 1 0		0 0 0
Virginian Cardinal	<i>Cardinalis cardinalis</i>	0 1 0				0 1 0		0 0 0
Giant Cowbird	<i>Scapipura oryzivora</i>	1 0 0				1 0 0		0 0 0
Mexican House Finch	<i>Carpodacus mexicanus</i>	2 2 1		2 1 5	0 0 3	1 0 0		3 3 3
Beavan's Bullfinch	<i>Pyrrhula erythaca</i>	1 0 0				1 0 0		0 0 0
Red-billed Firefinch	<i>Lagonosticta senegala</i>	0 0 0	1 1 0					1 1 0
Red-cheeked Cordon-bleu	<i>Uraeginthus bengalus</i>	1 0 0	5 5 0			1 1 0		5 4 0
Orange-cheeked Waxbill	<i>Estrilda melpoda</i>	1 1 0	0 1 0			0 1 0		1 1 0
Red Avadavat	<i>Amandava amandava</i>	0 0 0	1 1 0			0 1 0		1 0 0
Golden-breasted Waxbill	<i>Amandava subflava</i>	0 0 0	1 1 0			1 0 0		0 1 0
Gouldian Finch	<i>Chloebia gouldiae</i>	0 2 0	6 4 0			3 5 0		3 1 0
Bicheno Finch	<i>Poephila bichenovii</i>	0 0 0	0 0 6					0 0 6
Zebra Finch	<i>Poephila guttata</i>	1 2 0		0 0 2			0 0 2	1 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 1		0 0 1	0 0 1			1 1 1
Java Sparrow	<i>Padda oryzivora</i>	0 0 11		0 0 19	0 0 3	0 0 5	0 0 5	0 0 17
Javeta Golden Weaver	<i>Ploceus castaneiceps</i>	5 0 0				1 0 0		4 0 0
Red-billed Weaver	<i>Quelea quelea</i>	1 1 0						1 1 0
Fire-fronted Bishop	<i>Euplectes diadematus</i>	1 0 0						1 0 0
Asian Glossy Starling	<i>Aplonis panayensis</i>	1 1 1		0 0 4				1 1 5
Red-winged Starling	<i>Onycognathus morio</i>	1 1 0	0 1 0			0 1 0		1 1 0
Blue-eared Glossy Starling	<i>Lamprotornis chalybaeus</i>	1 1 0				0 1 0		1 0 0
Purple Glossy Starling	<i>Lamprotornis purpureus</i>	1 1 0		0 0 3	0 0 3	1 0 0		0 1 0
Emerald Starling	<i>Lamprocolius iris</i>	1 1 3		0 0 2	0 0 2	0 0 1		1 1 2
Amethyst Starling	<i>Cinnyricinclus leucogaster</i>	3 2 0						3 2 0
African Pied Starling	<i>Spreo bicolor</i>	0 2 0						0 2 0
Superb Starling	<i>Spreo superbus</i>	3 2 0		0 0 2	0 0 1	0 0 1		3 2 0
Fischer's Starling	<i>Spreo fischeri</i>	2 0 0					2 0 0	0 0 0
Ashy Starling	<i>Cosmopsarus unicolor</i>	0 1 0				0 1 0		0 0 0
Royal Starling	<i>Cosmopsarus regius</i>	2 1 0		0 0 4	0 0 4			2 1 0
Hali Starling	<i>Leucopsar rothschildi</i>	6 5 1	2 2 0	5 3 9	0 0 9	2 0 1	2 3 0	9 7 0
Red-billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	1 1 0		3 1 5	0 0 5		3 1 0	1 1 0
Azure-winged Magpie	<i>Cyanopica cyana</i>	5 3 0		0 0 6	0 0 5		1 1 1	4 2 0
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	3 3 0	1 0 0					4 3 0
		<u>371 343 95</u>	<u>85 80 21</u>	<u>70 45 271</u>	<u>1 0 106</u>	<u>55 58 46</u>	<u>68 55 86</u>	<u>402 355 149</u>
		809	186	386	107	159	209	906

No of specimens 906
No of species 201

This large interpretational sign for the Mauritius Kestrel aviary was researched and written by the Animal Division staff and produced locally.



