



**The Zoological Society
of London**

Annual Report 1973

ABOUT THE SOCIETY

The Zoological Society of London was founded in 1826, largely as the result of the energy and initiative of Sir Stamford Raffles, Sir Humphry Davy (President of the Royal Society) and other eminent naturalists. It was incorporated by Royal Charter in 1829, its stated purpose being

'the advancement of Zoology and Animal Physiology and the introduction of new and curious subjects of the Animal Kingdom'.

A new Charter was granted to the Society in 1963.

The Society's Gardens in Regent's Park – now known all over the world as the London Zoo – were opened in 1829. A hundred years later the Society acquired and, in 1932 opened, Whipsnade Park, an area of some 500 acres of farm and downland where the rural setting forms a splendid background for animals that are able to roam in large paddocks. Whipsnade Park and the London Zoo are complementary and together house one of the finest and most comprehensive collections of wild animals in the world.

The Society was formed as a scientific society and this remains its prime purpose. Throughout its existence members of its staff, as well as many eminent zoologists and visiting scientists, have studied material derived from the Collection and have made important contributions to our knowledge of taxonomy, comparative anatomy and physiology, human and veterinary medicine, pathology, ecology and animal behaviour. Two Research Institutes and a modern veterinary hospital which is linked with a Pathology Department, all of which were established between the years 1956 and 1965, have greatly extended the scope of research which can be undertaken and sponsored by the Society.

Scientific meetings are held on the second Tuesday in the months February to June and October to December. At these meetings the results of new research are communicated and discussed, and specimens and films of zoological interest are exhibited. Symposia on special subjects are also arranged. The Society owns one of the finest zoological libraries in the world, which has been built up over the 147 years' of its existence.

The Society's publications include:

The *Journal of Zoology* (the *Proceedings of the Society*). Three volumes (12 parts) are published annually containing papers which cover all fields of zoology.

The *Transactions* are published at irregular intervals.

The *Symposia* record the papers read at the Symposia.

The *Zoological Record*, a comprehensive bibliography of zoological literature with subject and systematic indices, is available either as a complete volume or separately in 22 parts dealing with the different animal groups.

The *Nomenclator Zoologicus* contains the names of all the genera and subgenera in zoology from the 10th Edition of Linnaeus 1758 to the end of 1955, with a bibliographical reference to the original description of each. The work contains approximately 260,000 entries and is published in 6 volumes.

The *International Zoo Yearbook*, published annually, provides authoritative information on developments in the zoo world.

Report of the Council

The Council has pleasure in presenting
its 145th Annual Report to the
Annual General Meeting of the Society
to be held on Wednesday 22nd May 1974
at 4.00 pm in the Society's Meeting
Room at Regent's Park

