



CHESTER ZOO

THE NORTH OF ENGLAND
ZOOLOGICAL SOCIETY

ANNUAL REPORT

1990



The North of England Zoological Society

A Message from the Chairman

It is with some sadness that I am writing this report for it is my last as Chairman of the Society. By May 1991 I will have completed five years in office and I feel that it is time to step aside for someone else; five years in my opinion is sufficient time for anyone to serve as Chairman without becoming stale and I consider the injection of new ideas, on a regular basis, as essential to the survival of any active and 'live' society if it is to continue to prosper.

In retrospect my time at the zoo has been great fun for both me and my wife Caroline; the Society has, I believe, made significant strides forward towards the twenty-first century. Chester now has one of the finest zoological gardens and societies in Europe - a fact internationally acclaimed, yet hardly recognised by Cestrians themselves - they must look over the walls and be more aware of this asset to their community - not only as a trading entity and substantial employer but as a major tourist and leisure attraction and above all a significant society of scientific interest and education; our breeding policy of endangered species is something of which we should be proud and enthusiastic to prosecute.

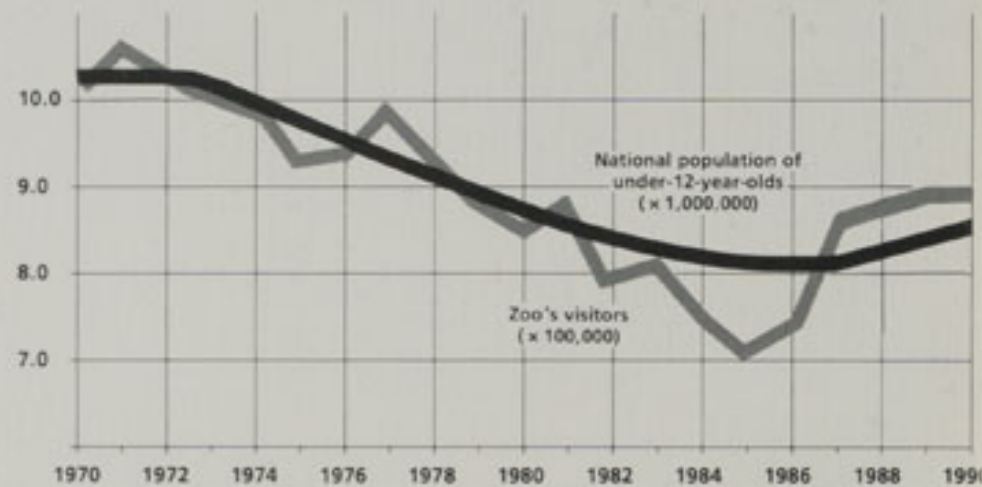
I believe that the estate is now in good heart with the new chimp and parrot houses, refurbished Oakfield catering facilities and the monorail system which is now well advanced and should be operating in April and much else besides.

One of our most significant achievements in the year has been the approval by the City Planning Authority of our plans to relocate our main entrance and car parks adjacent to the A41, coupled with their own plans for a park and ride scheme and possibly one of the termini of the proposed L.R.T. system.

I am sorry that, so far, we have been unable to develop some of our land fronting the A41; I hasten to add that this is not because I see us becoming commercial developers - something which I would always resist, but merely because we need to capitalise on some of our land assets to establish the endowment fund necessary to see us well into the 2000s.

Highlights of the last five years must be the royal visit of H.R.H. the Princess of Wales and the acceptance of His Grace, the Duke of Westminster to become our President; what gives me greatest pleasure though is the knowledge that the whole organisation has become such a pleasant and happy place to visit and in which to work. There will of course always be occasional hiccups in any healthy society, not least at the zoo, but this pleasant atmosphere which does now

ZOO VISITORS



prevail I regard as our greatest achievement in recent years.

I am pleased to be able to report that our trading year was successful leaving us with a surplus of £104,000 having spent £465,000 on zoo development, and 894,397 visitors through our gates - no mean achievement in the present recession - I look forward to reading of our millionth visitor shortly!

Finally, in saying goodbye I must thank everyone connected with the zoo for helping to make my Chairmanship such a happy and rewarding one; especial thanks to my Council, both past and present members, who have

been supportive throughout and to Michael Brambell and his management team who really have achieved wonders - you are really very lucky indeed to have them at the daily helm of the Society. Lastly, my sincere good wishes for an equally happy and successful term to my successor. Thank you all.

Andrew Thomson



Bornean orang-utans - baby Pundu and mother Lola

President

His Grace, The Duke of Westminster DL

Vice Presidents

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

The Council

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

* Died October 1990

Membership as at 31st December 1990

Life Members	172	
Honorary Members	8	
Members of more than 25 years standing and over pensionable age	22	
Annual Members	2064	2266
Associate Members	4	
Junior Members	1051	1055
TOTAL (All categories)		3321

Director of Chester Zoo and Company Secretary

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

Financial Controller and Deputy Director

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



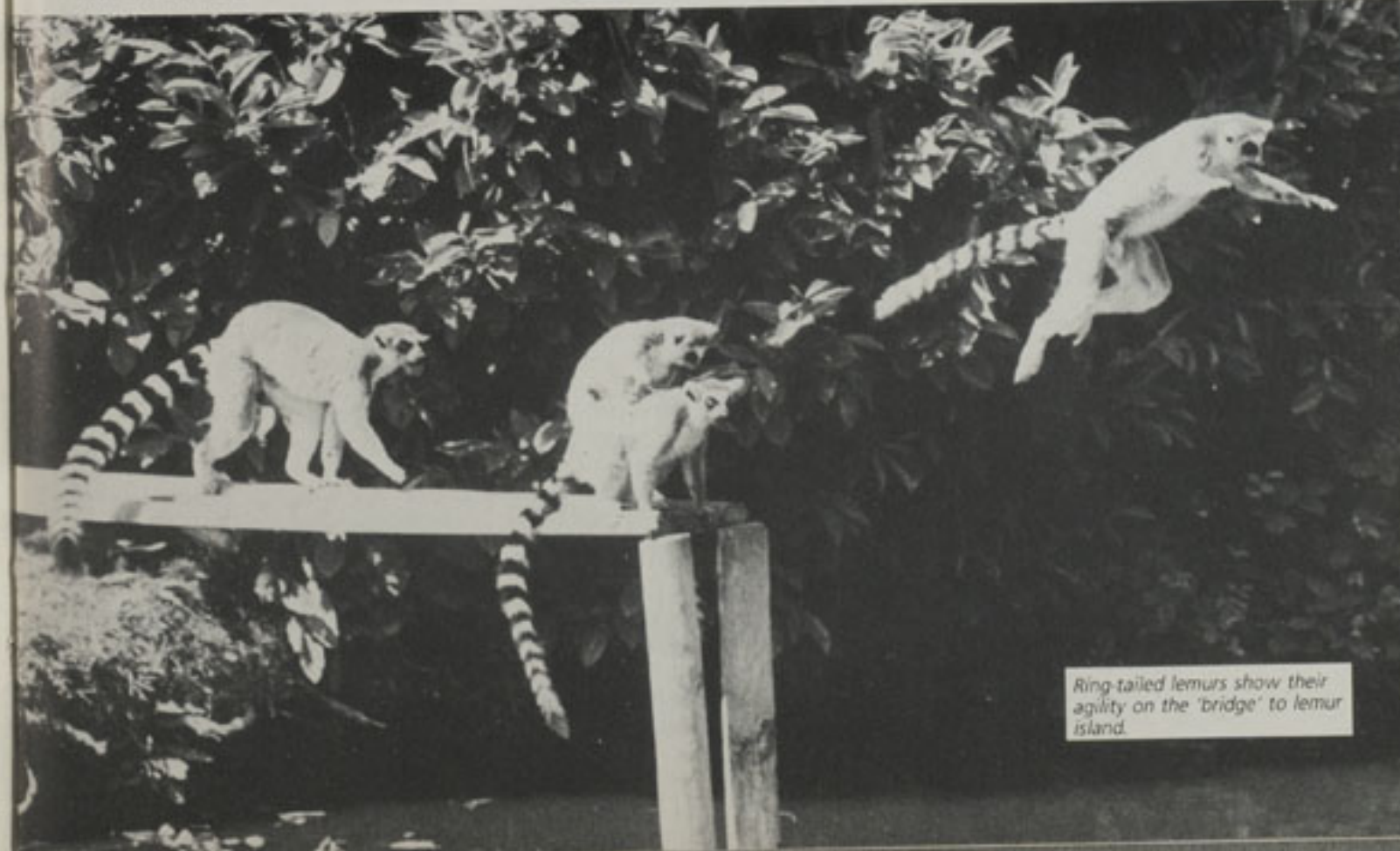
Giants ICI and British Telecom have reportedly spent considerable sums on redesign of their logos. We too have a newly styled logo, but happily, without their costs. The new version of the elephant is now appearing on stationary, vehicles and displays.



The Society application to join the I.U.C.N. - the International Union for Conservation of Nature (now styled the World Conservation Union) has been approved, in category B.c1 - National non-governmental organisations. 1990 Spring Zoo Life carried the statement of objectives of the Union.

The Society is a member of the National 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.

Registered Office: Zoological Gardens, Caughall Road, Chester CH2 1LH.
Company Registration: Number 287902 (England)



Ring-tailed lemurs show their agility on the 'bridge' to lemur island.

We hope that the joint management plan for the UK's black rhinoceroses will have resulted in six pregnancies.



Director's Report

1990, by and large, was a good year for Chester Zoo. 894,397 visitors came to the Zoo. Ten thousand (1.1%) fewer than in 1989. The operating surplus fell from £258,000 to £104,000, reflecting several factors, including a higher level of expenses in strengthening the animal collection, increases in provision for depreciation, the costs of reducing the basic working week from 42 hours to 40 hours and of introducing a 'five-day' working week as the norm for all staff.

The Animal Division excelled itself in 1990 with 134 species breeding successfully, many for the first time at Chester Zoo including six possible United Kingdom first zoo breedings. We have been reluctant to extend the number of endangered species we have been keeping until we have made changes to the accommodation. In many instances endangered species are endangered simply because they have more precise environmental requirements and are therefore less adaptable than those species which are currently more successful. For example, the eland is a successful and common species, capable of tolerating much more severe weather and climatic conditions than are met at Chester. Roan antelope is less adaptable and needs warmer, drier housing and firmer paddock surfaces than eland. In 1990 we have begun to make effective progress in upgrading the accommodation for such species. The programme involves the provision of more substantial and better insulated buildings and areas of enclosed hard standing for winter and wet weather. As it progresses we will introduce more 'conservation-needy' species to join the many already thriving here. As I write we have hopes that our efforts to restart black rhinoceros breeding at Chester Zoo through the Joint Management of Species

Programme may be successful. As an example of the part zoos can play in bridging a species over the barren years of the next century black rhinoceros cannot be bettered. They are estimated to number only about 3000 animals or less in the wild and to be disappearing at the rate of five a day or thereabouts. Some success has been achieved at trying to halt this crash dive to extinction in the wild and, hopefully, the species will never become extinct in the wild. Meantime, in parallel with the efforts in the wild, zoo breeding is being co-ordinated so that, for example, all black rhinoceroses in the U.K. are jointly managed. We have reason to believe that all six adult females being jointly managed will produce young in 1990/1991. This would be a tremendous achievement.

We must not forget that it is the achievement of real conservationally significant success which has become the principal standpoint on which zoos will be judged in the future. Everything else we do will be judged secondarily to that main point. Our Education services have been able to pick up some of the activity lost, first through the inept way the rules governing school visits were redefined and secondly through the genuine distraction that the introduction of the National Curriculum has given the teachers. The signs are that this improvement will continue.

Our Estate's activities have been dominated by the development of a transport system, long overdue and much needed if the zoo is to remain a place of choice to visit in future years, especially if the main gate is moved to the West side. The hope is that the overhead railway will be open in the spring of 1991.

So much has been going on that it is difficult to select which to highlight. Perhaps the building of the two new snowy owl aviaries as the result of a

most generous private donation best epitomises the work of the Estate Division.

Considerable time and effort has been put into the negotiations, principally with the City of Chester but also with others, to obtain agreements satisfactory to the Society for moving our access from the congested Caughall Road approach to a new roundabout and new car parking areas off the A41 main road to the west of the zoo. These had not been concluded by the end of the year, though most of the stages had been agreed upon. Our marketing, both within the zoo and outside the zoo, has continued to strengthen itself. Perhaps the most tangible advances have been made in the zoo's shops where modern displays have been introduced with a corresponding rise in the sales. Organisationally the Society has not made any significant changes. In order to offset the pressures to increase administrative staffing levels, computer equipment has continued to be brought in. Amongst the outside staff, i.e. the keepers, gardeners, groundstaff and maintenance staff, we have felt able to reduce the basic working week from 42 hours to 40 hours, and to guarantee two days off each week including every other weekend in spite of having to maintain a seven-day presence. This has resulted in an increase in the establishment of those departments where a minimum safe manning level has to be maintained while the zoo is open. Chester Zoo is going into 1991 in the knowledge that it still has a lot of work to do, that the economic outlook for the country and for the North West is not rosy, but also in the knowledge that the zoo is in much better heart than a year ago.

Michael Brambell
Director of Chester Zoo

Conservation Status Report

Peter Wait
Senior Curator

Our policy is to support endangered species whenever possible, especially in the choice of new species at the zoo. This does not mean losing the old favourites, for many, such as elephants and rhinoceroses are endangered. However, when an old animal in a species not conservationally important dies we may not replace it by another of its kind. Our policy is to obtain our new animals from those bred in our own zoo or bred in other zoos. The growing co-operation between the world's leading zoos means that it is normal for animals to be transferred on breeding loan rather than by purchase and sale.

Within the conservation policy we want to have as wide a collection of the variety of the world's animals giving a good balance of mammals, birds, reptiles and fish. Chester Zoo has had many breeding successes including first UK breedings of paca, dwarf mongoose, jaguarundi, elephant, griffon vulture, crested curassow, Madagascan tree boa and fresh water stingray. Our breeding successes of chimpanzee, red lechwe, margay and ring-tailed lemur have also gained wide recognition.

Most of the endangered species are now jointly managed and many of our animals are included in breeding programmes with other collections. During 1990 the mammal section has received another five female scimitar-horned oryx from Edinburgh and the herd has further increased by recent births. Two more dwarf buffalo were received from Whipsnade and a birth has increased our number of these animals to five. The red lechwe have been most prolific and no fewer than twenty-one have been born during the year. Other breeding successes of endangered species include eleven Rodrigues Island fruit bats and three chimpanzees. A trio of roan antelope (right) were imported from Dvur Kralor Zoo in Czechoslovakia and are the first of this rare species here at Chester.

The bird section had an impressive year with many breeding successes. Seven waldrapp ibis were reared, sarus and crowned crane were bred, and the trumpeter hornbill and channel billed toucan repeated 1989's success for which we received first zoo rearing awards. First breeding awards are anticipated for the greater vasa parrot and red-fronted macaw.



Photo by Peter Wait

An augmented veterinary team, led by Derek Lyon, was successful in removing a deeply abscessed tusk from Jubilee - this complex elephant dental operation has only been attempted eleven times.