REPTILES

		STOCK	RECEIVED	BORN/H'CH	D.N.S.	DEATHS	DISPOSALS	STOCK
		1/1/1994			30 DAYS	OTHERS		31/12/94
		M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?	M F Y/?
CHELONIA								
Red Legged Tortoise	<i>Geochelone carbonaria</i>	1 6 0						1 6 0
Greek Tortoise	<i>Testudo graeca</i>	7 4 0						7 4 0
Hermans Tortoise	<i>Testudo hermanni</i>	10 8 0						10 8 0
Aldabra Giant Tortoise	<i>Geochelone gigantea</i>	0 3 0						0 3 0
Matamata Turtle	<i>Chelus fimbriatus</i>	0 1 1	2 0 4					2 1 5
Malayan Box Turtle	<i>Cuora ambainensis</i>	2 2 3		0 0 1				2 2 4
Carolina Box Turtle	<i>Terrapene ornata carolinensis</i>	0 0 5					0 0 5	0 0 0
CROCODYLIA								
Mississippi Alligator	<i>Alligator mississippiensis</i>	1 2 0						1 2 0
Broad-fronted Crocodile	<i>Osteolaemus tetraspis</i>	0 0 4						0 0 4
Johnston's Crocodile	<i>Crocodylus johnstoni</i>	0 1 0						0 1 0
RHYNCHOCEPHALIA								
Tuatara	<i>Sphenodon punctatus</i>	0 1 0	3 5 0					3 6 0
SAURIA								
Egyptian Spiny-tailed Lizard	<i>Uromastyx aegyptius</i>	2 2 0						2 2 0
Northern Green Gecko	<i>Naultinus elegans</i>	4 3 0				2 1 0		2 2 0
Tokay Gecko	<i>Gekko gekko</i>	2 10 19					1 8 15	1 2 4
Leopard Gecko	<i>Eublepharis macularius</i>	3 11 4		0 0 138			128	3 11 14
Forest Gecko	<i>Hoplodactylus granulatus</i>	1 2 0						1 2 0
Common Iguana	<i>Iguana iguana</i>	3 6 3	2 1 0					5 7 3
Black Spiny-tail Iguana	<i>Ctenosaura similis</i>	4 1 0						4 1 0
Rhinoceros Iguana	<i>Cyclura cornuta</i>	2 4 5						2 4 5
Thailand Water Dragon	<i>Physignathus cocincinus</i>	0 2 5				0 1 1		0 1 4
Eastern Water Dragon	<i>Physignathus lesuerii lesuerii</i>	2 3 0						2 3 0
Philippine Sail Fin Lizard	<i>Hydrosaurus pustulatus</i>	7 10 3		0 0 1	0 0 1	1 1 0	1 0 3	5 9 0
Plumed Basilisk	<i>Basiliscus plumifrons</i>	3 15 50		0 0 61		0 2 0	0 0 110	3 13 1
Prehensile-tailed Skink	<i>Corucia zebrata</i>	8 5 1		0 0 1				8 5 2
Salvator Monitor	<i>Varanus salvator</i>	1 1 0				1 0 0		0 1 0
SERPENTES								
Brazilian Rainbow Boa	<i>Epicrates cenchria cenchria</i>	1 2 0		0 0 6		0 1 0		1 1 6
Sunbeam Snake	<i>Xenopeltis unicolor</i>	1 1 15		0 0 7		0 0 5		1 1 17
Royal Python	<i>Python regius</i>	2 2 3				1 0 0		1 2 3
Rubber Boa	<i>Charina bottae</i>	2 0 0						2 0 0
Green Tree Python	<i>Chondropython viridis</i>	4 2 0						4 2 0
Green Anaconda	<i>Eunectes murinus</i>	1 1 0						1 1 0
Boa Constrictor	<i>Constrictor constrictor</i>	2 0 0	0 1 0					2 1 0
Cuban Boa	<i>Epicrates angulifer</i>	6 4 2	2 0 0			1 1 0	5 2 2	2 1 0
Jamaican Boa	<i>Epicrates subflavus</i>	1 2 12		0 0 15		0 1 2	0 0 4	1 1 21
Madagascar Boa	<i>Sanzinia madagascariensis</i>	2 0 0	1 3 0			0 2 0		3 1 0
Honduran Milk Snake	<i>Lampropeltis triangulum</i>	1 0 3		0 0 1		0 0 2		1 0 2
Jewel Racer	<i>Drymobius margaretfiferus</i>	3 1 0				1 0 0		2 1 0
Mangrove Snake	<i>Boiga dendrophilla</i>	0 1 0						0 1 0
Indian Cobra	<i>Naja naja</i>	1 1 0		0 0 9	0 0 1		0 0 8	1 1 0
Green Mamba	<i>Dendroaspis angusticeps</i>	1 1 0						1 1 0
Puff Adder	<i>Bitis arietans</i>	1 1 0						1 1 0
Tropical Rattlesnake	<i>Crotalus durissus colineatus</i>	1 2 0						1 2 0
Moojen's Fer-de-Lance	<i>Bothrops moojeni</i>	1 1 0				1 1 0		0 0 0
Maximilians Viper	<i>Bothrops neuwiedi</i>	1 1 0				1 1 0		0 0 0
		95 126 138	10 10 4	0 0 240	0 0 2	9 12 10	7 10 275	89 114 95
		359	24	240	2	31	292	298
No of species - 41								
No of specimens - 298								