THE ZOOLOGICAL SOCIETY OF LONDON

THE ZOOLOGICAL SOCIETY OF LONDON

PATRON: HER MAJESTY THE QUEEN

COUNCIL 1973-1974

President: HRH The Prince Philip, Duke of Edinburgh, KG, KT

Treasurer: Sir Terence Morrison-Scott, DSC, DSc

Secretary: Professor Lord Zuckerman, OM, KCB, MD, DSc, FRS

Professor E. J. W. Barrington, MA, DSc, FRS, *Vice-President*

The Earl of Bessborough, *Vice-President*

Aubrey Buxton, MC, *Vice-President*

Professor J. M. Dodd, DSc, PhD, FIBiol, FRSE

The Lord Donaldson, OBE

R. Romilly Fedden, CBE

Sir Dudley Forwood, Bt

Raymond Greene, MA, DM, FRCP, *Vice-President*

W. Lane-Petter, MA, MB, BChir, FIBiol

The Hon. Ivor Montagu

Sir Michael Perrin, CBE, FRIC, *Vice-President*

Air Vice-Marshal G. Silyn Roberts, CB, CBE, AFC, MSc

C. E. Gordon Smith, CB, MD, FRCP, FRCPath

J. Eric Smith, CBE, ScD, FRS

The Lord Strathalmond, CMG, OBE, TD

Ronald G. Waterhouse, QC, JP, MA, LLB

C. A. Wright, DSc, PhD, FIBiol, *Vice-President*

Woodrow L. Wyatt

THE ZOOLOGICAL SOCIETY OF LONDON

HONORARY FELLOWS

Date of election

- 1971 His Majesty Emperor Hirohito of Japan
- 1952 Professor J. Berlioz
Muséum National d'Histoire Naturelle,
Jardin des Plantes, 57 rue Cuvier, Paris 5^e, France
- 1937 HH Maharajah Raol Shri Krishnakumarsinhji Bhavsinhji of Bhavnagar,
Bhavnagar, Kathiawar, India
- 1951 Professor Dr H. Boschma
Rijksmuseum van Natuurlijke, Leiden, Holland
- 1955 Dr G. W. Corner
American Philosophical Society, 104 South Fifth Street,
Philadelphia 6, Pennsylvania, USA
- 1957 Professor Robert Courier
L'Institut de France (Académie des Sciences), 23 Quai de Conti,
Paris 6^e, France
- 1945 Monsieur Jean Delacour
Parc Zoologique de Clères, Clères, Rouen, S-M, France
- 1952 Professor Sven Otto Hörstadius
Zoologiska Institutionen, Uppsala, Sweden
- 1948 Professor A. R. Jorge
Museu Bocage, Faculdade de Ciências, Lisbon, Portugal
- 1939 The Rt Hon. Sir Robert Gordon Menzies
2 Haverbrack Avenue, Malvern, Melbourne, 3144, Victoria, Australia
- 1952 Dr R. C. Murphy
American Museum of Natural History,
Central Park West at 79th Street, New York, USA
- 1953 Professor Dr A. H. Schultz
Anthropologisches Institut der Universität Zurich,
Sempersteig, Zurich 1, Switzerland
- 1947 Professor G. G. Simpson
Department of Geology, University of Arizona, Tucson, Arizona 85721, USA
- 1937 Dr E. A. Stensiö
Naturhistoriska Riksmuseum, Stockholm 50, Sweden

CONTENTS

REPORT OF THE COUNCIL

The Membership	7
Finance	9
The London Zoo	11
Whipsnade Park	17
Scientific activities	20
Research	22
Educational activities	26
General matters	28
Acknowledgments	30

APPENDICES

1. Committees	33
2. Staff	35
3. Publications by Society's staff and research workers	36
4. List of animals received	38
5. Donors of animals	48
6. Donations to the Zoological Record Fund	51
7. Books presented to the Library	52
Meetings during 1974	53
Financial accounts	55

THE MEMBERSHIP

COUNCIL

The President, HRH The Duke of Edinburgh, presided at the Annual General Meeting which was held on 23rd May. The following Members of Council retired:

The late Sir Harry Legge-Bourke

The Earl of Cranbrook

The Duke of Northumberland

Professor A. T. Phillipson

Air Vice-Marshal G. Silyn Roberts (appointed to fill the casual vacancy caused by the death of Dr J. D. Carthy)

Sir Peter Scott

The Fellows elected to fill these vacancies were: Sir Dudley Forwood, Air Vice-Marshal G. Silyn Roberts, Mr Woodrow L. Wyatt (Ordinary Fellows), Sir Michael Perrin, Dr C. E. Gordon Smith, Dr J. Eric Smith (Scientific Fellows).

The President presented the following awards for contributions to zoology:

The Stamford Raffles Award (awarded to an amateur zoologist for distinguished contributions to zoology) to *Dr L. G. Higgins*, British Museum (Natural History), in recognition of his outstanding contributions to knowledge of the Lepidoptera. The award was a sculpture in bronze, *Wild Boar*, by Miss Elisabeth Frink.

The Scientific Medal (awarded to persons under 40 years of age for distinguished work in zoology) to *Dr Colin Patterson*, British Museum (Natural History), for his work on fossil fishes in a wide field; and to *Dr Martin Rudwick*, University of Cambridge, for his work on fossil brachiopods.

The Thomas Henry Huxley Award (for original work submitted as a doctoral thesis) to *Dr Peter G. Moore*, University of Leeds (now at the University Marine Biological Station, Millport), for his thesis 'A study of pollution in certain marine ecosystems'. The award was a sculpture in bronze, *Egret*, by Mr David Wynne.