We received a female red crowned crane (Siberian crane) from the International Crane Foundation at Baraboo in the United States, in exchange for a male which now gives us a potential breeding pair of this rare species. Seventeen barn owls were reared and released as part of a breeding programme to increase the wild population of this rare British bird in the North West.

The reptile section has also excelled with four first captive breedings in the UK. The breeding of the sunbeam snake is particularly exciting as it may even be a world first. The other three were the jewel snake, helmeted lizard and the black spiny iguana. Ten sailfin lizards were bred, another very rare event in the zoo world, and one hundred and twelve brown basilisks were hatched, an event of more significance than the first zoo breeding of the species that occurred at Chester only a year ago.

Although the aquarium staff have been working under some difficulty due to alterations taking place behind the scenes, many species have been bred.

Arising out of our policy of co-operation with like minded conservation zoos we have sent several species to other collections for breeding. These include ring-tailed lemur, white rhinoceros, red lechwe, Andean condor, grey hornbill,



The handsome roan antelope - now in the cattle house.

Rothschild's mynah (Bali starling), Madagascan tree boa and white-lipped pit viper, (all, with the exception of the white rhinoceros, had been bred at Chester).

We plan to continue our policy of increasing the numbers of endangered species we are supporting, in the hope that one day, those parts of our world from where they originally came, will again be safe enough for us to help in the attempt to re-establish them in their wild habitats.



Maya became the seventh elephant in our group when she joined us from Chessington.

The Animal Collection

Peter Wait Senior Curator

Inflation hits everybody and keeping the animals happy in the gardens is affected as in every other business. 1990 saw the divisional budget grow to over £1 million for the first time, an increase of over £3,000 per week on the previous year.

We thank the generosity of the animal adopters whose adoptions help greatly in the feeding costs and our visitors who continue to come

and enable our work in conservation to continue.

1990 saw many breeding successes including a number of the first breedings recorded in captivity and second generation births. We gained eleven of the Zoo Federation's meritorious awards for these successes. The collection was also enhanced with the addition of a number of new species, most of which are part of breeding

programmes with other collections. The mammal section ended the year with 741 specimens from 87 species, sixteen more animals and one less species than 1989. Two hundred and thirty mammals were born, the survival rate being 77.5%. New to the collection were the black-footed cat and roan antelope both importations from Europe. Other notable arrivals were 1.1 chimpanzee, 0.1 elephant, 0.5 scimitar-horned oryx and 0.2 congo buffalo, all from U.K. Zoos participating in breeding programmes. Births included 14 Rodrigues Island fruitbat, 4 chimpanzee, 13 porcupine, 4 serval, 6 Geoffroys cat and 21 red lechwe.

Animals leaving the collection included the male white rhinoceros who retired to the South of France to join females of his own species. We regret the deaths of two senior members of the chimpanzee group "Babs" and "Jane", who had spent a total of 66 years at Chester.

The bird section ended the year with 798 specimens from 183 species (ten and one up respectively on 1989). An excellent year for hatchings produced 425 of which there was almost a 75% survival rate. Amongst the 76 species breeding were the greater vasa parrot, a probable U.K. first and others such as the red-fronted macaw, Leadbeaters cockatoo and West African crowned crane, all bred for the first time at Chester.

Other notable breedings include the blue-eyed cockatoo, waldrapp ibis, white-winged wood duck and Andean condor.

Almost all of the 279 disposals were bred during the year and the majority transferred to other collections on breeding loans. Seventeen barn owls were reared and went into local release schemes.

The reptile section also had a fruitful year with successful rearings of helmeted lizard, black spiny iguana, sunbeam snake and jewel snake, all believed to be first U.K. breedings. Hatchings of the sail-fin lizard and brown basilisk are also worthy of mention. The brown basilisk, which bred for the first time in the U.K., only last year produced no fewer than 109 young this year.

Work on redesigning the Aquarium somewhat hampered "behind the scenes" work but even so breedings of the brown discus, blue discus and the second generation of whip-tailed catfish were amongst the species bred. More than half of the

refurbished aquarium is now open with colourful displays of marines and Lake Malawi cichlids being particularly interesting.

The veterinary department made 1,463 visits to individual animals involving 472 clinical cases. Immobilisation/anaesthesia took place on 103 occasions and 285 post mortem examinations were conducted.

The food bill rose a little more than the rate of inflation at about 14% and included purchases of 51 tonnes of apples, 41 tonnes of bananas, 80 tonnes carrots, 1,520 dozen cabbage, 3,800 dozen lettuce and 12,045 loaves of bread.

Special diets amounted to 185 tonnes, and other purchases of 270 tonnes hay, 30 tonnes of meat and 16.5 tonnes of fish were made to satisfy our animals' appetites.

Right - The Lake Malawi tank in the newly refurbished section of the aquarium has attracted a great deal of attention.

Below - Seven Waldrapp ibis were reared - our greatest success with this endangered species.





The new aviaries for the snowy owls were constructed by zoo staff.

Estates

The widespread refurbishment and updating of zoo estates together with an extensive maintenance programme continued throughout 1990.

We did not escape the February gales. This forced the zoo to carry out unforeseen, extensive repairs, and in some cases, complete roof renewals. These included the Père David deer house and a new lean-to roof over the tapirs in the elephant house. The bird house, which is due for refurbishment, had its roof covered with plastic netting as a temporary but effective means of preventing the sheets blowing off. The zoo's own maintenance department, under the supervision of Peter Brady, carried out significant new features, including the flamingo shed and outside land and water areas, the snowy owl aviaries and the major refurbishment in the aquarium. The Head Gardener, Eric Rudman, and his staff were once again rewarded for their very high standards by winning the Chester in Bloom Special Award for outstanding achievement together with the North West Tourist Board award for best tourist attraction. The zoo entered the Chelsea Flower Show in a consortium with Tatton Park, Arley Hall, Ness Gardens and Cheshire County Council. The consortium won a silver medal for its woodland garden display. The Head Groundsman, Peter Hughes, and his groundstaff were kept busy in the zoo, collecting up and disposing of litter and keeping the toilets clean and tidy. The equipment for the collection and disposal of rubbish and litter has been updated with the purchase of a new £40,000 mobile compactor which can be seen travelling around the zoo. During the winter the groundstaff concentrated

on renovating benches, pushchairs and rubbish bins. Twenty new wheelchairs were bought to replace existing time-expired equipment. The success of the Government's Employment Training painters and joiners continued throughout the year. The system is valuable to both parties; we benefited with the completion of a vast amount of much needed refurbishment and the E.T. have gained valuable training. The contract for the overhead monorail started on 6th October and the contractors, C.P.M. of Flint, hope to have it in operation by Spring 1991.

S. O'Brien

Education



We are greatly in debt to our FEDs who provide many of our visitor services - like the Tropical House cart seen here.

There was a small increase in educational visits (4.7% on 64,957). This does not compensate for the drop of 1989 but the regulations concerning school visits, the demands of G.C.S.E. and National Curriculum continue to make it difficult for schools to bring parties. Our volunteer group, FEDs flourishes. During the year FEDs talked to over 44,000 visitors on tours round the

zoo, or at our display points. They helped 14,000 make a souvenir in one of the activity centres and gave puppet shows for over 9,000 visitors. Office work took an increasing amount of their time but is essential for the Division. Visiting various groups outside the zoo to give illustrated talks about their activities is the latest venture.

Keeping to our philosophy of helping teachers to guide and teach their own parties, we were able almost to treble the numbers coming on the Christmas Journeys and also to create a new opportunity for such groups as Brownies and Sunday schools.

The Division targeted two groups for whom there had been little provision. Leaders of pre-school parties and of specific young people's organizations can now benefit from pre-visits and the use of educational materials, in order to make the following visit more meaningful.

Our grateful thanks to British Airways for the gift of a large quantity of office furnishings and to North West Securities for the continued sponsorship of the Noah's ark room. Of our many visitors, the Columbus Zoo, U.S.A. Docents (equivalent to our FEDs), on a tour of British zoos, and a group of teachers from Salem State College, U.S.A. (during a study course at Chester College) were particularly enriching for us.

Miss B. M. Norgain



The Christmas journey was even better this year, with a magical atmosphere.

Reports

Judging the photographic competition was a formidable task, and we are most grateful to Miss Jean Dixon, Council member and Miss Pauline McKee, Marketing Secretary for their help in marshalling the 1500 entries. Here Brian Royal (Kuoni), George Green (North Wales Newspapers) and Brian Williams (Williams Barber & Bird, our advertising agents) ponder their selections with Miss Jean Dixon in attendance.



Staff Report

During 1990 the average number of permanent staff rose by twelve and the full time equivalent of temporary staff fell by six.

Within the year Dr Brambell attended the conference of the International Union of Directors of Zoological Gardens held at Copenhagen, Denmark. The Curator of Birds went to the second International Parrot Conference held in Tenerife. He also went to the IUCN Species Survival Commission meeting in Perth, Western Australia. He then went on to Christchurch, New Zealand, for the 20th International Ornithological Congress. The Curator of Mammals went to a Conference on Asiatic Lions held at Sakkarbag Zoo, India, at the time of their 150th Birthday celebration. The Estate Engineer and Mr Ken Roberts went on the tour of Zoos in France that was arranged by the National Federation of Zoological Gardens.

E. A. Du Cros

Membership

During 1990 we actively promoted Membership of the Society through targeted mailing shots. The year end total of 2,064 annual members (an increase of 249 over 1989) indicates that this direct approach does achieve good results.

A large screen video has been installed in the newly redecorated lecture theatre and has proved a useful means of keeping members abreast of zoo news. Meetings were well attended, ranging from a talk about Pacific Islands to an evening performance of light and classical music. The Society's President, The Duke of Westminster, attended the

March meeting, and the year's programme concluded with a splendid Christmas lunch in the Oakfield Restaurant, enjoyed by over 50 members.

The members' fund raising campaign to build a new enclosure for the lion-tailed macaques was launched in December; it is hoped the appeal will raise £10,000.

We want to thank everyone who has contributed to the successful running of meetings during the year.

Mrs. M. M. A. Allsopp

Marketing

Investment continued. The Fountain shops were totally refitted, and retail turnover rose impressively by over a quarter on 1989 (+25.3%).

In catering Sue Clews stepped up most ably after Charles Horton left, and Richard Casson joined us to run the Oakfield after Michéle O'Sullivan decided to go globe trotting to South America. Both catering departments exceeded budgeted sales.

Function business was buoyant, with the biggest being the Shell Thornton Golden Jubilee celebrations. Well done Party Office and Oakfield.

Skilful media management brought extensive cover - we fill a complete press cutting book each year!

We added TV advertising on Central's Western transmitter and continued on Granada and Harlech - reaching over a quarter of the UK.

New posters, folders and brochures, achieved a consistent print identity. Father Christmas and the reindeer were impeccable.

C. M. N. Vere

Adoptions

Adoptions was more popular than ever, with 2,119 adopters raising £62,000 towards our annual grocery

bills of £200,000+.

Prairie Marmots continue to be top of the popularity stakes, with penguins, tigers and tortoises coming a close second. It is noteworthy that endangered/threatened species are attracting more adopters.

Mrs. M. M. A. Allsopp

Finance and Administration

The division is responsible for the control and recording of all of the financial transactions of the Zoo. It also includes the gatekeeper, security and secretarial staff of the organisation. We continue to extend our computer facilities and P Cs have been installed at the Animal Breeding Centre (controlling and pricing of animal foodstuffs) and a second one in Education (administration and preparation of publications).

E. A. Du Cros

Junior Members

The monthly scramble to reserve places for the Juniors' events once again indicates the great interest and support for the Club which has grown and flourished during 1990. Our regular events such as the Contact Session to start the year, the Tracks & Signs day, Summer Barbeque, Day with a Keeper and Christmas Party to conclude, were all much enjoyed, and this year our Fossil Hunting foray took us, on a wet and windy day in October, to Dyserth in North Wales. We could not complain however, about the brilliant sunshine which accompanied our super day to Llyn Brenig and the many things we learnt from the Warden. We spent a day in May amongst the "Rare Breeds" at Croxteth Hall Farm, Liverpool, and in June had the Juniors scanning the Ainsdale Nature Reserve for signs of its wildlife. Towards the end of the year we spent a day at Twycross Zoo looking at their extensive primate collection and enjoyed an amusing talk from their Education Officer. It is encouraging to see how environmentally aware our Junior Members are becoming. They really are providing the seedcorn for the next generation of conservationists.

Mrs. P.A. Rudd

The North of England Zoological Society

Balance Sheet as at 31st December 1990

	NOTES	31.12.90		31.12.89	
		£	£	£	£
FIXED ASSETS					
Tangible assets:	8				
Special buildings, enclosures and equipment		1,989,202		1,816,292	
Freehold property		473,314		436,111	
Animals		1,000		1,000	
		<u> </u>	2,463,516	<u> </u>	2,253,403
CURRENT ASSETS					
Stocks	9	199,008		136,697	
Debtors	10	55,920		45,230	
Balance at bank		4,641		4,315	
Cash in hand		28,248		29,671	
Trust fund bank account	11	103,584		89,642	
		<u> </u>		<u> </u>	
		391,401		305,555	
CURRENT LIABILITIES					
Creditors: amounts falling due within one year				924	
Current instalments due on loan	13	—		672,428	
Bank overdraft (secured)		774,497		102,918	
Trade creditors		168,623		56,609	
Taxes and social security costs		50,098		16,959	
Other creditors	13	31,074		18,178	
Accruals		14,434			
		<u> </u>		<u> </u>	
		1,038,726		868,016	
NET CURRENT LIABILITIES			(647,325)	(562,461)	
TOTAL ASSETS LESS CURRENT LIABILITIES			1,816,191	1,690,942	
Creditors: amounts falling due after more than one year	13		1,165	10,167	
NET ASSETS			<u>£1,815,026</u>	<u>£1,680,775</u>	
RESERVES					
Income and expenditure account			1,711,442	1,591,133	
Trust fund	11		103,584	89,642	
			<u>£1,815,026</u>	<u>£1,680,775</u>	

Approved by the Council on 22nd March 1991
 Chairman of Council
 A. L. B. THOMSON

The North of England Zoological Society

Income and Expenditure Account for the year ended 31st December 1990

	NOTES	1990		1989	
		£	£	£	£
TURNOVER	2		4,697,351		4,232,566
Less direct costs of:—					
Catering		1,014,183		935,881	
Souvenir shops		474,812		413,061	
Animal welfare		857,691		717,364	
Garden upkeep		227,476		193,077	
			2,574,162		2,259,383
			2,123,189		1,973,183
Indirect costs (including £447,927 Maintenance (1989 £379,093))			1,981,682		1,671,794
Operating surplus	3		141,507		301,389
Other income	5		30,827		32,411
			172,334		333,800
Interest receivable	6	4,700		2,971	
Interest payable	7	(73,100)		(79,023)	
			(68,400)		(76,052)
Surplus on ordinary activities			103,934		257,748
Transfer from capital expenditure grants	12		16,375		120,268
			120,309		378,016
Accumulated surplus brought forward			1,591,133		1,213,117
Accumulated surplus carried forward			£1,711,442		£1,591,133

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

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

In our opinion the Accounts, which have been prepared on the basis of the accounting policies set out on page 13 give a true and fair view of the state of the Society's affairs at 31st December 1990 and of its surplus and source and application of funds for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

22nd March 1991.
31 Wellington Road, NANTWICH

AFFORD BOND
Chartered Accountants

The North of England Zoological Society

Statement of Source and application of funds for the year ended 31st December 1990

	1990		1989	
	£	£	£	£
SOURCE OF FUNDS				
Surplus for the year on ordinary activities		103,934		257,748
Adjusted for items not involving the movement of funds				
Depreciation	233,090		197,246	
Loss on sale of fixed assets	3,429		7,503	
		236,519		204,749
Total generated from operations		340,453		462,497
FUNDS FROM OTHER SOURCES				
Sale of fixed tangible assets	18,649		382	
Trust fund and capital expenditure grants	30,317		70,457	
		48,966		70,839
Total funds generated		£389,419		£533,336
APPLICATION OF FUNDS				
Purchase of fixed tangible assets		465,282		353,548
MOVEMENT IN WORKING CAPITAL				
Increase/(Decrease) in stock	62,311		(7,864)	
Increase/(Decrease) in debtors	10,690		(153)	
(Increase)/Decrease in creditors	(69,565)		44,592	
Decrease in creditors over one year	9,001		50,145	
		12,437		86,720
MOVEMENT IN LIQUID FUNDS				
(Decrease)/Increase in balance at bank and cash in hand	(1,097)		16,138	
Decrease in current instalments due on loans	924		4,100	
(Increase)/Decrease in bank overdraft	(102,069)		71,904	
Increase in Trust fund bank account	13,942		926	
		(88,300)		93,068
		£389,419		£533,336

KEEPERS CORNER

BLACK RHINOCEROS

FACT:

Rhinos have been persecuted for centuries—hunted especially for their horns. Increased agricultural use of land in some areas has reduced possible habitats and, it's believed, there are less than 14,000 left in the wild and numbers are still declining.