AMPHIBIA

		STOCK	RECEIVED	BORN/H'CH	D.N.S.	DEATHS	DISPOSALS	STOCK
		1/1/1994			30 DAYS	OTHERS		31/12/94
		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 16						0 0 16
Axolotl (Black Form)	<i>Amblystoma mexicanum</i> aq	0 1 0	0 0 10			0 0 2		0 1 8
Axolotl (White Form)	<i>Amblystoma mexicanum</i> aq	0 0 11	0 0 6	0 0 20	0 0 17	0 0 6		0 0 14
Japanese Fire-bellied Newt	<i>Cynops pyrrhogaster</i> aq	0 0 12	0 0 2			0 0 4		0 0 10
Green Tree Frog	<i>Hyla cinerea</i>	0 0 0						0 0 0
Red Eyed Tree Frog	<i>Agalychnis callidryas</i>	0 0 0	0 0 10			0 0 2		0 0 8
Giant Amazonian Tree Frog	<i>Hyla boans</i>	0 0 0	3 3 0			3 0 0		0 3 0
White's Tree Frog	<i>Litoria caerulea</i>	1 3 0	5 5 0					6 8 0
New Guinea Tree Frog	<i>Litoria infrafrenata</i>	3 4 0				2 2 0		1 2 0
3 Striped Poison Arrow Frog	<i>Epipedobates trivittatus</i>	3 3 77		0 0 40			0 0 77	3 3 40
Brazilian Horned Frog	<i>Ceratophrys cornuta</i>	0 0 0	3 3 0			2 1 0		1 2 0
Argentine Ornate Horned Frog	<i>Ceratophrys ornata</i>	1 1 0	0 0 9			0 0 2		1 1 7
African Bullfrog	<i>Pyxicephalus adspersus</i>	1 3 0						1 3 0
Albino South African Clawed Frog	<i>Xenopus laevis</i> aq	1 3 0	1 0 0			1 1 0	0 1 0	1 1 0
Nigerian Clawed Frog	<i>Xenopus tropicalis</i> aq	0 0 5						0 0 5
Climbing Toad	<i>Pedastildes hosei</i>	0 1 0						0 1 0
Fire Bellied Toad	<i>Bombina orientalis</i>	3 6 0					3 6 0	0 0 0
Dwarf Congo Frog	<i>Hymenochirus boettgeri</i> aq	0 0 3	0 0 20	0 0 50	0 0 30	0 0 8	0 0 30	0 0 5
Surinam Toad	<i>Pipa pipa</i> aq	0 0 0	0 0 12					0 0 12
		13 25 124	12 11 69	0 0 110	0 0 47	8 4 24	3 7 107	14 25 125
		162	92	110	47	36	117	164
No of species - 19								
No of specimens - 164								

aq indicates species kept in the Aquarium

INVERTEBRATES

ARACHNIDS

Pink-toe Tarantula	<i>Avicularia avicularia</i>	★	3
Mexican Red-knee Tarantula	<i>Euatalus smithii</i>	★	21

INSECTS

Jungle Nymph	<i>Heteropryx dilitata</i> sp.	★	12
Stick Insect	<i>Baculum extradentatum</i>	★	22
Spiny Stick Insect	<i>Eurycantha calcarata</i>	★	15
McCleays Spectre	<i>Extastoma tiaratum</i>	★	4
Seychelles Millipede	<i>Scathiosreptus seychellarum</i>	★	6
Fruit Beetle	<i>Pachnada</i> sp.	★	50

MOLLUSCS

Sea Hare	<i>Aplysia</i> sp.	aq	9
Turbo Snail	<i>Turbo castaneus</i>	aq	6
Drill	<i>Thais</i> sp.	aq	7
African Land Snail	<i>Achatina fulica</i>	★	15
Partula Snail	<i>Partula varia</i>	★	36
Partula Snail	<i>Partula taeniata</i>	★	57
Partula Snail	<i>Partula tohiveana</i>	★	143
Conch	<i>Fusinus polygonoides</i>	aq	1
Clam	<i>Tridacna derasa</i>	aq	2

Number of Specimens - 494

Number of Species - 35

★ indicates species bred in the Society's collection in 1994

aq indicates species kept by the Aquarium

Main picture: The 8 juvenile *Tuatara* settled in to their new home very quickly. Landscaping, planting, a stream, new roof panels, lighting, interpretational signs and background paintings of their island homes off the coast of New Zealand were all ready in time for their arrival. Chester Zoo has the largest collection of these reptiles in Europe.