The Prince Philip Prize (for an account of practical work involving some aspect of living animals by a pupil, under 19 years of age, in a school in the United Kingdom) awarded to *J. D. Colvin*, of Charterhouse, Godalming, Surrey, for his essay 'Palatability tests and the factors involved using the small *Helix pomatia*'.

In the New Year Honours List, Mr Peter Scott was knighted for services to conservation, and Mr R. R. Fedden, Deputy Director General, The National Trust, was appointed CBE.

Miss Eirwen Owen, the Director of Administration, was appointed CBE in the Birthday Honours list.

ROLL OF MEMBERS

At the end of the year there were 2,878 Fellows and 2,538 Associates.

ASSOCIATION OF BRITISH ZOOLOGISTS

The Association of British Zoologists was founded immediately after World War I by a group of distinguished zoologists who decided to meet regularly between the annual meetings of Section D (Zoology) of the British Association for the Advancement of Science. The Association ceased to exist in January 1973, and at its final meeting, it was resolved to transfer assets of about £1,000, to the Society.

The Council were given discretion to use the funds as they wished, but the Association suggested that an annual award should be made to some person who is contributing, or had contributed to zoology. The Association's proposal was accepted by the Council, and a medal specially designed and generously donated by Miss Elisabeth Frink, was instituted. It will be called the Society's 'Frink Medal for British Zoologists', and awarded at the discretion of the Council.

It was decided that the first medal should be awarded to Sir Julian Huxley in recognition of his contributions, over many years, to zoological science.

OBITUARY

The Council records with deep regret the deaths of Dr Edward Hindle, FRS, Scientific Director of the Society between 1944 and 1951; Sir Harry Legge-Bourke, a member of the Council at the time of his death and a Fellow since 1934; Dr W. K. Gregory, an Honorary Fellow of the Society since 1929; and Professor A. S. Romer, who had been a Corresponding Member of the Society since 1940 and had been elected an Honorary Fellow in July.

FINANCE

Total receipts rose to £1,564,000, an increase of £207,000 (15 per cent) compared with 1972. Expenditure also increased because of higher salaries and wages, the inflationary rise in the cost of food and materials, and the need to undertake certain exceptional items, such as the renewal of the road trains at Whipsnade and extensive repairs to the roof of the Bird House at Regent's Park. Total expenditure amounted to £1,509,000, 12 per cent higher than 1972. The result for the year was a surplus of £55,000 which, after writing off the deficit on the Income and Expenditure account carried forward from previous years, enabled us to make a small additional contribution to the Buildings Replacement Fund.

The higher income was due almost entirely to buoyant attendances at both zoos. At Regent's Park the number of visitors was 2,045,000, an increase of 68,000 (3 per cent) over 1972; this is the first time since 1968 that the target figure of two million has been achieved. At Whipsnade attendances were 622,300, about 9 per cent above those for 1972, and the highest since 1965.

The high level of attendances was achieved in spite of increased admission charges from the beginning of April, which included Value Added Tax. This tax added ten per cent to admission and most other charges. It caused considerable administrative difficulty, and is the first time in the Society's history that a tax has been levied on entrance charges.

Capital expenditure during the year was £231,000. The most important new item which was started was the Education Centre, on the site of the former North Mammal House. The Centre will provide additional lecture rooms, a seminar room and special facilities for handicapped children. The cost is being met partly from the Government capital grant and partly from the grant received earlier from the Wolfson Foundation. While the plans for the Education Centre were being prepared the Inner London Education Authority made a capital grant to the Society of £60,000 for the building of a Teachers' Centre alongside the Education Centre. The buildings, which will be linked, are being built concurrently and are due to be completed in the Spring of 1975.

At Whipsnade the Water Mammals Exhibit and the improvements to the Polar Bear Exhibit were completed and a start made on the Asian and African Regional Exhibits.

DONATIONS

The Council gratefully acknowledges a number of gifts including £3,500 from the Prudential Assurance Company Ltd, and an anonymous donation of £1,000.