FACT:

A mature black rhino can weigh up to 1,500 kg and stand almost 1.6m at shoulder height. They are browsing animals, living mainly on leaves and twigs in the open grassland and scrub areas of southern Central Africa. Eyesight is poor, but senses of smell and hearing very acute.

"The pair of black rhinos in Chester Zoo are called Esther and Parky! A baby is born after about 430 days' gestation and will weigh up to 46 kg; it will begin to grow its horn at about five to six weeks."



AFRICA

The black rhino lives in bush country and can be found in high mountain-forest areas where the main source of its food is found.

The North of England Zoological Society

Notes to the accounts for the year ended 31st December 1990

1. ACCOUNTING POLICIES

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

(a) Basis of Accounting

The accounts have been prepared under the historical cost convention.

(b) Fixed Assets

The Council is of the opinion that the market value of the Society's land, property and buildings is in excess of the book values and for insurance purposes, the Zoo buildings and house properties are valued at £5,754,680 replacement cost.

(c) Property

In accordance with practice adopted in previous years no depreciation has been provided on freehold land or property. It is the Society's policy to maintain its property in good condition, prolonging its useful life and making any depreciation provision immaterial.

Repairs and maintenance costs are charged against income in the year as they are incurred.

(d) Special Buildings, Enclosures and Equipment

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

(e) Animals

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

(f) Leases

Where the Society enters into a lease which entails taking substantially all the risks and rewards of ownership of an asset, the lease is treated as a finance lease. The asset is recorded in the balance sheet as a fixed asset and is depreciated over its estimated useful life. Future instalments under such leases, net of finance charges, are included with creditors. Rentals payable are apportioned between the finance element, which is charged to the profit and loss 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 profit and loss account on a straight line basis over the life of the lease.

(g) Stocks

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

(h) Pensions

The Society operates a pension scheme covering the majority of employees and contributions are charged in the accounts as payments are made. Contributions by employees and by the Society are held in trustee administered funds completely independent of the Society's finances.

(i) Property Sales

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

2. Turnover

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

The turnover is attributable as follows:-

	1990 £	1989 £
Admission charges	2,313,324	2,124,301
Catering receipts	1,431,202	1,330,929
Souvenir receipts	715,026	565,141
Motor boat trips	40,787	41,826
Zoo guides	125,764	107,404
Members' subscriptions	42,531	30,879
Sundry income	28,717	32,086
	<u>£4,697,351</u>	<u>£4,232,566</u>

3. Operating Surplus

This is after charging:

	£	£
Auditors remuneration	5,850	5,300
Depreciation (other than animals) (see Note 1)	233,090	197,246
Loss on sale of fixed assets	3,429	7,503
Hire of equipment	8,344	2,750
Operating lease rentals	10,256	8,740

Notes to the Accounts (continued)

	1990		1989	
	£		£	
4. STAFF COSTS				
Wages and salaries		1,976,290		1,704,418
Social Security costs		180,291		155,482
Other pension costs		61,267		49,257
		<u>£2,217,848</u>		<u>£1,909,157</u>
The average number of employees was as follows:-				
	Permanent	Temporary	Permanent	Temporary
Administration	33	4	31	5
Maintenance and Gardens	57	8	55	8
Keeping	57	1	55	1
Catering and Shops	24	41	18	46
	<u>171</u>	<u>54</u>	<u>159</u>	<u>60</u>
5. OTHER INCOME		£		£
Zoo property rents		14,190		17,637
Zoo farm rents (net)		16,637		14,774
		<u>£30,827</u>		<u>£32,411</u>
6. INTEREST RECEIVABLE		£4,700		£2,971
Bank deposit and money market interest				
7. INTEREST PAYABLE				
Bank		71,701		72,565
Finance Leases		1,190		388
Bank loan not wholly repayable within five years		209		6,070
		<u>£73,100</u>		<u>£79,023</u>

8. TANGIBLE FIXED ASSETS

	Freehold Property	Buildings & Enclosures	Machinery & Equipment	Animals	Total
COST					
As at 1.1.90	436,111	2,665,773	713,160	149,685	3,964,729
Additions	37,204	205,300	222,778	(see below)	465,282
Disposals	—	(1,305)	(42,674)		(43,979)
As at 31.12.90	<u>£473,315</u>	<u>£2,869,768</u>	<u>£893,264</u>	<u>£149,685</u>	<u>£4,386,032</u>
DEPRECIATION					
As at 1.1.90	—	1,150,249	412,393	148,685	1,711,327
Provided during year	—	133,817	99,273	—	233,090
Disposals	—	(248)	(21,653)	—	(21,901)
As at 31.12.90	<u>£ —</u>	<u>£1,283,818</u>	<u>£490,013</u>	<u>£148,685</u>	<u>£1,922,516</u>
Net book value at 31.12.90	<u>£473,315</u>	<u>£1,585,950</u>	<u>£403,251</u>	<u>£1,000</u>	<u>£2,463,516</u>
Net book value at 31.12.89	<u>£436,111</u>	<u>£1,515,525</u>	<u>£300,767</u>	<u>£1,000</u>	<u>£2,253,403</u>

Animal purchases of £38,265 (1989 £11,432) and sales of £15,441 (1989 £8,023) have been treated as revenue transactions.

Included in the total net book value of tangible fixed assets is £15,750 (1989 £4,029) in respect of assets acquired under 'finance' leases. Depreciation for the year on these assets was £5,250 (1989 £1,343).

9. STOCKS

	1990	1989
	£	£
Goods for resale*	152,117	95,392
Consumables	46,891	41,305
	<u>£199,008</u>	<u>£136,697</u>

*Includes £29,376 (31 December 1989 nil) re stocks for which Payment is being made in April 1991

10. DEBTORS

Trade debtors	12,140	9,819
Other debtors	19,450	10,175
Prepayments and accrued income	24,330	25,236
	<u>£55,920</u>	<u>£45,230</u>

	1990		1989	
	£	£	£	£
11. TRUST FUND				
Balance at 1.1.90		89,642	88,716	
Adoptions	62,255		55,250	
Less Transferred to animal foods	<u>62,255</u>	—	<u>55,250</u>	—
Sponsorship		1,400		4,000
Donations and legacies etc.		6,292		9,530
Option payment received re possible land lease (note 17)		6,250		—
Transfers to capital expenditure grants		—		(12,604)
Balance at 31.12.90		<u>£103,584</u>		<u>£89,642</u>
12. CAPITAL EXPENDITURE GRANTS				
Balance at 1.1.90		—		50,737
Transfers from Trust Fund		—		12,604
Grants and donations received		16,375		56,927
Transfer to income and expenditure account		(16,375)		(120,268)
Balance at 31.12.90		<u>£ —</u>		<u>£ —</u>
13. CREDITORS FALLING DUE AFTER MORE THAN ONE YEAR				
Loan amounts repayable within five years		—		3,697
Loan amounts repayable after five years		—		6,470
Finance lease net obligations due from two to five years		1,165		—
		<u>£1,165</u>		<u>£10,167</u>

The current portion of the loan amounting to nil (1989 £924) is shown separately in the current liabilities and £7,488 (1989 £337) re. finance lease obligations is included with other creditors.

14. SHARE CAPITAL

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

15. STATUS

The Society is registered with the Charity Commission No. 306077 and no taxation liability (other than VAT) arises on income.

16. CAPITAL COMMITMENTS

	1990	1989
	£	£
The estimated amounts of commitments for future capital expenditure are:-		
Under contracts	1,379,663	1,900
Authorised by the Council but not contracted	<u>125,000</u>	<u>111,000</u>
	<u>£1,504,663</u>	<u>£112,900</u>
There is an annual commitment in respect of operating leases which expire within two to five years of	<u>£10,256</u>	<u>£10,167</u>

Please note that the above figure for commitments under contract includes £1,361,234 in respect of the Monorail system currently nearing completion within the Zoo. It is going to be substantially paid for by means of a lease over seven years. Progress payments amounting to £616,830 have been made by the leasing company to the builder of the Monorail at 31st December 1990.

17. POSSIBLE FUTURE LEASE OF LAND

The Society has entered into an agreement in October 1990 with Deva Roman Centre Limited, whereby about six acres of land, owned by the Society, could be leased for park and ride purposes. £6,250 (Note 11) has been received as an option payment in respect of this agreement which expires in 1995.

18. CONTINGENT LIABILITY

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.

NUMBERS	ADULTS	CHILD/OAP
NORMAL VISITORS	534,387	230,116
PARTY VISITORS (Non-Educational)	18,935	27,226
STUDENTS/SCHOOL CHILDREN AND ACCOMPANYING ADULTS ON EDUCATIONAL VISITS	15,447	68,286
[With Zoo teaching]	[886]	[5,200]
	568,769	325,628
	894,397	



Tiger cubs at play.
Photograph by Cliff Brett,
Daily Post.



EXPENDITURE 1990

Help in Kind
We are not able to put a value on services and facilities given to the zoo "in kind" - but nevertheless, we would like to acknowledge them. In particular, we wish to thank James Edwards of Chester for vehicle loans, British Airways Cargo Services for facilities and material, United Provincial Newspapers and Fishwicks of Haydock for exhibition facilities.



AVAILABLE TO RUN THE ZOO
£4,697,000

INCREASE IN DEBT & BORROWING
£76,000

DEPRECIATION
£233,000

SURPLUS
£104,000

SALES OF ASSETS
£22,000

FUNDS GENERATED
£465,000

SPONSORSHIPS, GRANTS, LEGACIES AND DONATIONS
£30,000
(Not including £32,000 donations promised)

USED FOR DEVELOPMENT
£465,000



Hannah Lawson's talents - both as a designer and painter - helped transform the children's play area.

THANK YOU
The success of the Zoo is only achieved through the hard work, imagination and enthusiasm of its staff and its volunteers. It is very easy to forget the wide variety of tasks which have to be performed in order that the animals thrive, the gardens bloom, the cars get parked, the cafés run, the shops sell and the backroom work gets done. To all members of staff and to all volunteers, the Council extends its warmest thanks on behalf of the Society.

Council Committees & their Terms of Reference

EDUCATION & MEMBERSHIP COMMITTEE

MEMBERS

Mrs. B.J. Jones (Chairman)
 Dr. J.R. Baker
 Miss J.P. Dixon
 Mr. D.B. Edwards
 Mr. A. Guy
 Mr. J.H. Howatt
 Mr. B. Livingstone
 Mrs. J. Straughan

Dr. J.S. Madden
 Mrs. M.M.A. Allsopp (Staff)
 Miss B.M. Norgain (Staff)

To advise Council on all matters concerned with the promotion of the scientific, conservational and educational aims of the Society.

To advise Council on all matters concerning the membership.

To initiate and organise both membership-only and open meetings of a scientific, educational or social nature.

To undertake fund-raising for the support of the objectives of the Society.

FINANCE COMMITTEE (including TRUST FUND)

MEMBERS

*Mr. L.D.B. Bryceson (Chairman)
 Miss J.P. Dixon
 Mr. J.H. Howatt

Mr. M.A.R. Johnson
 Mr. A.L.B. Thomson
 Mr. E.A. Du Cros (Staff)

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

SCIENTIFIC COMMITTEE

MEMBERS

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

STAFF

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

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

Mr. B.H. Coles
 Dr. J.E.D. Charles-Jones
 Mr. D. Lyon
 Mr. N. Walker

STAFF COMMITTEE

MEMBERS

Mr. J.H. Howatt (Chairman)

Mr. A.L.B. Thomson

To advise Council on matters pertaining to employment and personnel management, including staff relations, remuneration and training.

The Chairman and the Director are ex-officio members of all committees and are listed under those in which they are regularly involved.

PENSION FUND

TRUSTEES

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

Mrs. B.J. Jones

ASSESSORS

Mr. M.J. Fairclough

Mr. S.J. Green

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

*Died October 1990

Consultants

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

North of England Zoological Society

Report of Council for the year ended 31st December 1990

1. The principal activity of the Society is the running of the Zoological Gardens at Upton-by-Chester as a scientific and educational charity, supporting wildlife and the conservation of endangered species.
2. There was no significant change in the principal activity of the Society during the year.
3. The state of the Society's affairs at the date of the balance sheet was considered to be satisfactory.
4. Details of changes in the fixed assets are shown in note 8 to the accounts.
5. Members of the Council who have served during the year are listed on page 3.
6. Afford Bond have signified their willingness to be re-appointed auditors and a resolution to that effect will be proposed at the annual general meeting.