COELENTERATES

Sea Anemone	<i>Heteractis</i> sp.	aq★	5
Sand Anemone	<i>Phymanthus crucifer</i>	aq	1
Leather Coral	<i>Sarcophyton trachelophorum</i>	aq★	11
Soft Coral	<i>Xenia</i> sp.	aq★	9
Tree Soft Coral	<i>Litophyton</i> sp.	aq	1
Zoanthid Colony	<i>Zoanthid</i> sp.	aq	2
Soft Coral	<i>Sinularia</i> sp.	aq	1
Soft Coral	<i>Cladiella</i> sp.	aq★	10
Hard Coral	<i>Catalaphylla</i> sp.	aq	1
Brain Coral	<i>Trachyphyllia geoffroyi</i>	aq	1
Mushroom Polyps	<i>Actinodiscus</i> sp.	aq	30

CRUSTACEANS

Banded Coral Shrimp	<i>Stenopus hispidus</i>	aq	2
Cleaner Shrimp	<i>Lysmata grahami</i>	aq	1
Hermit Crab	<i>Dardanus</i> sp.	aq	1

ECHINODERMS

Red Pencil Urchin	<i>Hetrocentrotus mammillatus</i>	aq	3
Slate Pencil Urchin	<i>Eucidaris tribuloides</i>	aq	1
Serpent Starfish	<i>Ophiolepis superba</i>	aq	2
Green Brittle Starfish	<i>Ophiarachna incrassata</i>	aq	3

TOTAL

494

Inset Pictures left: Maori chief Ben Hippolite, and his wife Tammy accompanied the *Tuatara*. Here, Ben shows the TV cameras a "toanga" – the Maori name for the *Tuatara* means "treasure" – inside their new home in the Tropical House.

Right: Herpetologist Keith Brown (left) receives a *Tuatara* from Senior Keeper Isolde McGeorge (right) as they are transferred from their travelling crate.



(DIPNOI) PROTOPTERIDAE

African Lung Fish *Protopterus annectens* 1

OSTEOGLOSSIDAE

South American Arowana *Osteoglossum bicirrhosum* 2
Black Arowana *Osteoglossum ferreirai* 2
Asiatic Arowana *Scleropages formosus* 4

NOTOPTERIDAE

African Knife Fish *Xenomystus nigri* 2

MORMYRIDAE

Blunt Jaw Elephant Trunkfish *Gnathonemus elephas* 4
Elephant Trunkfish *Gnathonemus ibis* 4
Long-nosed Elephant Trunkfish *Gnathonemus petersi* 6
Angolan Elephant Trunkfish *Campylomormyrus cassaicus* 5
Down Poker *Campylomormyrus rynchophorus* 4
Short-nosed Elephant Trunkfish *Marcusenius angolensis* 4
Short-faced Elephant Trunkfish *Mormyrus longirostris* 2
Round-nosed Elephant Trunkfish *Pollimyrus castelnaui* 4

POLYPTERIDAE

Marbled Bichir *Polypterus palmas* 1
Ornate Bichir *Polypterus ornatipinnis* 3

CHARACIDAE

Red-eyed Characin *Arnoldichthys spilopterus* 5
Long-finned Characin *Brycinus longipinnis* 4
Cardinal Tetra *Paracheirodon axelrodi* 50
Congo Tetra *Phenacogrammus interruptus* 13
Emperor Tetra *Nematobrycon palmeri* ★ 24
Black Phantom Tetra *Megalampodus megalopterus* 11
Gold Tetra *Hemigrammus rodwayi* 20
Mafia Island Killifish *Nothobranchius korthausae* 20

GYRINOCHEILIDAE

Sucking Loach *Gyrinocheilus aymonieri* 10

GASTERAPELECIDAE

Marbled Hatchetfish *Carnegiella strigata* 12

CYPRINIDAE

Silver Shark *Balantiocheilus melanopterus* 8
Cherry Barb *Capoeta titteya* 9
Goldfish various *Carassius auratus* ★ 100
Grass Carp *Ctenopharyngodon idella* 6
Mirror Carp *Cyprinus carpio* var. 8
Koi Carp *Cyprinus carpio* var. 35
Blind Cave Fish *Garra barreimiae* 135
Golden Orfe *Idus idus* 15
Cummings Barb *Puntius cummingi* 7
Ikan Temoleh *Probarbus jullieni* 7
Black Ruby Barb *Puntius nigrofasciatus* ★ 30
Golden Rudd *Scardinius erythrophthalmus* var. ★ 100