The Society's total expenditure on scientific and educational work is as follows:

Scientific and educational expenditure during 1973

	£	£
VETERINARY WORK		
Hospital, Regent's Park, and veterinary expenses, Whipsnade	31,100	
Pathology Department	25,900	57,000
EDUCATION		
Education Department	15,200	
Young Zoologists' Club	5,300	20,500
RESEARCH		
Wellcome Institute of Comparative Physiology	49,000	
Nuffield Institute of Comparative Medicine	189,100	238,100
PUBLICATIONS		
<i>Zoological Record</i>	113,000	
<i>Nomenclator Zoologicus</i>	2,700	
<i>Journal of Zoology, Transactions and Symposia*</i>	21,900	
<i>International Zoo Yearbook</i>	16,300	153,900
MISCELLANEOUS		
Library	22,900	
Other scientific expenses	12,200	35,100
		£504,600

*Published jointly with Academic Press Inc. (London) Ltd, the expenses and income being shared equally.

Sources of Funds

	£
Research funds, project grants and donations	155,800
Charges for educational visits and Young Zoologists' Club subscriptions	15,700
Publications sales	149,500
Society's contribution	183,600
	£504,600

ZOO RESTAURANTS LTD

Zoo Restaurants had another successful year and enhanced its reputation for the excellence of the evening banqueting arrangements held in the Restaurants and the Tavern Room. One hundred and fifty eight functions were catered for.

The four evening occasions for members and their guests attracted 1,400 diners. The weather was perfect on each occasion, and the Gardens were at their best.

THE LONDON ZOO

Visitors during the year 2,045,400

Visitors to the Children's Zoo 319,700

Visitors to the Aquarium 567,750

GENERAL

1973 was a good Zoo year with many births among the animals and several improvements to the exhibition and facilities. The high attendance in spite of no really outstanding animal event or the opening of any major new building or installation reflects the very high standard of 'normality' at the London Zoo.

The visit by a delegation of the Parliamentary and Scientific Committee on 28th November stands out among an exceptionally large number of special visitors to Regent's Park in 1973.

There were also several visits from overseas bodies, governmental and zoo, to seek advice on the design and planning of new zoos. This is a demanding but nonetheless welcome recognition of the Society's international stature. Notable groups came from the Taronga Park Zoo, Sydney, Belfast Parks Department and various Nigerian States.

It was hoped that 1973 would see a start to the replacement of our outdated Lion House, built in 1875, but because of staff shortages this did not prove possible. No major building other than the new Education and Teachers' Centre was therefore started during the year.

Two other important building projects were, however, completed, with help from the Government grant. The long drawn-out process of resurfacing the 60-year old Mappin Terraces which began in 1970 was completed in April 1973. The last four months of work were mainly concerned with resealing some sections of the treated surface.

The new block of lavatories near the Main Gate was not quite finished by the end of 1973, as it should have been, but was handed over soon afterwards. As in other cases, the delay was due mainly to the difficulties experienced by the contractors in obtaining building materials, particularly steel, and also a shortage of skilled labour.

There was the usual number of vital smaller projects, carried out by the Works Department and, in some cases, by contractors, under the direction of the Architect. Improvements to some of the bird houses and aviaries were among the most important of these.

The Parrot House was completely redecorated and new internal lighting installed. At the same time, the former Budgerigar Aviary was modified to hold a breeding colony of Lovebirds. New indoor aviaries, suitable for breeding pairs, are being constructed in the Bird House, following the lines of the successful Bee-eater Exhibit established in 1972. Lastly, the Eastern Aviary has had a thorough overhaul, not only to help with maintenance but also to make part of it suitable for the isolation, for reasons of health, of new birds coming into the Collection. Quarantine quarters are

available in the Hospital, but not enough space was previously available for non-statutory isolation.

Several other minor improvements were made during the year. Some alterations were made in the Library; the British Waterways Waterbus landing stage on the Canal was re-built; new multi-sided signboards were installed at the Main Gate; the staff Social club was repaired; a background sound system was installed in the Tropical House; and an inspection pen was built in the Giraffe House to help in the control and handling of these animals.

Finally, plans were made and approved during the year for the redevelopment of parts of the Children's Zoo as a farm demonstration area. Work started in October on stalls and a milking parlour for an exhibit of milking cows, on a stable for a cart-horse, and on a new entrance area. These works should be finished in time for the 1974 season. Following upon the changes in the Children's Zoo, the former Chimpanzee Tea Party lawn was successfully revamped as a summer enclosure for the Giant Tortoises, whose statuesque immobility has turned out to be as interesting to the public as the past boisterousness of young Chimpanzees.