By order of the Council

M R Brambell
Secretary

Staff as at 31st December 1990

ANIMAL DIVISION

Keeping Staff

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

Aquarist

M.C. Crumpler

Herpetologist

K.W. Brown

Animal Supplies

D. Marsden
K.J. Newey
S. Sadler

Animal Supplies Officer

J.A.C. Forrest

Zoological Information Officer

M.F. Coupe

Avicultural Deputy

M. Pilgrim

Curator of Birds

Dr. R. Wilkinson

Curator of Mammals

N.G. Ellerton

Laboratory Technician & Safety Officer

D.C. Dinning

Senior Curator & Head of Division

P.A. Wait

EDUCATION

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

Cheshire Education Committee Secondment

Mrs. H. Dibb

Senior Education Officer & Head of Division

Miss B.M. Norgain

ESTATES

Maintenance

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

Maintenance Foreman

P. Brady

Groundstaff

T. Batty
A. Castrachino
K.J. Coriam
R. Head
E. Hughes
Mrs. F.M. Hughes
M. Hughes
N. Morris
P. Powell
Mrs. D. Stringer
J. Whitby
F. Woodworth
C. Yarwood

Head Groundsman

P. Hughes

Gardens

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

Foreman Gardener

C. Williams

Deputy Head Gardener

J.G. Johnson

Head Gardener

E.J. Rudman

Project Engineers

F.S. Carson
K. Roberts

Estate Engineer & Head of Division

S. O'Brien

FINANCE & ADMINISTRATION

General

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

Accounts Supervisor

Miss C. Campion

Accounts & Cashiers

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

Stores Manager

P.J. Thompson

Assistant Security Officer

T.E. Lawley

Security Officer

T.A. Johnson

Secretarial

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

Senior Secretary & Personnel Officer

Mrs. P.A. Rudd

Librarian

Mrs. L. Wilkinson

Director's Secretary

Miss J.D. Lunsford

Financial Controller & Deputy Director

E.A. Du Cros

Director of Chester Zoo

Dr. M.R. Brambell

MARKETING

Catering

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

Oakfield & Functions Manager

R. Casson

Catering Manageress

Mrs. S. Clews

Retail Sales

Mrs. S. Hughes
Miss W. Locker
Miss A. Taylor

Assistant Retail Sales Manager

Mrs. S. Stanton

Retail Sales Manager

A. Jones

Party Office

Mrs. D. Cooke
Miss L. Raynor

Membership & Adoptions

Mrs. M.M.A. Allsopp

Public Relations Officer

Mrs. P. Cade

Marketing

C.M.N. Vere

Staff Association 1990 Committee

Chairman

C.J. McKenzie

Vice Chairman & Gardens

J.E. Richardson

Groundstaff

P. Powell

Mammals

A. Lenihan

Birds

R. Merry

Catering

Mrs. B. Smith

Maintenance

B. McCone

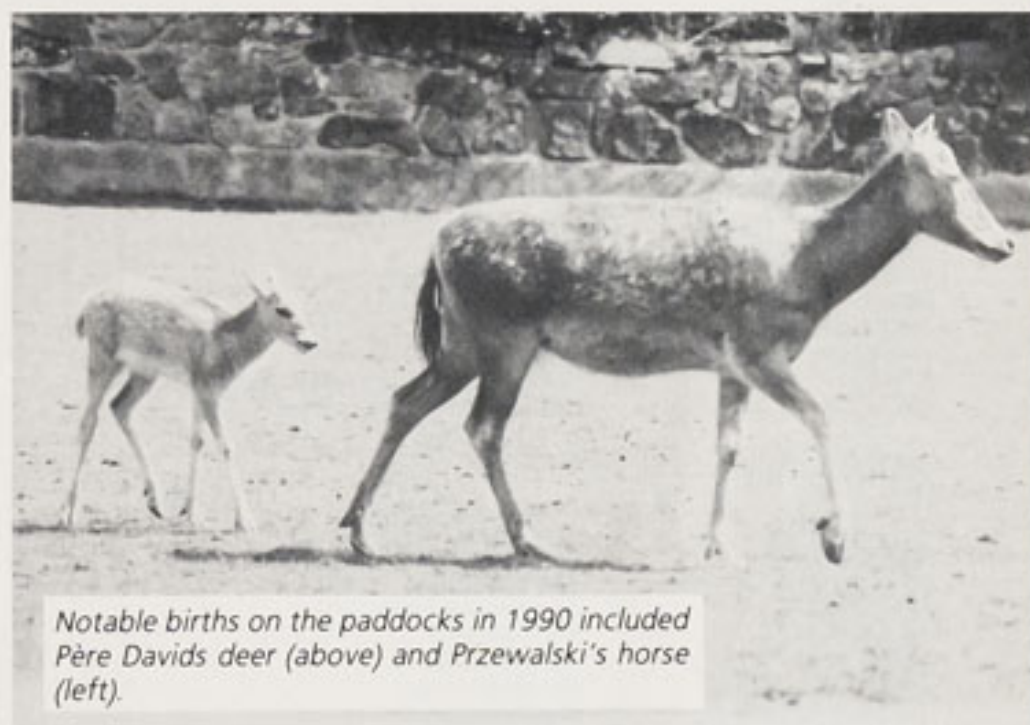
Education & Administration

Mrs. P. Mitchell

Stock as at 31st December 1990

	Number of of Species	Number of of Specimens	Species Breeding & Rearing	Specimens Bred & Reared
Mammals	87	741	37	178
Birds	183	798	67	308
Reptiles	67	341	14	236
Amphibians	14	190	3	225
Fish	137	1317	12	*
Invertebrates	33	555	7	*
TOTALS	521	3942	140	947

* Not Included



Notable births on the paddocks in 1990 included Père David's deer (above) and Przewalski's horse (left).

Animal Collection

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

- COLUMN 1** shows stock at the start of the year. (This normally agrees with the stock listed at the close of the year in the 1988 Annual Report, but in a few instances resexing and the detection of earlier minor errors have resulted in corrections being made).
- COLUMN 2** shows the stock which came into the collection from outside sources.
- COLUMN 3** shows the additional stock resulting from breeding.
- COLUMN 4** shows stock bred in the Zoo which failed to survive more than 30 days. Although columns 3 and 4 are appropriate means to recording the breeding performance of many species, they are inappropriate for species which produce large numbers of microscopic young, most of which are unlikely to survive until they are of countable size. In these species, column 4 is ignored and only surviving countable young are included in column 3.

- COLUMN 5** shows animals which died or were destroyed for reasons of ill-health while in the collection.
- COLUMN 6** shows animals which were removed from the collection, except for reasons of ill-health.
- COLUMN 7** shows the closing stock still in the collection at the end of the year.

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

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

Green Tree Pythons are new to our collection with specimens from Washington Zoo in the USA. Photo by Keith Brown, Herpetologist.



MAMMALS

STOCK 1/1/1990	RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/90		
	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?

MONOTREMATA

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

MARSUPIALIA

Tammar Wallaby	<i>Macropus eugenii</i>	2	3	0														1	3	0
Red-necked Wallaby	<i>Macropus rufogriseus</i>	5	16	0	6	3	0											7	15	0
Western Grey Kangaroo	<i>Macropus fuliginosus</i>	2	5	0	0	0	0											1	3	0

SCANDENTIA

Common Tree Shrew	<i>Tupaia glis</i>	1	1	0														1	1	0
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CHIROPTERA

Rodrigues Fruit Bat	<i>Pteropus rodricensis</i>	14	12	3	0	0	14	0	0	4	3	0	1							
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PRIMATES

Slow Loris	<i>Nycticebus coucang</i>	2	1	0	0	1	0											2	2	0	
Ring-tailed Lemur	<i>Lemur catta</i>	16	19	1	6	0	4	0	0	4	1	0	1	3	3	0			18	16	0
White Fronted Lemur	<i>Lemur fulvous albifrons</i>	1	3	0	2	2	0	0	1	0	1	0	0						2	4	0
Ruffed Lemur	<i>Lemur variegatus</i>	3	3	0										1	1	0			2	2	0
Lesser Bushbaby	<i>Galago senegalensis</i>	2	2	0										1	1	0			1	1	0
Pygmy Marmoset	<i>Callithrix pygmaea</i>	0	1	0	1	0	0	0	0	2				0	0	1			1	1	1
Cotton Top Tamarin	<i>Saguinus oedipus</i>	4	3	0	0	0	1	0	0	1	0	0	1	3	0	0			1	3	0
White-lipped Tamarin	<i>Saguinus labiatus</i>	3	2	0	0	1	0	0	0	1									3	3	1
Douroucouli	<i>Aotus trivirgatus</i>	1	1	0															1	1	0
White-fronted Capuchin	<i>Cebus albifrons</i>	5	4	0										3	3	0			2	1	0
Spider Monkey	<i>black face Ateles paniscus chamek</i>	3	4	0				1	1	0				2	0	0			2	5	0
Lion-tailed Macaque	<i>Macaca silenus</i>	3	2	0	4	0	0							2	0	0			5	2	0
Celebes Macaque	<i>Macaca niger</i>	2	4	0				1	1	0				2	0	0			3	5	0
De Brazza Monkey	<i>Cercopithecus neglectus</i>	3	3	0	0	1	0	3	4	0											
Talapoin Monkey	<i>Miopithecus talapoin</i>	4	5	0	0	1	0												4	4	0
Patas Monkey	<i>Erythrocebus patas</i>	3	2	0															4	2	0
Chimpanzee	<i>Pan troglodytes</i>	5	15	0	1	1	0	0	3	1	0	0	1	1	0	0			6	17	0
Orang utan	<i>Bornean FormPongo pygmaeus pygmaeus</i>	2	4	0							0	2	0						2	4	0
Orang utan	<i>Sumatran FormPongo pygmaeus abelii</i>	2	3	0										1	0	0			1	3	0

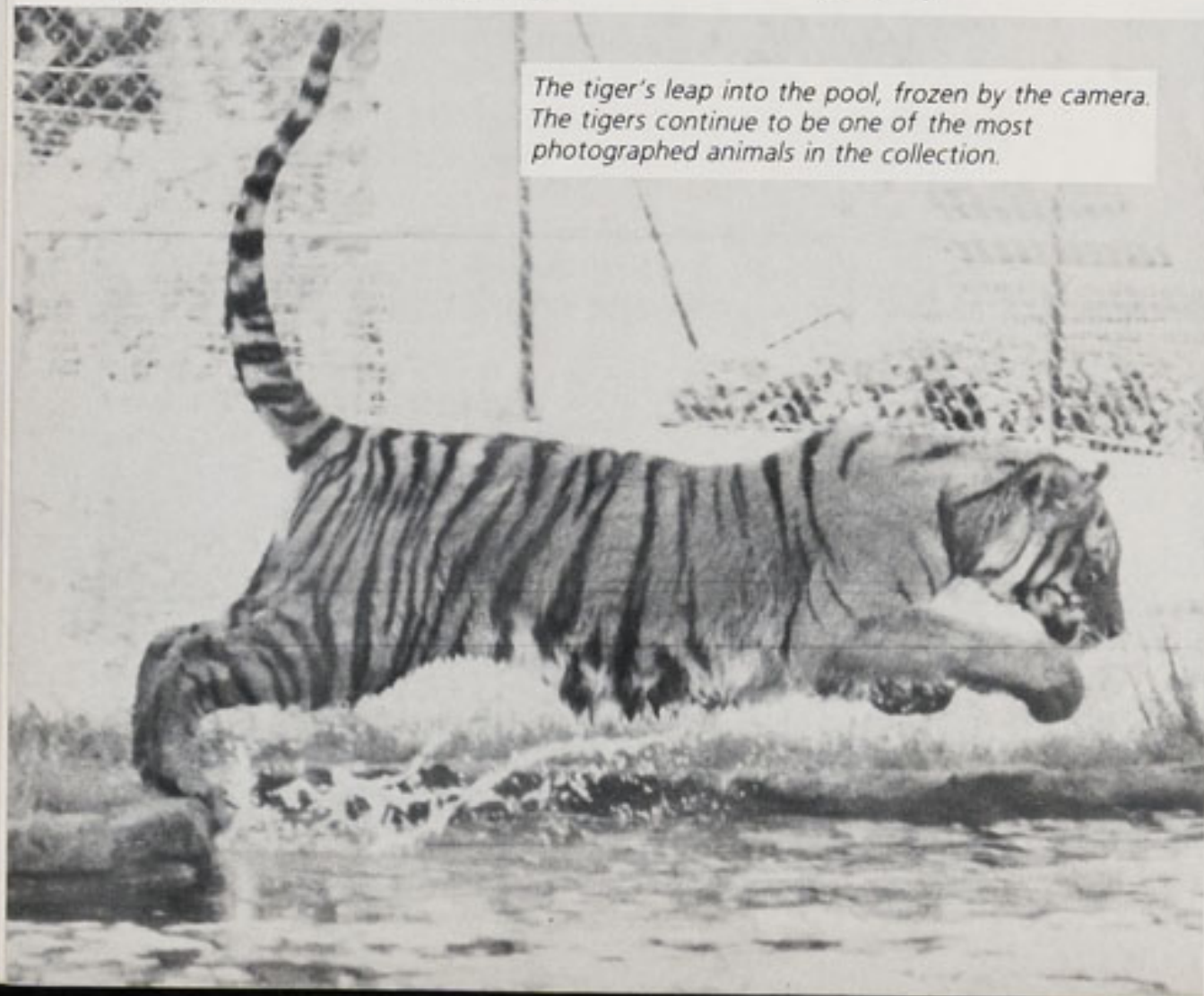
RODENTIA

Fire-footed Squirrel	<i>Funisciurus pyrropus</i>	1	0	0							1	0	0						0	0	0
Prairie Marmot	<i>Cynomys ludovicianus</i>	0	0	125				0	0	24				0	0	26			0	0	123
African Crested Porcupine	<i>Hystrix cristata</i>	2	6	0				2	2	9	0	0	4	1	1	0			3	7	5
Capybara	<i>Hydrochoerus hydrochaeris</i>	5	7	0				3	3	3	0	0	3	2	3	0			6	7	0
Paca	<i>Cuniculus paca</i>	2	2	0										0	2	0			2	0	0
Golden Agouti	<i>Punctata punctata</i>	0	1	0															0	1	0
Coypu	<i>Myocastor coypus</i>	8	13	0				9	3	1	0	1	1	3	4	0			14	11	0
Mountain Viscacha	<i>Lagidium viscaccia</i>	1	0	0															1	0	0

CARNIVORA

Bat-eared Fox	<i>Otocyon megalotis</i>	0	0	0	1	2	0												1	2	0
Brown Bear	<i>Ursus arctos</i>	1	1	0															1	1	0
Polar Bear	<i>Thalarchos maritimus</i>	0	1	0															0	1	0
Common Raccoon	<i>Procyon lotor</i>	1	1	0															1	1	0
Coati	<i>Nasua nasua</i>	7	10	0				1	3	13	0	0	13	0	1	0	5	0	3	12	0
Kinkajou	<i>Potos flavus</i>	2	3	0				0	1	0				1	2	0			1	2	0
Small-clawed Otter	<i>Aonyx cinerea</i>	1	1	0															1	1	0
Binturong	<i>Arctictis binturong</i>	1	1	0															0	0	0
African Banded Mongoose	<i>Mungo mungo</i>	2	2	0										1	1	0			1	1	0

The tiger's leap into the pool, frozen by the camera. The tigers continue to be one of the most photographed animals in the collection.



The Congo buffalo - one of the years newcomers.