COBITIDAE

Clown Loach *Botia macracantha* 10
Dwarf Loach *Botia sidhimunki* 10

ELECTROPHORIDAE

Electric Eel *Electrophorus electricus* 2

CICHLIDAE

Lake Victoria Cichlid *Haplochromis obliquidens* ★ 10
Lake Victoria Cichlid *Astatoreochromis alluaudi* ★ 14
Lake Victoria Cichlid *Haplochromis 'argens'* ★ 62
Lake Victoria Cichlid *Haplochromis nyereri* 11
Lake Victoria Cichlid *Haplochromis pyrrhocephalus* ★ 493
Lake Victoria Cichlid *Haplochromis riponianus* ★ 70
Lake Victoria Cichlid *Haplochromis sauvagei* ★ 37
Lake Victoria Cichlid *Haplochromis 'velvet black-blotched'* ★ 415
Lake Victoria Cichlid *Haplochromis xenognathus* ★ 41
Ojokoto tilapia *Tilapia guinasana* ★ 176
Frontosa *Cyphotilapia frontosa* ★ 20
Heckel Discus *Symphysodon discus discus* 6
Lake Malawi Cichlid *Rhamphochromis macrophthalmus* 2
Lake Malawi Cichlid *Nimbochromis venustus* 6
Lake Malawi Cichlid *Melanochromis auratus* ★ 30
Lake Malawi Cichlid *Copadichromis borleyi* 1
Lake Malawi Cichlid *Pseudotropheus elongatus chailosi* ★ 50
Lake Malawi Cichlid *Cyrtocara moorii* 10
Lake Malawi Cichlid *Pseudotropheus socolofi* ★ 100
Yellow Fin *Pseudotropheus acei* 6
Lake Malawi Cichlid *Pseudotropheus lombardoi* ★ 20
Lake Malawi Cichlid *Pseudotropheus aurora* 4
Lake Malawi Cichlid *Pseudotropheus elongatus ornatus* 12
Lake Malawi Cichlid *Protomelas taeniolatus* 2
Lake Malawi Cichlid *Labidochromis caeruleus* ★ 30
Lake Malawi Cichlid *Labidochromis chisumulae* 10
Lake Malawi Cichlid *Labeotropheus fuelleborni* ★ 40
Lake Malawi Cichlid *Nimbochromis polystigma* 3
Altum Angelfish *Pterophyllum scalare altum* 4

ANABANTIDAE

Leopard Climbing Perch *Ctenopoma acutirostre* 2
Pearl Gourami *Trichogaster leeri* 2
Sparkling Gourami *Trichopsis pumilus* 8

ATHERINIDAE

Red Rainbow Fish *Glossolepis incisus* ★ 56
Boeseman's Rainbow Fish *Melanotaenia boesemani* ★ 30
Lake Tebera Rainbow Fish *Melanotaenia herbertaxelrodi* ★ 30
Lake Kutubu Rainbow Fish *Melanotaenia lacustris* ★ 140