During the year several groups of animals passed through the prescribed period of rabies quarantine in either the Hospital, the Sobell Pavilions or the Clore Pavilion. These were the first to do their quarantine under the new regulations brought into force in 1972. The process was started on 3rd January for four Brown Lemurs in one of the corridors in the Clore Pavilion which has been specially set aside for this purpose.

During the year the pest control firm of Rentokil Ltd put forward proposals for a more thorough and methodical way of dealing with pests in the Zoo, mainly rats, mice and cockroaches. An experimental six-month programme was started in October and the results will be reviewed early in 1974.

THE COLLECTION

Mammal Section In the second year of this new exhibit, the apes and monkeys in the Sobell Pavilions were once again a main attraction. The suitability of the design of the outside enclosures for primates was confirmed by the behaviour of the animals.

There were several births among the apes and monkeys, including two Orang-utans, one in the Sobell Pavilions and one in the separate Breeding Colony building. Unfortunately the former baby was abandoned by its mother and survived only a few days of hand-rearing. Nonetheless, three young Orangs, including two females, have now been produced from the group of young animals which came to the Zoo from Hong Kong in 1967. This is an important achievement, not only from the point of view of zoo management but also from that of conservation.

The similarly successful but longer record of Chimpanzee breeding was continued in 1973 with another baby born to 'Brenda', one of the females of the main exhibition group. Perhaps more interesting was the behaviour of 'Abena', the senior female of the group, who took over as foster-mother a two-year old baby when the latter's mother, 'Jenny', died early in the year. The remarkable way in which the baby was accepted back into the group after a few days' absence was delightful to see, and a justification of the decision to form a social group of chimpanzees of all ages.

Other births in the Sobell Pavilions included a Ring-tailed Lemur, a Brown Capuchin

and two Pig-tailed Monkeys. The Ring-tailed Lemurs have been moved temporarily to the Sobell Pavilions from the Clore Pavilion so that a new group can be built up in the rather larger space that is available there.

Groups of Black Spider Monkeys and Gelada Baboons were added to the Collection as part of the process of presenting in the Sobell Pavilions the broadest picture of the primate world consistent with good accommodation and display.

The young male Polar Bear born at the end of 1972 achieved more than the usual touch of stardom expected of Polar Bear cubs. The name of 'Paddiwack', suggested by the Headkeeper, may have had much to do with this.

It was a good year on the Mappin Terraces not only for 'Paddiwack'. Nearby, in the bear enclosures, a pair of American Black Bear cubs was born and successfully reared, the first ever in the Society's Collections. And on the hills, apart from the usual crop of Barbary Sheep and Mouflon, a pair of Markhor kids was born and raised. This was a particularly welcome success, since the new Markhor group assembled in 1971 and 1972 included only one female.

Other births worthy of special notice were those of a Malayan Tapir, a Wolf Cub and several Blackbuck. The Malayan Tapir, born on 24th January, unfortunately died at three weeks but it was the first young to a pair of animals which have been together for some years and which had been thought to be too old for breeding. It was also only the second time that this species, which is rarely bred successfully in captivity, has bred at Regent's Park; there is now the possibility of further births.

Blackbuck have bred well at Regent's Park ever since the herd was moved to the Cotton Terraces in 1963. However, there have been problems due to the spread of breeding over the whole year, and casualties from winter births are often high. Since 1972 the animals have been controlled to ensure births only in the summer with the result that, of 12 animals born in July and August, 10 survived and are flourishing.

The births of two Common Zebra and one Onager are notable, as is the now regular list of breeding successes in the Clore Pavilion. These include Spiny Tenrec, Senegal Bushbaby, Large Tree Shrew, Talapoin Monkey, Red-mantled Tamarin, Brown Lemur and Fennec Fox. The Fennec Foxes are another 'second generation' captive-born success, since the mother was herself born in the Clore Pavilion in 1971. She had one young in 1972 which did not survive. In addition two Furry Armadillos were born to a pair which have been in the Clore Pavilion since it opened in 1967, but which had not bred before. The young did not survive.