		STOCK 1/1/1990			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/90						
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?				
CARNIVORA (continued)																										
Dwarf Mongoose	<i>Helogale undulata</i>	4	3	4															4	3	4					
Meerkat	<i>Suricata suricatta</i>	1	5	7			0	0	3		0	0	3					0	3	3	1	2	4			
Margay	<i>Felis wiedi</i>	1	2	0																	1	2	0			
Jungle Cat	<i>Felis chaus</i>	2	3	0										0	2	0					2	1	0			
Wildcat Scottish Form	<i>Felis sylvestris</i>	0	2	0		0	2	0																		
Black Footed Cat	<i>Felis nigripes</i>	0	0	0		2	2	0													2	2	0			
Ocelot	<i>Felis pardalis</i>	1	2	0		1	0	0										1	0	0	1	2	0			
Caracal	<i>Felis caracal</i>	2	1	0					0	1	0							1	0	0	1	2	0			
European Lynx	<i>Felis lynx</i>	2	1	0										1	0	0					1	1	0			
Serval	<i>Felis serval</i>	3	3	0					1	2	1		0	0	1			2	1	0	2	4	0			
Geoffroy's Cat	<i>Felis geoffroyi</i>	3	5	0					3	3	0							2	3	0	4	5	0			
Jaguarundi	<i>Felis yagouarundi</i>	1	1	0																	1	1	0			
Puma	<i>Felis concolor</i>	1	2	0										1	1	0					0	1	0			
Lion	African Form <i>Panthera leo</i>	1	3	0																	1	3	0			
Tiger	Siberian Form <i>Panthera tigris altaica</i>	2	2	0																	2	2	0			
Leopard	Black Form <i>Panthera pardus pardus</i>	1	1	0																	1	1	0			
Leopard	Persian Form <i>Panthera pardus saxicolour</i>	1	1	0		0	1	0									0	1	0		1	1	0			
Cheetah	<i>Acinonyx jubatus</i>	1	3	0		1	0	0													2	3	0			
PINNIPEDIA																										
Californian Sealion	<i>Zalophus californianus</i>	1	5	0											0	1	0				1	4	0			
PROBOSCIDEA																										
Indian Elephant	<i>Elephas maximus</i>	2	4	0		0	1	0													2	5	0			
PERISSODACTYLA																										
Przewalski's Horse	<i>Equus przewalskii</i>	1	3	0		1	2	0		0	1	0			0	2	0		1	0	0	1	4	0		
Common Zebra	<i>Equus burchelli boehmi</i>	1	4	0						0	1	0									1	5	0			
Onager	Persian Form <i>Equus hemionus onager</i>	2	4	0						0	1	0		0	1	0					2	4	0			
Brazilian Tapir	<i>Tapirus terrestris</i>	2	1	0														1	0	0	1	1	0			
Black Rhinoceros	<i>Diceros bicornis</i>	1	1	0																	1	1	0			
White Rhinoceros	<i>Ceratotherium simum simum</i>	1	0	0														1	0	0	0	0	0			
Indian Rhinoceros	<i>Rhinoceros unicornis</i>	1	0	0																	1	0	0			
ARTIODACTYLA																										
Collared Peccary	<i>Tayassu tajacu</i>	2	3	0											1	0	0				1	3	1			
Common Hippopotamus	<i>Hippopotamus amphibius</i>	1	1	0																	1	1	0			
Llama	<i>Lama glama</i>	2	5	0				0	1	0					0	1	0		2	5	0	0	0	0		
Guanaco	<i>Lama guanicoe</i>	1	12	0				4	3	0								0	2	0	5	13	0			
Bactrian Camel	<i>Camelus bactrianus</i>	1	2	0				1	0	0								1	0	0	1	2	0			
Axis Deer	<i>Cervus axis</i>	2	6	0				2	1	1		0	0	1		0	1	0			4	6	0			
Wapiti	<i>Cervus canadensis</i>	2	5	0														1	0	0	1	5	0			
Pere David's Deer	<i>Elaphurus davidianus</i>	2	5	0				0	2	0											2	7	0			
Reindeer	<i>Rangifer tarandus</i>	2	10	0				2	3	0		1	0	0				1	0	0	2	13	0			
Chinese Water Deer	<i>Hydropotes inermis</i>	1	0	0																	1	0	0			
Giraffe	<i>Giraffa camelopardalis</i>	2	2	0																	2	2	0			
Eland	<i>Taurotragus oryx</i>	3	9	0				2	4	0				1	1	0		1	4	0	3	8	0			
Nilgai	<i>Boselaphus tragocamelus</i>	5	12	0		1	0	0		2	8	0		1	4	0		2	2	0	3	14	0			
Scimitar Horned Oryx	<i>Oryx dammah</i>	1	3	0		0	5	0		2	0	0									3	8	0			
Ankole Cattle	domestic <i>Bos taurus</i>	4	4	0		1	0	0		1	1	0						4	0	0	2	5	0			
American Bison	<i>Bison bison</i>	2	9	0				4	2	0					1	1	0				5	10	0			
Congo Buffalo	<i>Syncerus caffer nanus</i>	1	1	0		0	2	0		0	1	0									1	4	0			
Red Lechwe	<i>Kobus leche</i>	2	27	0				14	7	0		2	0	0		2	4	0		5	0	0	7	30	0	
Roan Antelope	<i>Hippotragus equinus</i>	0	0	0		1	2	0													1	2	0			
Wildebeeste	<i>Connochaetes taurinus</i>	2	4	0				3	1	0		1	0	0		2	0	0		1	1	0	1	4	0	
Blackbuck	<i>Antelope cervicapra</i>	6	19	0				6	5	0		2	1	0		2	4	0		5	3	0	3	16	0	
Arabian Gazelle	<i>Gazella gazella arabica</i>	4	6	0				1	2	0					1	2	0				4	6	0			
		209	375	141		15	21	0		80	72	78		7	8	37		26	37	28	63	41	3	208	382	151
		725			36			230			52			91			107			741						

Number of specimens - 741 Number of species - 87

Lucky - the camel, born on Good Friday.



BIRDS

STOCK 1/1/1990			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/90		
M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?

STRUTHIONIFORMES

Ostrich	<i>Struthio camelus</i>	0	1	0	2	0	0							1	0	0				1	1	0
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RHEIFORMES

Common Rhea	<i>Rhea americana</i>	1	3	0				0	0	4	0	0	1	0	1	0	0	0	3	1	2	0
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CASUARIIFORMES

Emu	<i>Dromaius novaehollandiae</i>	1	1	0				0	0	5							0	0	5	1	1	0
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TINAMIFORMES

Chilean Tinamou	<i>Nothoprocta perdicaria</i>	0	0	9				0	0	16	0	0	6	0	0	4	0	0	6	0	0	9
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SPHENISCIFORMES

Humboldt's Penguin	<i>Spheniscus humboldti</i>	11	10	7	0	0	3	0	0	3				0	1	3	1	1	0	10	8	10
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CICONIIFORMES

White Stork	<i>Ciconia ciconia</i>	3	2	0				0	0	3	0	0	1				1	0	2	2	2	0
Waldrapp Ibis	<i>Geronticus eremita</i>	11	8	0				0	0	10	0	0	2	2	0	1				9	8	7
Chilean Flamingo	<i>Phoenicopterus chilensis</i>	10	17	1	3	0	0										0	3	0	13	14	1
Caribbean Flamingo	<i>Phoenicopterus ruber ruber</i>	16	13	13										0	1	0				16	12	13
Caribbean x Chilean Flamingo	<i>P.r. ruber x P. chilensis</i>	0	1	0																0	1	0

ANSERIFORMES

White-faced Whistling Duck	<i>Dendrocygna viduata</i>	4	3	0	0	1	0	0	0	3				1	0	0	0	0	3	3	4	0
Fulvous Tree Duck	<i>Dendrocygna bicolor</i>	1	3	0	2	0	0	0	0	4	0	0	1				0	0	3	3	3	0
Black-necked Swan	<i>Cygnus melanocoryphus</i>	1	1	0																1	1	0
Lesser Snow Goose	<i>Anser caerulescens</i>	1	1	0																1	1	0
Emperor Goose	<i>Anser canagicus</i>	3	3	0																3	3	0
Lesser White-fronted Goose	<i>Anser erythropus</i>	0	0	0	2	2	0													2	2	0
Ross's Snow Goose	<i>Anser rossii</i>	1	0	0	1	0	0										1	0	0	1	0	0
Red-breasted Goose	<i>Branta ruficollis</i>	5	5	0										1	1	0				4	4	0
Hawaiian Goose	<i>Branta sandvicensis</i>	3	3	0				0	0	10	0	0	1				0	0	9	3	3	0
Ruddy-headed Goose	<i>Chloephaga rubidiceps</i>	1	1	0				0	0	4				0	0	1	0	0	3	1	1	0
Common Shelduck	<i>Tadorna tadorna</i>	2	2	0				0	0	17				0	0	1	0	0	16	2	2	0
Chestnut Teal	<i>Anas castanea</i>	1	1	0																1	1	0
Baikal Teal	<i>Anas formosa</i>	2	4	0	1	0	0							1	2	0				2	2	0
Falcated Teal	<i>Anas falcata</i>	2	1	0	0	1	0													2	2	0
Wigeon	<i>Anas penelope</i>	1	1	0																2	2	0
Northern Shoveler	<i>Anas clypeata</i>	2	2	0																1	1	0
Red Shoveler	<i>Anas platalea</i>	2	2	0										1	0	0				2	2	0
Laysan Teal	<i>Anas platyrhynchos laysanensis</i>	2	2	0	1	1	0													1	2	0
Garganey	<i>Anas querquedula</i>	0	0	0	2	2	0													3	3	0
Chiloe Wigeon	<i>Anas sibilatrix</i>	2	2	0																2	2	0
Ringed Teal	<i>Anas leucophrys</i>	2	2	0	0	1	0							0	1	0				2	2	0
Marbled Teal	<i>Anas angustirostris</i>	3	3	0				0	0	6							0	0	6	3	3	0
Common Eider	<i>Somateria mollissima</i>	0	0	0	1	1	0													1	1	0
Tufted Duck	<i>Aythya fuligula</i>	2	2	0	1	0	0	0	0	6				1	0	1	0	0	5	2	2	0
Rosy-billed Pochard	<i>Netta peposaca</i>	2	2	0																2	2	0
Red-crested Pochard	<i>Netta rufina</i>	2	2	0				0	0	8	0	0	2	0	0	2	0	0	4	2	2	0
Maned Goose	<i>Chenonetta jubata</i>	3	3	0				0	0	8							0	0	8	3	3	0
Mandarin Duck	<i>Aix galericulata</i>	6	7	0				3	4	29	0	0	4	0	1	4	0	0	21	9	10	0
Carolina Duck	<i>Aix sponsa</i>	3	3	0				0	0	18	0	0	5	0	0	3	0	0	10	3	3	0
White-winged Wood Duck	<i>Cairina scutulata</i>	2	2	0	1	0	0	0	0	8				1	0	0	0	0	8	2	2	0
Smew	<i>Mergus albellus</i>	0	0	0	2	2	0													2	2	0
Hooded Merganser	<i>Mergus cucullatus</i>	3	4	0	1	0	0													4	4	0
Ruddy Duck	<i>Oxyura jamaicensis</i>	4	3	0				0	0	3	0	0	2	0	0	1				4	3	0

Our Waldrapp ibis groups have been augmented by seven chicks raised this year - a real endangered species success.



STOCK			RECEIVED			BORN/H'CH			D.N.S.			DEATHS			DISPOSALS			STOCK		
1/1/1990									30 DAYS			OTHERS			31/12/90					
M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?

FALCONIFORMES

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

GALLIFORMES

Variable Chachalaca	<i>Ortalis motmot</i>	1	1	0				0	0	3	0	0	2				0	0	1	1	1	0
Slater's Crested Curassow	<i>Crax fasciolata</i>	2	2	0										1	0	0				1	2	0
Californian Quail	<i>Lophortyx californica</i>	2	2	0	0	2	0							0	2	0				2	2	0
Rourol Partridge	<i>Rallulus rullou</i>	2	2	0																2	2	0
Satyr Tragopan	<i>Tragopan satyra</i>	1	1	0				1	1	0							0	1	0	2	1	0
Temminck's Tragopan	<i>Tragopan temminckii</i>	0	0	0	1	1	0													1	1	0
Himalayan Monal	<i>Lophophorus impeyanus</i>	1	1	0				0	0	19	0	0	2	0	0	1	0	0	16	1	1	0
Blue Eared Pheasant	<i>Crossoptilon auritum</i>	1	2	0	1	0	0							0	1	0				2	1	0
Brown Eared Pheasant	<i>Crossoptilon mantchuricum</i>	1	2	0				0	0	14	0	0	1	0	1	0	0	0	11	1	1	2
White Eared Pheasant	<i>Crossoptilon crossoptilon</i>	1	1	0																1	1	0
Golden Pheasant	<i>Chrysolophus pictus</i>	1	2	0				0	0	4	0	0	1				0	0	3	1	2	0
Lady Amherst's Pheasant	<i>Chrysolophus amherstiae</i>	1	1	0																1	1	0
Grey Peacock-Pheasant	<i>Polyplectron bicalcaratum</i>	2	2	0				0	0	3							0	0	3	2	2	0
Palawan Peacock Pheasant	<i>Polyplectron emphanum</i>	3	1	0	1	2	0							0	1	0	1	0	0	3	2	0
Edwards' Pheasant	<i>Lophura edwardsi</i>	0	1	0	1	1	0							1	1	0				0	1	0
Common Peafowl	<i>Pavo cristatus</i>	3	3	0				0	0	6							0	0	6	3	3	0
Green Peafowl	<i>Pavo muticus imperator</i>	1	1	0										1	1	0	0	0	0			
Congo Peafowl	<i>Afropavo congensis</i>	1	1	0																1	1	0

GRUIFORMES

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

CHARADRIIFORMES

Southern Stone Curlew	<i>Burhinus magirostris</i>	0	3	0										0	2	0	0	1	0			
Blacksmith's Plover	<i>Vanellus armatus</i>	3	3	0				0	0	8	0	0	4				0	0	4	3	3	0
Crowned Plover	<i>Vanellus coronatus</i>	3	3	0				0	0	14	0	0	8				0	0	6	3	3	0

COLUMBIFORMES

Speckled Pigeon	<i>Columba guinea</i>	2	3	0	0	0	4							1	1	0	1	2	0	0	0	4
Pink Pigeon	<i>Nesoenas mayeri</i>	1	2	0	2	1	0	0	0	2	0	0	2	0	1	0				3	2	0
Laughing Dove	<i>Streptopelia senegalensis</i>	1	1	6				0	0	1				0	0	1	0	0	1	1	1	5
Bar-tailed Cuckoo Dove	<i>Macropygia unchall</i>	1	1	0	1	0	0	1	1	0				0	1	0	0	1	0	3	0	0
Emerald Dove	<i>Chalcophaps indica</i>	3	0	0																3	0	0
Crested Bronzewing Pigeon	<i>Ocyphaps lophotes</i>	2	3	4													0	1	0	2	2	4
Common Bronzewing Pigeon	<i>Phaps chalcoptera</i>	1	1	0																1	1	0
Diamond Dove	<i>Geopelia cuneata</i>	1	1	0				0	0	11	0	0	1				0	0	4	1	1	6
Mountain Witch Dove	<i>Geotrygon versicolor</i>	4	2	2				0	0	5	0	0	1	1	0	0	2	0	5	1	2	1
Golden Heart Pigeon	<i>Gallicolumba rufigula</i>	1	0	0	0	0	2													1	0	2
Bleeding Heart Pigeon	<i>Gallicolumba luzonica</i>	0	2	0	1	0	0													1	2	0
Celebes Quail Dove	<i>Gallicolumba tristigmata</i>	3	2	0										0	1	0				3	1	0
Pink-necked Green Pigeon	<i>Treron vernans</i>	0	1	0	1	0	0													1	1	0

Red-crowned crane in the new paddock - which is netted from telegraph poles to form a 'tent'. We hope this will become a model for other enclosures.