ICTALURIDAE

Channel Catfish *Ictalurus punctatus* 4

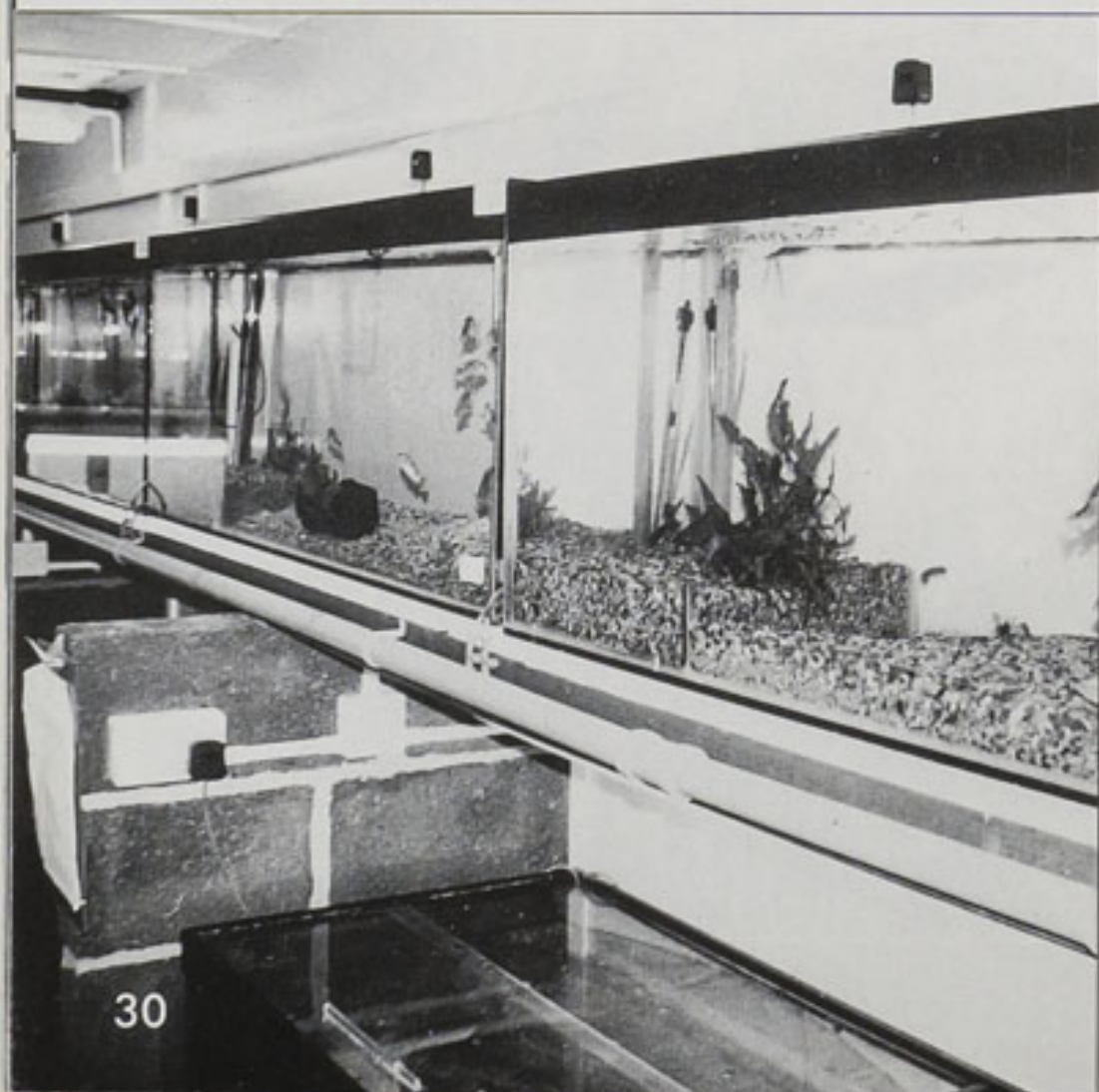
MOCHOKIDAE

Polka-dot Upside-down Catfish *Synodontis angelicus* 8
Upside-down Catfish *Synodontis nigriventris* 8
Upside-down Catfish *Synodontis nigrita* 1
Lake Malawi Upside-down Catfish *Synodontis nyassae* 6