A sad event marked the end of the year in the Elephant and Rhinoceros Pavilion. The male Black Rhinoceros 'Paul' which arrived as a comparatively young animal in 1966, and which was the father of the two female calves born in 1969 and 1972, died suddenly in December, very much in his prime. Fortunately the Society has another successful breeding pair of Black Rhinoceros at Whipsnade, and the present calf there is a male.

The story of the Elephant and Rhinoceros Pavilion during 1973 is not complete without a reference to the White Rhino 'Ben', who had lived longer in captivity than most other White Rhinos (he came here in 1955). He declined in health to the point at which his imminent end was expected and then, just as gradually, recovered to end the year in excellent condition.

At the end of 1972, a young African Elephant arrived in Britain as a gift to HM The Queen from the President of the Cameroon Republic. It was originally intended for the GLC's Crystal Palace Zoo, but this had proved unsatisfactory and the Society was asked to take it over. Since the elephant accommodation at Regent's Park is, as a matter of policy, not intended for males, it was decided that the animal would eventually be moved to Whipsnade where space is adequate and the elephant handling facilities more amenable to modification. The necessary changes took longer than expected and it was not until 23rd August that the young elephant, inevitably named 'Jumbo', was moved to Whipsnade. While in Regent's Park it was housed in the Cattle House on the Cotton Terraces.

An important acquisition was a pair of Pudu, a small and rare species of South American Deer, of which only a few specimens are in captivity. These were generously presented by the Antwerp Zoo, which has a breeding group, as a contribution towards conservation.

On 10th November, the Society helped the Lord Mayor's Show by providing two Llama carts for the parade, which had an animal theme. Our contribution was suitably acclaimed.

Bird Section As already noted, several minor but important improvements to bird exhibits have been carried out during the year. Apart from the maintenance and aesthetic factors involved, the changes have been designed to make easier a process of resettlement of individuals or groups of birds so as to improve prospects for breeding.

With the interior of the Parrot House renovated, the stock in the outside aviaries has been reorganized to make up potential breeding groups, including pairs of Ruppell's Parrots and Thick-billed Parrots. Because of the danger of psittacosis it was decided not to keep Budgerigars any longer, and the old Budgerigar Aviary is now stocked with a breeding colony of Fischer's Lovebirds.

The North Bank Pheasantries, with improved inside shelters, now house a number of species not seen in the Collection for many years, including Satyr Tragopans, Soemmerring's Copper Pheasants, and Nepal Kalij. The extensive modifications to the Eastern Aviary complex include the conversion of the back part into isolation quarters for new arrivals which do not have to be quarantined in the Hospital. Each of the new indoor aviaries now being built in the Bird House will hold a pair of breeding birds. The number of birds in the Snowdon Aviary has been increased, and now includes small flocks of Inca Terns and Spoonbills, and two pairs of Alpine Choughs.

The year has also been noticeable for the number of 'arranged' bird marriages. Potential mates have been obtained for, among others, the Wreathed Hornbill, Ostrich, Sarus Crane and Rufous-tailed Hummingbird. Also to be noted is the loan to the Society by the Wildfowl Trust of another Hawaiian Goose to pair with the female hatched at Regent's Park in 1972.

Several new pairs of birds have been acquired, including Toucan Barbets, Trumpeter Hornbills, Azure-winged Magpies, Gaudy Barbets, Red and Yellow Barbets, and African Harrier Hawks.

Two Knysna Turacos, a species not bred in the Collection before, were reared successfully in the Bird House, and a Black Kite, bred in the Southern Aviary, was a rare

and welcome event. The success story with exotic owls was continued in 1973, and 22 were bred, including four Snowy Owls, two West African Wood Owls and nine Savigny's Eagle Owls.

Species new to the Collection included Citron-throated Toucan (*Ramphastos citreolaemus*), Jackson's Hornbills (*Tockus deckeni jacksoni*), Pavonine Quetzals (*Pharomachrus pavoninus*), Laminated Hill Toucans (*Andigena laminirostris*). A Fairy Lorikeet (*Charmosyna pulchella*) and a pair of Vermiculated Fishing Owls (*Scotopelia bouvieri*) were the first in the Collection for many years.

Aquarium Work has been proceeding on the rebuilding of the tanks for flatfish and other small marine fishes. New water pumps have been installed for the Sea-water and Tropical Halls. Some experiments have been carried out with electro-luminescent labels for species identification in the Aquarium.