Red-fronted macaws bred for the first time at Chester, with a single youngster from the second clutch laid. Photo by Dr. Roger Wilkinson, Curator of Birds.



BIRDS (CONTINUED)

		STOCK			RECEIVED			BORN/H'CH			D.N.S.			DEATHS			DISPOSALS			STOCK			
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
Duyvenbode's Lory	<i>Chalcopsitta duivenbodei</i>	1	1	0	1	0	0						0	1	0	1	0	0	1	0	0		
Yellow-backed Chattering Lory	<i>Lorius garrulus flavopalliatu</i>	1	1	0	1	0	0	0	0	2			0	0	1				2	1	1		
Stella's Lorikeet	<i>Charmosyna papou goliathina</i>	2	1	0												1	0	0	1	1	0		
Red-flanked Lorikeet	<i>Charmosyna placensis</i>	0	0	0	0	1	0						0	1	0				0	0	0		
Musk Lorikeet	<i>Glossopsitta concinna</i>	2	3	0				0	0	2						1	0	0	1	3	2		
Musschenbroek's Lorikeet	<i>Neopsittacus musschenbroekii</i>	2	3	2	0	0	1	0	0	4			0	1	3	0	0	4	2	2	0		
Palm Cockatoo	<i>Probosciger aterrimus</i>	1	1	0															1	1	0		
Leadbeaters Cockatoo	<i>Cacatua leadbeateri</i>	2	1	0				2	0	0						1	0	0	3	1	0		
Blue-eyed Cockatoo	<i>Cacatua ophthalmica</i>	4	4	0				0	1	1						0	1	0	4	4	1		
Kea	<i>Nestor notabilis</i>	2	2	0				0	1	1	0	0	0	1	0	0	1	0	2	2	0		
Red-sided Eclectus Parrot	<i>Eclectus roratus polychlorus</i>	1	1	0				0	0	3		0	0	2		0	0	1	1	1	0		
Solomon Island Eclectus Parrot	<i>Eclectus roratus solomonensis</i>	1	2	0												0	1	0	1	1	0		
Barraband Parrakeet	<i>Polytelis swainsoni</i>	2	2	2											0	1	0	2	1	2	0	0	0
Vasa Parrot	<i>Coracopsis vasa</i>	3	1	0				0	0	2									3	1	2		
Lesser Vasa Parrot	<i>Coracopsis nigra nigra</i>	5	1	0				0	0	4						1	0	0	4	1	4		
Splendid Parrakeet	<i>Neophema splendida</i>	1	1	0				1	0	2	0	0	2						2	1	0		
Derbyan Parrakeet	<i>Psittacula derbiliana</i>	4	3	0				0	0	4	0	0	1	0	0	0	0	2	4	3	0		
Blue and Yellow Macaw	<i>Ara ararauna</i>	2	2	1				0	0	2						0	0	1	2	2	2		
Scarlet Macaw	<i>Ara macao</i>	0	0	0	3	2	0									1	0	0	2	2	0		
Red-fronted Macaw	<i>Ara rubrogenys</i>	2	2	0				0	0	1									2	2	1		
Yellow-naped Macaw	<i>Ara auricollis</i>	1	1	0															1	1	0		
Red-masked Conure	<i>Aratinga erythrogenys</i>	5	2	0															5	2	0		
Queen of Bavaria Conure	<i>Aratinga guarouba</i>	1	1	0	0	1	0												1	2	0		
Thick-billed Parrot	<i>Rhynchopsitta pachyrhyncha</i>	1	1	0															1	1	0		
Lesser Patagonian Conure	<i>Cyanoliseus patagonus</i>	4	4	3				0	0	3	0	0	1	1	0	0	0	3	3	4	2		
Blue-throated Conure	<i>Pyrrhura cruentata</i>	0	0	0	2	1	0									1	0	0	1	1	0		
Slender-billed Parrakeet	<i>Enicognathus leptorhynchus</i>	1	1	0				0	0	4				0	0	4			1	1	0		
Yellow-faced Parrotlet	<i>Forpus xanthops</i>	3	2	0	0	1	0	0	0	4	0	0	4			0	1	0	3	2	0		
Grey-cheeked Parrakeet	<i>Brotogeris pyrrhopterus</i>	1	3	0	2	0	0												3	3	0		
Lilacine Amazon Parrot	<i>Amazona autumnalis lilacina</i>	1	1	0															1	1	0		
Green-cheeked Amazon	<i>Amazona viridigenalis</i>	1	1	0	1	1	0												2	2	0		
Hawk-headed Parrot	<i>Deroptyus accipitrinus</i>	2	2	0	0	1	0	0	0	1	0	0	1	0	1	0	1	0	2	2	0		

CUCULIFORMES

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



The greater Vasa parrots reared two chicks - a UK first breeding of this species
 Photo by Dr. Roger Wilkinson, Curator of Birds.

CK
90
/7

STOCK 1/1/1990			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/90		
M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?

STRIGIFORMES

Barn Owl	<i>Tyto alba</i>	2	2	0				0	0	18	0	0	1			0	0	17	2	2	0
White-faced Scops Owl	<i>Otus leucotis</i>	0	2	0	1	0	0									1	2		1	2	0
Great Eagle Owl	<i>Bubo bubo</i>	1	1	0				0	0	3						0	0	3	1	1	0
Milky Eagle Owl	<i>Bubo lacteus</i>	0	0	0	1	0	0												1	0	0
Great Horned Owl	<i>Bubo virginianus</i>	2	2	0				0	0	3						1	1	3	1	1	0
Vermiculated Fishing Owl	<i>Scotopelia bouvieri</i>	0	1	0															0	1	0
Spectacled Owl	<i>Pulsatrix perspicillata</i>	3	2	0				0	0	2			1	0	0				2	2	2
Snowy Owl	<i>Nyctea scandiaca</i>	2	2	0				0	0	7	0	0	3			0	0	4	2	2	0

CAPRIMULGIFORMES

Tawny Frogmouth	<i>Podargus strigoides</i>	2	0	0															2	0	0
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APODIFORMES

Sparkling Violetear	<i>Colibri coruscans</i>	0	0	2									0	0	1				0	0	1
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COLIIFORMES

Red-backed Mousebird	<i>Colius castanotus</i>	0	0	3									0	0	1				0	0	2
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CORACIIFORMES

Kookaburra	<i>Dacelo novaeguineae</i>	2	2	0				0	0	8	0	0	2			0	0	6	2	2	0	
Blue-crowned Motmot	<i>Momotus momota</i>	2	1	1	1	0	0												3	1	1	
Roller	<i>Coracias garrulus</i>	2	2	0										1	2	0			1	0	0	
Grey Hornbill	<i>Tockus nasutus</i>	2	5	0	1	0	0	0	0	1	0	0	1				1	0	0	2	5	0
Red-billed Hornbill	<i>Tockus erythrorhynchus</i>	1	1	0															1	1	0	
Trumpeter Hornbill	<i>Bycanistes buccinator</i>	1	1	2				0	0	2							0	0	4	1	1	0
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>Aceros corrugatus</i>	1	1	0															1	1	0	

PICIFORMES

Crimson-rumped Toucanet	<i>Aulacorhynchus haematopygus</i>	1	0	0												1	0	0	0	0	0	
Collared Aracari	<i>Pteroglossus torquatus</i>	1	1	0	1	0	0									1	0	0	1	1	0	
Toco Toucan	<i>Ramphastos toco</i>	0	0	0	1	1	0												1	1	0	
Channel-billed Toucan	<i>Ramphastos vitellinus</i>	1	1	2				0	0	2			0	0	1			0	0	2	1	1
White Woodpecker	<i>Leuconerpes candidus</i>	1	2	0															1	2	0	

PASSERIFORMES

Blue-winged Pitta	<i>Pitta brachyura</i>	4	2	0												2	0	0	2	2	0
Red-eared Bulbul	<i>Pycnonotus jocosus</i>	1	1	3				0	0	2	0	0	2			0	0	1	1	1	2
Chinese Bulbul	<i>Pycnonotus sinensis</i>	0	1	2												0	1	2	0	1	2
Fairy Bluebird	<i>Irena puella</i>	2	2	0				0	0	7	0	0	6			2	2	1	2	2	1
White-rumped Shama	<i>Copsychus malabaricus</i>	1	1	0				0	0	4	0	0	3			1	1	0	1	1	0
Plumbeous Redstart	<i>Rhyacornis fuliginosus</i>	1	1	0				0	0	4	0	0	3			0	0	1	1	1	0
Orange-headed Ground Thrush	<i>Zoothera citrina</i>	2	2	0				0	0	3	0	0	3			2	2	0	2	2	0
Red-tailed Laughing Thrush	<i>Garrulax milnei</i>	3	1	1										1	0	1		1	0	0	1
White-crested Laughing Thrush	<i>Garrulax leucolophus</i>	1	1	0										0	1	0			1	0	0
Pekin Robin	<i>Leiothrix lutea</i>	1	1	1				1	1	1									1	1	0
Silver-eared Mesia	<i>Leiothrix argentea</i>	1	1	0				0	0	1	0	0	1						1	1	0
Blue-grey Tanager	<i>Thraupis episcopus</i>	0	0	1	0	0	3						0	0	4			0	0	0	0
Virginian Cardinal	<i>Cardinalis cardinalis</i>	1	1	0										0	1	0		1	0	0	0
Wagler's Oropendola	<i>Psarocolius wagleri</i>	1	0	0										1	0	0			0	0	0
Brown & Yellow Marshbird	<i>Pseudoleistes virescens</i>	1	0	0										1	0	0			0	0	0
Giant Cowbird	<i>Scapipura oryzivora</i>	1	0	0															1	0	0
Yellow-fronted Canary	<i>Serinus mozambicus</i>	1	1	0				0	0	3	0	0	3			1	1	0	1	1	0
Mexican House Finch	<i>Carpodacus mexicanus</i>	3	4	0				0	0	15	0	0	15			3	4	0	3	4	0
Orange-cheeked Waxbill	<i>Estrilda melpoda</i>	0	0	11										0	0	2			0	0	9
Golden-breasted Waxbill	<i>Amandava subflava</i>	0	1	0															0	1	0
Zebra Finch	<i>Poephila guttata</i>	1	3	0										0	1	0			1	2	0
Spice Bird	<i>Lonchura punctulata</i>	0	0	1										0	0	1			0	0	0
Red-billed Buffalo Weaver	<i>Bubalornis niger</i>	2	1	0															2	1	0
White-headed Buffalo Weaver	<i>Dinemellia dinimelli</i>	1	1	4				0	0	2	0	0	1			0	0	1	1	1	4
Golden Sparrow	<i>Passer luteus</i>	0	1	0										0	1	0			0	0	0
Java Sparrow	<i>Padda oryzivora</i>	1	0	3	0	1	5			4				0	0	3			1	1	9
Golden Palm Weaver	<i>Ploceus bojeri</i>	5	1	3				1	0	2	0	0	1			0	0	4	6	1	0
Baya Weaver	<i>Ploceus philippinus</i>	1	0	0														1	0	0	0
Red-billed Weaver	<i>Quelea quelea</i>	7	1	0															7	1	0
Fire-fronted Bishop	<i>Euplectes diadematus</i>	1	1	0										0	1	0			1	0	0
Asian Glossy Starling	<i>Aplonis panayensis</i>	0	0	0	0	2	1												0	2	1
Red-winged Starling	<i>Oncognathus morio</i>	0	0	0	1	1	0												1	1	0
Long-tailed Glossy Starling	<i>Lamprotornis caudatus</i>	1	1	0															1	1	0
Purple Glossy Starling	<i>Lamprotornis purpureus</i>	1	0	0	0	1	0												1	1	0
Emerald Starling	<i>Lamprocolius iris</i>	0	0	5				0	0	1	0	0	1					0	0	2	0
Amethyst Starling	<i>Cinnyricinclus leucogaster</i>	3	1	2										0	0	1		1	0	1	0
Superb Starling	<i>Spreo superbus</i>	2	2	0				0	0	1								0	0	1	0
Fischer's Starling	<i>Spreo fischeri</i>	0	1	1															0	1	1
Hildebrandt's Starling	<i>Spreo hildebrandti</i>	1	1	0	1	1	0									1	2	0	1	0	0
Chestnut-bellied Starling	<i>Spreo pulcher</i>	0	4	0										0	4	0			0	0	0
Ashy Starling	<i>Cosmopsarus unicolor</i>	1	2	0										1	1	0			0	1	0
Royal Starling	<i>Cosmopsarus regius</i>	5	2	0				0	0	6	0	0	6			1	1	0	4	1	0
Rothschild's Mynah	<i>Leucopsar rothschildi</i>	7	7	0				0	0	3	0	0	2			2	0	0	5	5	1
Hill Mynah	<i>Gracula religiosa</i>	0	1	0														0	1	0	0
Coleto Mynah	<i>Sarcops calvus</i>	1	3	0				0	0	3	0	0	1			1	0	0	0	2	2
Red-billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	1	0	0	1	2	0							1	1	0			1	1	0
Azure-winged Magpie	<i>Cyanopica cyana</i>	4	3	0														0	1	0	0
Red-billed Chough	<i>Pyrhocorax pyrrhocorax</i>	2	2	0															2	2	0

353	337	98	51	40	19	10	8	407	0	0	117	29	44	56	28	22	229	357	319	122
788			110			425			117			129			279			798		

Number of specimens - 798 Number of species - 183

REPTILES

STOCK 1/1/1990			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/90		
M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?