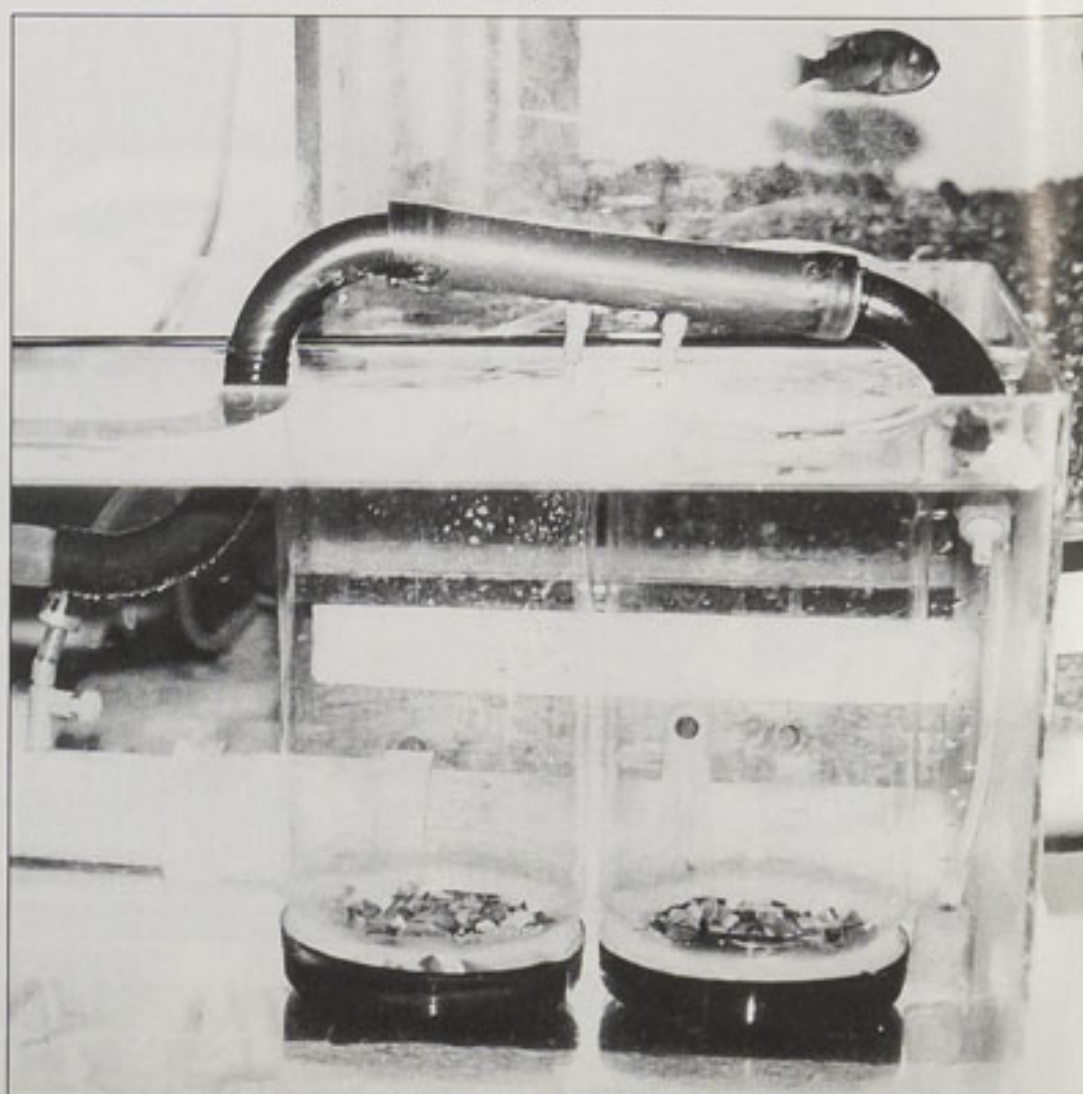
CALLICHTHYIDAE

Arched Corydoras *Corydoras arcuatus* 4
Burgess's Catfish *Corydoras burgessi* ★ 20
Blue Catfish *Corydoras nattereri* 10
Panda Catfish *Corydoras panda* ★ 30
Flag Tail Catfish *Corydoras robiniae* 6

Breeding tanks in the Aquarium 'off show' area



Incubator unit in Aquarium, developed in-house



LORICARIIDAE

Bristlenose Plecostomus	<i>Xenocara dolichoptera</i>	6
Twig Catfish	<i>Farlowella acus</i>	3
Plecostomus Catfish	<i>Hypostomus plecostomus</i>	6
Clown Plecostomus	<i>Peckoltia</i> sp.	12
Whiptailed Catfish	<i>Sturisoma aureum</i>	6
Dwarf Sucking Loach	<i>Otocinclus affinis</i>	12
Angelicus Peckoltia	<i>Peckoltia</i> sp.	2
Emperor Peckoltia	<i>Hypancistrus zebra</i>	1

TOXOTIDAE

Archer Fish	<i>Toxotes jaculator</i>	5
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POTAMOTRYGONIDAE

Fresh-water Stingray	<i>Potamotrygon motoro</i>	★ 6
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HOLOCENTRIDAE

Soldierfish	<i>Myripristis axillaris</i>	2
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CENTRISCIDAE

Shrimpfish	<i>Aeoliscus strigata</i>	2
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SYNGNATHIDAE

Blue Stripe Pipefish	<i>Doryrhamphus excisus</i>	4
Jans Pipefish	<i>Doryrhamphus janssi</i>	2
Banded Pipe Fish	<i>Doryrhamphus dactyliophorus</i>	1

CENTROPOMIDAE

Giant Glass Fish	<i>Parambassis gulliveri</i>	6
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SERRANIDAE

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

Mono	<i>Monodactylus argenteus</i>	1
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SCORPAENIDAE

Dwarf Lionfish	<i>Dendrochirus zebra</i>	2
White Fin Lionfish	<i>Pterois radiata</i>	3
Short Fin Lionfish	<i>Dendrochirus brachypterus</i>	1
Sail Fin Scorpionfish	<i>Hypodytes</i> sp.	4

SCATOPHAGIDAE

Silver Scot	<i>Selenotoca multifasciata</i>	4
Red Tiger Scot	<i>Scatophagus argus</i>	3

POMACENTRIDAE

Skunk Clown Fish	<i>Amphiprion akallopisos</i>	1
Fire Clown Fish	<i>Amphiprion ephippium</i>	3
Tomato Clown Fish	<i>Amphiprion frenatus</i>	2
Common Clown Fish	<i>Amphiprion ocellatus</i>	3
Blue Damsel Fish	<i>Pomacentrus alleni</i>	3

CALLIONYMIDAE

Pink Scooter Blenny	<i>Synchiropus</i> sp.	3
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ACANTHURIDAE