During the year there has been a considerable increase in the number and range of tropical marine fishes. This has been made possible by improved methods of circulation and filtration.

The staff carried out six fishing trips to the south coast to catch marine fishes and invertebrates. Three collections were received from Madeira; these included Puffer Fish, Peacock and Green Wrasse, starfishes and sea-anemones. The National Aquarium of Washington, DC, presented some Large-mouthed Black Bass, a species last exhibited here some 20 years ago.

Insect House Breeding successes during the year included Lubber Locusts, Jungle and Desert Scorpions and Jockey Spiders. The collection of stick-insects has been augmented by two species that are new to the Collection. These are *Ctenomorphodes tessulatus* from Queensland and *Phibalosoma phyllinum* from Brazil.

Specimens of the Red-jointed Bird-eating Spider (*Brachypelma smithi*) from Central America are the first to be exhibited here for over 20 years. During the summer months the outside flight cage has had a very representative collection of British butterflies, and in addition, the attractive *Hypolimnas bolina* from the Indo-Australasian region.

The staff of the Insect House have made two trips into the country to collect Red Wood Ants, and three to collect pond fauna.

The achievements of the Insect House section have been notable in spite of relatively poor accommodation and limited resources. The Council has now set up a Working Party, under the Chairmanship of Dr C. A. Wright, to make plans for the further development of the Insect House, as and when financial and other considerations allow.

Reptile House Reptiles bred during the year included Thailand Water Lizards, Boipevussu Snakes, Malayan Pit Vipers, Pygmy Rattlesnakes and Western Diamond-back Rattlesnakes.

A Southern Anaconda, a species which was last exhibited 23 years ago, was added to the Collection.

During the year a Royal Python was presented to Antwerp Zoo, and a Boa Constrictor, a Royal Python and three Iguanas were sent to Rangoon Zoo in exchange for two Estuarine Crocodiles.

VETERINARY AND PATHOLOGY REPORTS

During the year 503 animals received veterinary attention. This number includes those animals receiving attention because of illness, as well as examinations as part of routine survey programmes.

183 privately owned animals were examined as referred cases by veterinary surgeons in general practice.

The ruminants on the Cotton Terraces are now fed pelleted diets with grass nuts, hay, clover and vegetables; browse is added where necessary. These have replaced the meal mix to which it was necessary to add a mineral and vitamin supplement.

The health of the animals in the Collection remains good, and reflects the improvement in nutrition. Perinatal mortality in Barbary Sheep (*Ammotragus lervia*) and Mouflon (*Ovis musimon*) is still a cause for concern. Several factors which may be involved are being investigated. Further details of the work of the Hospital and of post-mortem examinations and research carried out in the Pathology Department, including the Fish Pathology Unit, are given in the Society's biennial Scientific Report, published in the *Journal of Zoology* (Volume 173).

Dr Eleanor Browne joined the Pathology Department in April as a temporary worker in the Fish Pathology Unit in order to work on protozoan infections of fish. Whilst on sabbatical leave during the summer, Professor G. B. D. Scott (Royal Free Hospital) worked in the Department to study comparative pathology.

Groups which visited the Veterinary Hospital included Senior Animal Technicians from Oxford University Departments, students from Cambridge University Veterinary Society, medical students from University College London, students from the Royal Veterinary College, London, members of the Essex Veterinary Society and students from St Albans Girls' Grammar School and Northwood College. There was also the usual number of individual visitors, veterinarians and other interested people, from all over the world. During the year nine veterinary students spent various periods in the Hospital as part of their vacation training period.