RHYNCHOCEPHALIA

Tuatara	<i>Sphenodon punctatus</i>	1	1	0										1	0	0				0	1	0
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CHELONIA

Red Legged Tortoise	<i>Geochelone carbonaria</i>	0	5	0																0	5	0
Greek Tortoise	<i>Testudo graeca</i>	8	9	0	1	0	0							0	3	0				9	6	0
Herman's Tortoise	<i>Testudo hermanni</i>	13	9	0	1	0	0													14	9	0
Aldabra Giant Tortoise	<i>Geochelone gigantea</i>	1	4	0										0	1	0				1	3	0
Matamata Turtle	<i>Chelus fimbriatus</i>	0	1	2																0	1	2
Malayan Box Turtle	<i>Cuora amboinensis</i>	2	2	0																2	2	0
Soft-shelled Turtle	<i>Trionyx triunguis</i>	1	0	0																1	0	0
Snapping Turtle	<i>Chelydra serpentina</i>	1	1	0																1	1	0
Carolina Box Turtle	<i>Terrapene ornata carolinensis</i>	0	0	0	2	2	0	0	0	2										2	2	2

SAURIA

Central American Night Lizard	<i>Lepidophyma flavimaculatum</i>	0	3	5				0	0	1				0	1	4				0	2	2			
Northern Green Gecko	<i>Naultinus elegans</i>	3	2	0	6	8	0							5	5	0				4	5	0			
Tokay Gecko	<i>Gekko gekko</i>	4	11	21				0	0	4				2	2	0				2	9	25			
Round Island Gecko	<i>Phelsuma guentheri</i>	0	2	0										0	1	0				0	1	0			
Leopard Gecko	<i>Eublepharis macularius</i>	3	25	2	1	0	0	0	0	70				0	6	4	0	0	68	4	19	0			
Forest Gecko	<i>Hoplodactylus granulosus</i>	0	0	0	3	3	0	0	0	3	0	0	3	1	1	0				2	2	0			
Anolis Lizard	<i>Anolis equestris equestris</i>	2	2	0										0	2	0				2	0	0			
Common Iguana	<i>Iguana iguana</i>	5	3	0	0	3	0							0	2	0				5	4	0			
Black Spiny-tail Iguana	<i>Ctenosaura similis</i>	4	2	0				0	0	2	0	0	1							4	2	1			
Rhinoceros Iguana	<i>Cyclura cornuta</i>	2	4	0																2	4	0			
Thailand Water Dragon	<i>Physignathus cocincinus</i>	3	3	0	0	0	1	0	0					1	1	1				2	2	1			
Eastern Water Dragon	<i>Physignathus lesuerii lesueri</i>	0	1	0	0	0	6													0	1	6			
Philippine Sail-fin Lizard	<i>Hydrosaurus pustulatus</i>	0	6	0																0	6	0			
Malayan Sail-fin Lizard	<i>Hydrosaurus amboinensis</i>	1	2	3	0	1	0	0	0	9										1	3	12			
Crocodile Lizard	<i>Shinisaurus crocodilurus</i>	1	3	0	4	1	0													5	4	0			
American Basilisk	<i>Basiliscus basiliscus</i>	2	6	5				0	0	109				0	1	0	0	0	114	2	5	0			
Plumed Basilisk	<i>Basiliscus plumifrons</i>	0	0	0	1	0	0													1	0	0			
Prehensile-tailed Skink	<i>Corucia zebrata</i>	2	3	2	2	7	0							2	4	0				2	6	2			
Savannah Monitor	<i>Varanus exanthematicus</i>	1	0	0													1	0	0				0	0	0
Salvator Monitor	<i>Varanus salvator</i>	1	1	0																1	1	0			
Black and Gold Tegu	<i>Tupinambis nigropunctatus</i>	2	2	0													2	2	0				0	0	0
Fat Tail Gecko	<i>Thecadactylus rapicauda</i>	0	1	0																0	1	0			
Bearded Dragon	<i>Acanthodactylus barbatus</i>	0	4	0	1	0	0													1	4	0			
Teguexin	<i>Tupinambis teguixin</i>	1	0	0																1	0	0			
Helmeted Lizard	<i>Corytophanes cristatus</i>	2	2	1				0	0	3				2	2	4				0	0	0			

SERPENTES

Brazilian Rainbow Boa	<i>Epicrates cenchria cenchria</i>	0	0	0	1	2	0							0	0	5				1	2	0
Sunbeam Snake	<i>Xenopeltis unicolor</i>	1	1	0				0	0	12				0	1	0				1	1	7
Calabar Python	<i>Calabaria reinhardtii</i>	1	1	0	1	0	0							0	1	0				2	0	0
Indian Python	<i>Python molurus bivittatus</i>	2	3	0	0	1	0							0	1	0				2	3	0
Royal Python	<i>Python regius</i>	3	3	0	1	0	0	0	0	2	0	0	1	0	1	0				4	2	1
Rubber Boa	<i>Charina bottae</i>	2	0	0																2	0	0
Green Tree Boa	<i>Morelia viridis</i>	0	0	0	1	1	8													1	1	8
Green Anaconda	<i>Eunectes murinus</i>	1	2	0																1	2	0
Boa Constrictor	<i>Constrictor constrictor</i>	4	3	0										1	1	0				3	2	0
Cuban Boa	<i>Epicrates angulifer</i>	2	3	4										0	1	0	0	0	4	2	2	0
Jamaican Boa	<i>Epicrates subflavus</i>	2	2	0																2	2	0
Rainbow Boa	<i>Epicrates cenchria maura</i>	1	2	0																1	2	0
Madagascan Boa	<i>Sanzinia madagascariensis</i>	5	5	0	1	1	0													4	4	0
Honduran Milk Snake	<i>Lampropeltis triangulum</i>	3	2	0																3	2	0
Texas Indigo Snake	<i>Drymarchon corais erebennus</i>	1	1	0																1	1	0
Black Rat Snake	<i>Elaphe obsoleta obsoleta</i>	1	1	0																1	1	0
Western Hog Nose Snake	<i>Heterodon nasicus nasicus</i>	0	1	0										0	1	0				0	0	0
Red-tail Racer	<i>Goniosoma oxycephala</i>	0	1	0										0	1	0				0	0	0
Vine Snake	<i>Oxybelis fulgidus</i>	1	2	0										1	2	0				0	0	0
Jewel Racer	<i>Drymobius margareteriferus</i>	3	2	0				0	0	1				0	1	1				3	1	0
Mangrove Snake	<i>Boiga dendrophila</i>	1	2	0																1	2	0
Indian Cobra	<i>Naja naja</i>	1	1	0				0	0	12							0	0	12	1	1	0
Green Mamba	<i>Dendroaspis angusticeps</i>	1	1	0																1	1	0
Gaboon Viper	<i>Bitis gabonica</i>	1	2	0										0	2	0				1	0	0
Swamp Viper	<i>Atheris nitschei</i>	2	2	0										2	1	0				0	1	0
Bamboo Pit Viper	<i>Trimeresurus albolabris</i>	3	2	1				0	0	10				0	1	0	0	0	10	3	1	1
African Bush Viper	<i>Atheris squamiger</i>	0	0	0	0	0	4							0	0	1				0	0	3
Black Tail Rattlesnake	<i>Crotalus molossus molossus</i>	0	1	0	1	0	0													1	1	0
Red Rock Rattlesnake	<i>Crotalus ruber ruber</i>	0	0	1										0	0	1				0	0	0

CROCODYLIA

Mississippi Alligator	<i>Alligator mississippiensis</i>	1	4	0																1	4	0
Broad-fronted Crocodile	<i>Osteolaemus tetraspis</i>	1	1	0																1	1	0
Johnston's Crocodile	<i>Crocodylus johnstoni</i>	1	1	0																1	1	0

109	170	46	29	31	20	0	0	241	0	0	5	18	46	21	4	3	208	116	152	73
325			80			241			5			85			215			341		

Number of specimens - 341 Number of species - 67

AMPHIBIA

		STOCK 1/1/1990			RECEIVED			BORN/H'CH			D N S 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/90		
		M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7
Smoky Jungle Frogs	<i>Leptodactylus pentadactylus</i>	0	0	0	0	0	35				0	0	1							0	0	34
Axolotl Black Form	<i>Amblystoma mexicanum</i>	aq	0	0	1															0	0	1
Axolotl White Form	<i>Amblystoma mexicanum</i>	aq	0	0	407			0	0	100						0	0	475		0	0	32
Japanese Fire-bellied Newt	<i>Cynops pyrrhogaster</i>	aq	0	0	12															0	0	12
Green Tree Frog	<i>Hyla cinerea</i>		0	0	4									0	0	2				0	0	2
Red Eyed Tree Frog	<i>Agalychnis callidryas</i>		2	4	10			0	0	50				1	3	0				1	1	60
White's Tree Frog	<i>Litoria caerulea</i>		5	5	0															5	5	0
Argentine Ornate Horned Frog	<i>Ceratophrys ornata</i>		1	1	0	0	0	1												1	1	1
African Bullfrog	<i>Pyxicephalus adspersus</i>		1	3	0															1	3	0
South African Clawed Frog	<i>Xenopus laevis</i>	aq	0	0	6															0	0	6
Nigerian Clawed Frog	<i>Xenopus tropicalis</i>	aq	0	0	5															0	0	5
Tomato Frog	<i>Discopus antongili</i>		3	2	0															3	2	0
Climbing Toad	<i>Pedostildes hosei</i>		3	0	0	0	2	0						1	0	0				2	2	0
Fire Bellied Toad	<i>Bombina orientalis</i>		3	7	65			0	0	75							0	0	140	3	7	0
			18	22	510			0	2	36			0	0	1		2	3	2	0	0	615
			190					38		255			1			7		615		16	21	153
																						190

190 specimens 14 species, 3 species bred aq indicates species kept by the Aquarium

INVERTEBRATES

STOCK
31/12/90

COELENTERATES

Tube Anemone	<i>Cerianthus membranaceus</i>	aq	1
Florida Sea Anemone	<i>Condylactis passiflora</i>	aq	2
Sand Anemone	<i>Phymanthus crucifer</i>	aq	4
Carpet Anemone	<i>Stoichactes helianthus</i>	aq	5
Leather Coral	<i>Sarcophyton trocheliophorum</i>	aq	4
Soft Coral	<i>Xenia sp</i>	aq	5
Zoanthid Colony	<i>Zoanthid sp</i>	aq	1

CRUSTACEANS

Banded Coral Shrimp	<i>Stenopus hispidus</i>	aq	2
Blood Shrimp	<i>Lysmata sp</i>	aq	2
Dancing Shrimp	<i>Rhynchocinetes sp</i>	aq	3
Leaf Lobster	<i>Enoplometopus occidentalis</i>	aq	1

INSECTS

Migratory Locust	<i>Locusta migratoria</i>		0
Indian Stick Insect	<i>Baculum sp</i>	*	200
Macleays Spectre	<i>Extatosoma tiaratum</i>	*	11
Philippino Mantid	<i>Hierodulia sp</i>	*	42
Fruit Beetle	<i>Pachnoda marginata</i>	*	50
Six Spot Beetles	<i>Anthia sexguttata</i>		0
Congo Assassin Bugs	<i>Platyeris gigutata</i>		1
Goliath Jungle Nymph	<i>Heteroteryx dilatata</i>	*	1
Seychelles Millipede	<i>Scathiostreptus seychellarum</i>		6

ARACHNIDS

Emperor (Imperial) Scorpion	<i>Pandinus imperator</i>	0
Yellow Scorpion	<i>Buthid sp.</i>	0
Mexican Red-knee Tarantula	<i>Brachypelma (Euathcus) smithii</i>	53
Goliath Bird-Eater	<i>Theraphosa leblondi</i>	1
Thailand Black Scorpion	<i>Heterometrus spinifer</i>	10
Israeli Gold Scorpion	<i>Lieus quinquestritus</i>	4

MOLLUSCS

African Land-Snail	<i>Achatina fulica</i>	0	
Tulip Snail	<i>Fasciolaria tulipa</i>	aq	1
Conch	<i>Fusinus polygonoides</i>	aq	1
Flame Scallops	<i>Lima scabra</i>	aq	3
Patula Taeniata	<i>Patula taeniata</i>	*	120
Clam	<i>Tridacna crucea</i>	aq	1

ECHINODERMS

Short-spined Urchin	<i>Arbacia lixula</i>	aq	4
Long-spined Urchin	<i>Diadema antillarum</i>	aq	1
Slate Pencil Urchin	<i>Eucidaris tribuloides</i>	aq	3
Serpent Starfish	<i>Ophiolepis superba</i>	aq	3
Red Knobbly Starfish	<i>Protoreaster lincki</i>	aq	3

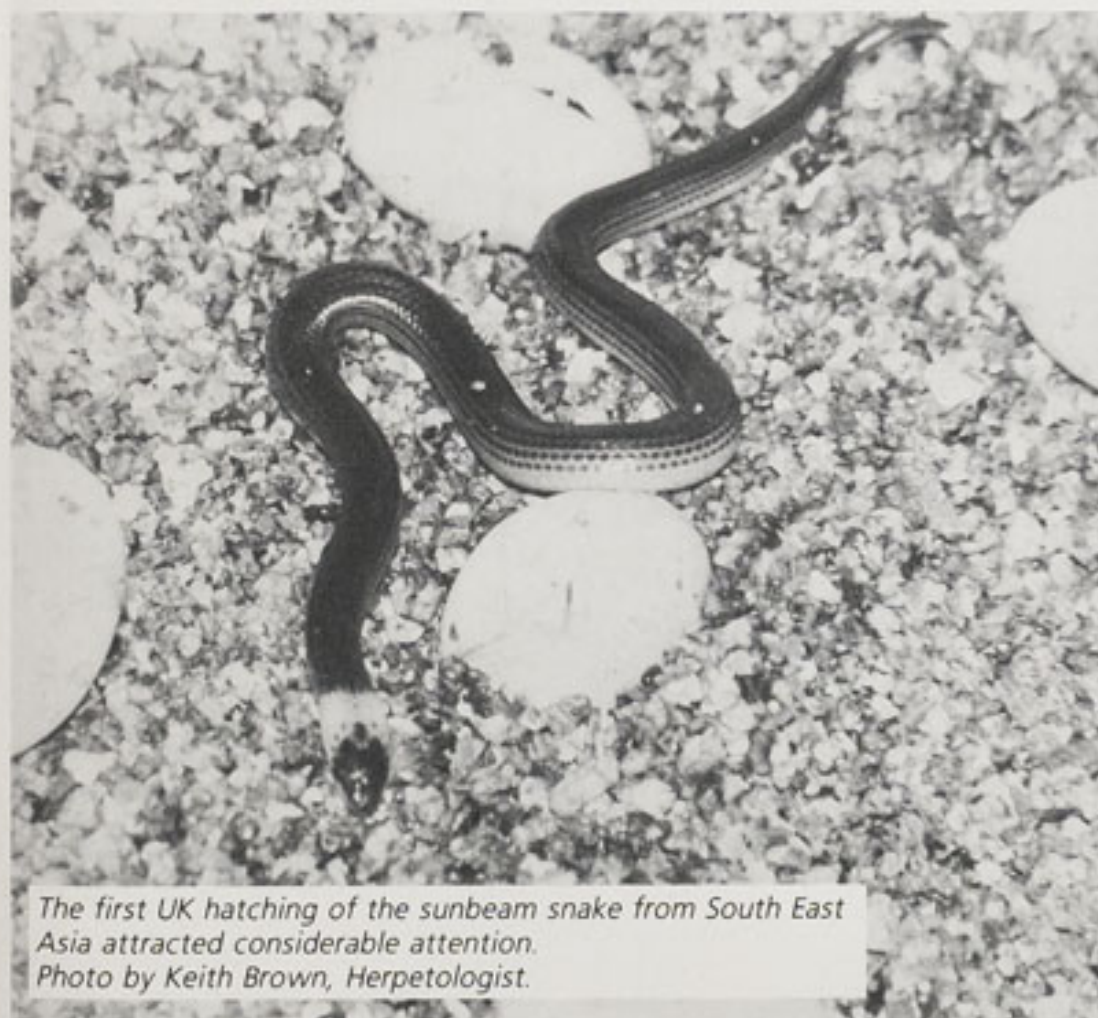
ANNFLIDA

Tube Worms	<i>Gabellastarte indica</i>	aq	6
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Number of Specimens - 555

Number of Species - 33

* indicates species bred in the Society's collection in 1990
aq indicates species kept by the Aquarium



The first UK hatching of the sunbeam snake from South East Asia attracted considerable attention.
Photo by Keith Brown, Herpetologist.