Regal Tang	<i>Paracanthurus hepatus</i>	4
Yellow Tang	<i>Zebrasoma flavescens</i>	7
Sailfin Tang	<i>Zebrasoma veliferum</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>	4
Spiny Puffer Fish	<i>Diodon holacanthus</i>	1

APOGONIDAE

Polka-Dot Cardinal Fish	<i>Sphaeramia nematoptera</i>	5
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LABRIDAE

Dragon Wrasse	<i>Novaculichthys taeniourus</i>	1
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SCARIDAE

Bicolour/Clown Parrotfish	<i>Cetoscarus bicolor</i>	1
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GOBIIDAE

Orange spot Goby	<i>Valencienna puellaris</i>	1
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ANTHIINAE

Lyre-tail Coralfish	<i>Anthias squamipinnis</i>	5
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Total 2894

Number of specimens 2894
Number of species 130

★ denotes species bred in 1994

Haplochromis pyrrhocephalus – brought back from the very brink of extinction. All photographs by Justin Bell, Aquarium Staff.

Fry rearing tanks





MISSION STATEMENT

A statement of strategy for the development of Chester Zoo into the 21st Century

Chester Zoo will consolidate its position as the pre-eminent UK Zoo, and further develop its leading position in the international field of conservation of endangered species.

It will select, breed, exhibit and promote an understanding of those animals in its care in co-operation with like-minded organisations.

To make a positive and constructive contribution to this work, Chester Zoo will operate as a commercially successful visitor attraction.

These functions are mutually supportive, and for each to facilitate the success of the other, certain strategic steps are required:

1. A consistent policy of species selection and exhibition giving greater focus on relevant geographical areas and utilising and integrating the zoological, botanical and horticultural expertise of the Zoo.
2. The number of species kept to be a secondary consideration to the size of their enclosures and the quality of life of the animals. Land outwith the Zoo perimeter to be taken into the Zoo if and when necessary.
3. The North of England Zoological Society to achieve a higher profile for its work with the international zoo network and to integrate its own efforts with those of conservation authorities and governments of countries of origin.
4. The Society to maintain a high quality Educational Service aimed at increasing the understanding of the principles and issues involved in its operation.
5. Zoo interpretation and information services to visitors to be developed in terms of better quality, wider use of available technologies, greater visitor participation and interaction. The Society to work towards setting up an Institute of Zoological Interpretation at the Zoo.
6. Financial management of the Zoo may include use of overdraft facilities for growth and development as and when this is considered prudent.
7. Development and promotion of the "green" image of Chester Zoo by implementation of appropriate recycling and energy efficient policies and programmes.
8. Increased provision of all weather facilities to encourage a more even distribution of visitor numbers over the year.
9. Improvement of general services to the public, including innovation in retailing, catering and public relations.
10. Utilization of non-zoo land, only for the purposes that complement and have synergy with the Society's principles of operation.

SUMMARY

The implementation of the ten strategic steps outlined above will promote and clarify the conservation policy of Chester Zoo, improve and expand both animal and visitor facilities and lead to growth in visitor numbers.

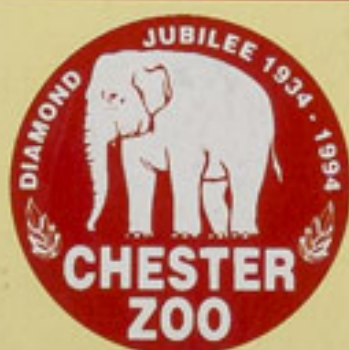
The Zoo will be able to build upon the high reputation it holds within the Zoo community to one of wider public recognition for its work. A focussed exhibition policy, a green image and better public facilities will assist this.

Above all, the Zoo will become a leading centre for the encouragement and fostering of greater understanding and enjoyment of the animal world.

Beatrice J Jones
Chairman.
13th May 1994

THANK YOU

The Society would like to thank everyone who has helped in 1994 – Council, Members, Adopters – personal and corporate Staff – permanent and seasonal, members of the Employment Training Teams, Work Experience Students, Volunteers and Friends. We are also grateful to Suppliers and Contractors for often achieving that "extra" for us that makes all the difference.



The North of England Zoological Society

Registered Charity No. 306077

The Zoo is a member of the North West Tourist Board, the Yorkshire & Humberside Tourist Board, North Wales Tourism, South Cheshire Tourism, and the North Shropshire Tourist

Association. It is a founder member of the Cheshire Tourist Attractions Consortium (Favourite Days Out), and a member of ALVA – The Association of Leading Visitor Attractions.

The 1994 Annual Report was designed and devised by the Zoo Marketing Department, with origination 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: 01244 380280. Fax: 01244 371273