The unique climbing tree toads from the Malayan rain forests.
Photo by Keith Brown, Herpetologist.

ACIPENSERIDAE

Sterlet	<i>Acipenser ruthenus</i>	3
Sturgeon	<i>Husso husso</i>	5
Shovel-nosed Sturgeon	<i>Scaphirhynchus platorynchus</i>	3
Mississippi Paddlefish	<i>Polyodon spathula</i>	8

LEPISOSTEIDAE

Spotted Gar	<i>Lepisosteus oculatus</i>	6
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AMIIDAE

Bowfin	<i>Amia calva</i>	4
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OSTEOGLOSSIDAE

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

NOTOPTERIDAE

African Knife Fish	<i>Xenomystus nigri</i>	14
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MORMYRIADAE

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

POLYPTERIDAE

Marbled Bichir	<i>Polypterus palmas</i>	3
Bichir	<i>Polypterus senegalis</i>	5

CHARACIDAE

Blind Cave Fish	<i>Astynax jordani</i>	7
Long-finned Characin	<i>Brycinus longipinnis</i>	6
Congo Tetra	<i>Phenacogrammus interruptus</i>	26

GYRINOCHEILIDAE

Sucking Loach	<i>Gyrinocheilus aymonieri</i>	20
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CITHARINIDAE

African Pike	<i>Phago loricatus</i>	3
Spotted African Pike	<i>Paraphago rostratus</i>	1

GASTERAPELECIDAE

Marbled Hatchetfish	<i>Carnegiella strigata</i>	4
Silver Hatchetfish	<i>Thoracocharax stellatus</i>	3

CYPRINIDAE

Bream	<i>Abramis brama</i>	2
Silver Shark	<i>Balantiochelus melanopterus</i>	10
Cummings Barb	<i>Puntius cummingi</i>	20
Cherry Barb	<i>Capoeta titteya</i>	12
Goldfish (various)	<i>Carassius auratus</i>	100
Grass Carp	<i>Ctenopharyngodon idella</i>	6
Mirror Carp	<i>Cyprinus carpio</i>	14
Koi Carp	<i>Cyprinus carpio</i>	50
Golden Orfe	<i>Idus idus</i>	50
Black Ruby Barb	<i>Puntius nigrofasciatus</i>	18
Harlequin Rasbora	<i>Rasbora heteromorpha</i>	2
Golden Rudd	<i>Scardinius erythrophthalmus</i>	100

COBITIDAE

Clown Loach	<i>Botia macracantha</i>	12
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ELECTROPHORIDAE

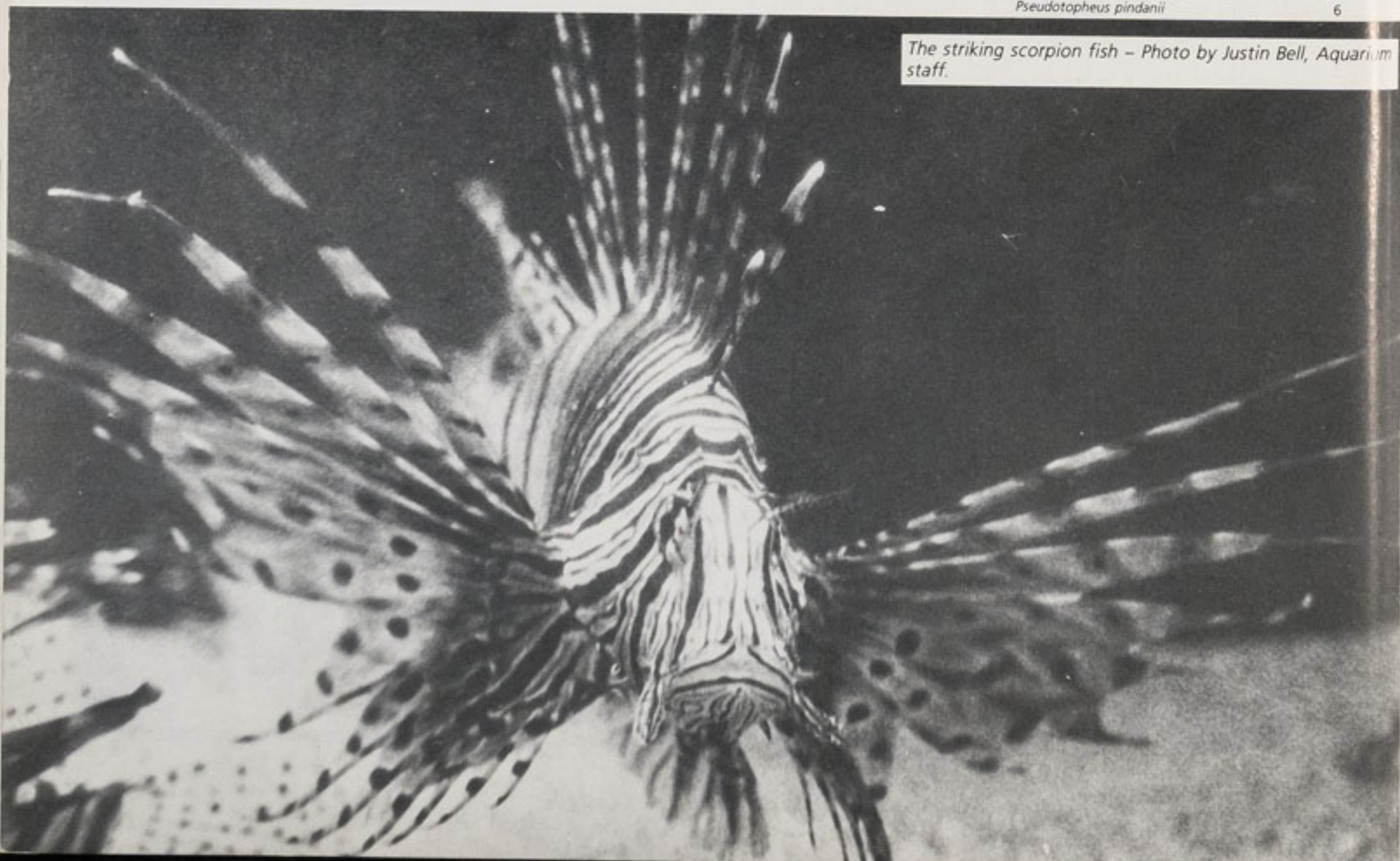
Electric Eel	<i>Electrophorus electricus</i>	1
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NANDIDAE

Dwarf Chameleon Fish	<i>Badis badis</i>	1
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CICHLIDAE

Oscar or Marbled Cichlid	<i>Astronotus ocellatus</i>	8
	<i>Cichlasoma motaguense</i>	2
	<i>Cichlasoma nicaraguense</i>	3
	<i>Cyphotilapia frontosa</i>	27
	<i>Cyrtocara ahli</i>	20
	<i>Heros severus</i>	3
	<i>Symphysodon aequifasciata axelrodi</i>	3
	<i>Symphysodon species</i>	22
	<i>Rhamphochromis macrophthalmus</i>	2
	<i>Nimbochromis venustus</i>	4
	<i>Lethrinops furcicaudis</i>	2
	<i>Melanochromis auratus</i>	6
	<i>Copadichromis borleyi</i>	3
	<i>Copadichromis borleyi</i>	15
	<i>Dimidichromis compressiceps</i>	6
	<i>Pseudotropheus chailosi</i>	20
	<i>Cyrtocara moorii</i>	12
	<i>Haplochromis lobochilus</i>	3
	<i>Microchromis zebroides</i>	6
	<i>Aulonocara baenschi</i>	3
	<i>Hemitalapia oxrynchus</i>	10
	<i>Cynotilapia afra</i>	4
	<i>Aulonocara hueseri</i>	3
	<i>Pseudocrenlabrus philander</i>	20
	<i>Pseudotropheus pindanii</i>	6



The striking scorpion fish – Photo by Justin Bell, Aquarium staff.

ANABANTIDAE

Comb-tailed Paradise Fish	<i>Belontia signata</i>	2
Leopard Climbing Perch	<i>Ctenopoma acutirostre</i>	4
Pearl Gourami	<i>Trichogaster leeri</i>	4
Moonlight Gourami	<i>Trichogaster microlepis</i>	1

ATHERINIDAE

Boeseman's Rainbow Fish	<i>Melanotaenia boesemani</i>	24
Lake Tebera Rainbow Fish	<i>Melanotaenia herbertaxelrodi</i>	12
Lake Kutubu Rainbow Fish	<i>Melanotaenia lacustris</i>	12

TETRAODONTIDAE

Puffer Fish	<i>Arothron hispidus</i>	2
Figure-eight Puffer	<i>Tetraodon palembangensis</i>	10

MOCHOKIDAE

Polka-dot Upside-down Catfish	<i>Synodontis angelicus</i>	6
Decorated Upside-down Catfish	<i>Synodontis decorus</i>	4
Upside-down Catfish	<i>Synodontis nigriventris</i>	9
Upside-down Catfish	<i>Synodontis sp</i>	5
	<i>Synodontis nyassae</i>	6

PIMELODIDAE

Shovel-nosed Catfish	<i>Sorubim lima</i>	2
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CALLICHTHYIDAE

Common Brochis	<i>Brochis splendens</i>	2
Bronze Catfish	<i>Corydoras aeneus</i>	25
Arched Corydoras	<i>Corydoras arcuatus</i>	6
Burgess's Catfish	<i>Corydoras burgessi</i>	6
Blue Catfish	<i>Corydoras nattereri</i>	15
Peppered Catfish	<i>Corydoras paleatus</i>	6
Panda Catfish	<i>Corydoras panda</i>	6
Flag Tail Catfish	<i>Corydoras robiniae</i>	3

LORICARIIDAE

Plecostomus Catfish	<i>Hypostomus plecostomus</i>	12
Royal Plecostomus	<i>Panaque nigrolinatus</i>	1
Clown Plecostomus	<i>Peckoltia sp</i>	60
Bristle-nosed Plecostomus	<i>Xenocara sp</i>	3
Whiptailed Catfish	<i>Sturisoma aureum</i>	10
Angelicus Peckoltia	<i>Peckoltia sp</i>	4

CYPRINODONTIDAE

Guppy	<i>Poecilia reticulata</i>	100
Green Swordtail	<i>Xiphophorus helleri</i>	80
Red Wagtail Platy	<i>Xiphophorus maculatus</i>	15

TOXOTIDAE

Archer Fish	<i>Toxotes jaculator</i>	6
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MONODACTYLIDAE

Mono	<i>Monodactylus argenteus</i>	2
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SCATOPHAGIDAE

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

DORADIDAE

Driftwood Catfish	<i>Auchenipterichthys thoracactus</i>	4
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POTAMOTRYGONIDAE

Fresh-water Stingray	<i>Potamotrygon sp</i>	2
Fresh-water Stingray	<i>Potamotrygon motoro</i>	2

DIPNOI

African Lung Fish	<i>Protopterus annectens</i>	1
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POMACENTRIDAE

Yellow-tailed Blue Damsel Fish	<i>Abudefduf cyaneus</i>	2
Fire Clown Fish	<i>Amphiprion ephippium</i>	2
Tomato Clown Fish	<i>Amphiprion frenatus</i>	3
Common Clownfish	<i>Amphiprion ocellaris</i>	4
Beau Gregory Damsel Fish	<i>Eupomacentrus leucostictus</i>	3

CALLIONYMIDAE

Mandarin Fish	<i>Pterostichopus splendidus</i>	3
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OSTRACIONIDAE

Long-horned Cowfish	<i>Lactoria cornuta</i>	1
Box Fish	<i>Ostracion cubicus</i>	1
Hover Craft Box Fish	<i>Tetrasomus gibbosus</i>	2

SCIAENDIDAE

Jackknife Fish	<i>Equetus acuminatus</i>	3
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DIODONTIDAE

Spiny Puffer Fish	<i>Cylichthys orbicularis</i>	1
Porcupine Fish	<i>Diodon holocanthus</i>	1

ACANTHURIDAE

Regal Tang	<i>Paracanthurus hepatus</i>	2
Yellow Tang	<i>Zebrasoma flavescens</i>	3
Sailfin Tang	<i>Zebrasoma veliferum</i>	1

SERRANIDAE

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

Whimble Fish	<i>Heniochus acuminatus</i>	1
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POMACANTHIDAE

Bicolour Angelfish	<i>Centropyge bicolor</i>	2
Blue-faced Angelfish	<i>Euxhipops xanthometapon</i>	1
Queen Angelfish	<i>Holocanthus ciliaris</i>	1

HAEMULINAE

Pork Fish	<i>Anisotremus virginicus</i>	5
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SCYLIORHINIDAE

Banded Cat Shark	<i>Chiloscyllium punctatum</i>	1
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BALISTIDAE

Tassled File Fish	<i>Chaetodermis pencilligerus</i>	1
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SCORPAENIDAE

Scorpion Fish	<i>Pterois volitans</i>	5
Spotfin Lion Fish	<i>Pterois antennata</i>	3
Shortfin Lion Fish	<i>Dendrochirus brachypterus</i>	1

LABRIDAE

Cigar Wrasse	<i>Hologymnosus doliatus</i>	1
Pyjama Wrasse	<i>Pseudocheilinus hexataenia</i>	1

GRAMMIDAE

Royal Gramma	<i>Gramma Loreto</i>	2
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CIRRHITIDAE

Long-nosed Hawk Fish	<i>Oxycirrhites typus</i>	1
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1317

Number of specimens - 1317 Number of species - 137



The South American arowana and its reflection - Photo by Justin Bell, Aquarium staff.



Zebra and foal – a welcome addition on the paddocks.

The Zoo's place in Society

The Society is consolidating its position as an important regional resource for focussing attention on conservational and environmental matters. We are pleased to welcome schools and colleges, youth groups, undergraduates and postgraduates and we are able to provide more and more bespoke material. We now have audio guided tours on tape complementing

our FEDs tours, and the range of material, books, video tapes and leaflets available from our shops continues to grow.

Seminars on environmental topics, lectures and talks round out our programme of keeping the public aware of conservational priorities.

Adoptions and Sponsorships

The number of individual adopters soared to 2,119 - an increase of 42%, and the value to the Society was £62,000 towards our animal food bills. This is an immense help in our housekeeping. Our adopters enjoyed two special "Adopta" days in the Autumn with keeping staff on hand to report progress and achievement.

Increasingly we find that commercial adoptions and sponsorships give the chance for conservationally-minded organisations to show their care in a practical way. We are grateful to you all and commend the idea to those with conservational interests.

Donations and Legacies

Across the year we receive many donations; some are small, some are large, all are welcome and further our progress. We give grateful thanks to all who help us.

We hope too that our friends and supporters will consider the Society as a beneficiary when wills are being written.

The North of England Zoological Society is a member of the North West Tourist Board, the Wales Tourist Board and the Yorkshire & Humberside Tourist Board and a founder member of the Cheshire Tourist Attractions Consortium.

The 1990 Annual Report was designed and devised by the Zoo's Marketing Department; with typesetting, and printing by Rockliff Printing Group, Aintree, Liverpool. For further information on any aspect of the North of England Zoological Society, please write to The Director, Chester Zoo, Upton-by-Chester, CH2 1LH. (0244) 380280.