Animals of all kinds (except fish and invertebrates) at the London Zoo

	<i>In the Collection on 1 January 1973</i>	<i>Received in 1973 by presentation, exchange, deposit, purchase and transfer from Whipsnade</i>	<i>Born and hatched in the Menagerie in 1973</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Whipsnade</i>	<i>In the Collection on 31 December 1973</i>
Mammals	885	146	241	383	889
Birds	1,228	161	108	310	1,187
Reptiles and Amphibians	928	379	75	594	788
	3,041	686	424	1,287	2,864
<i>Estimated numbers of fish and invertebrates in the Collection at 31 December 1973</i>					
Fish	2,318	Invertebrates (excluding locusts, ants and bees)		2,920	



The Secretary with members of staff who have served the Society for 25 or more years, on the occasion of the presentation of gold watches, 21st March, 1973

The Zoological Society of London

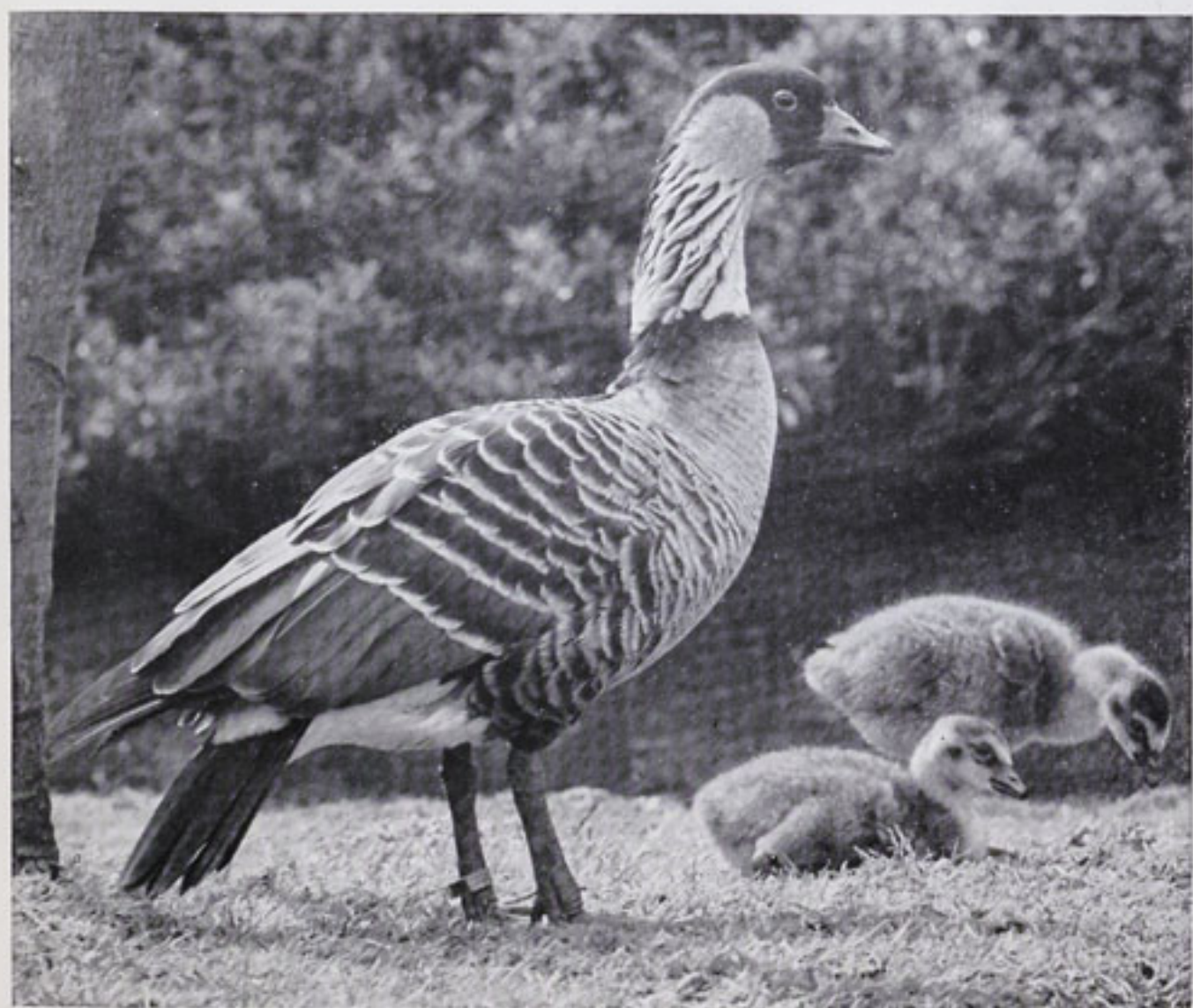


West African Wood Owl and chicks, London Zoo

The Zoological Society of London



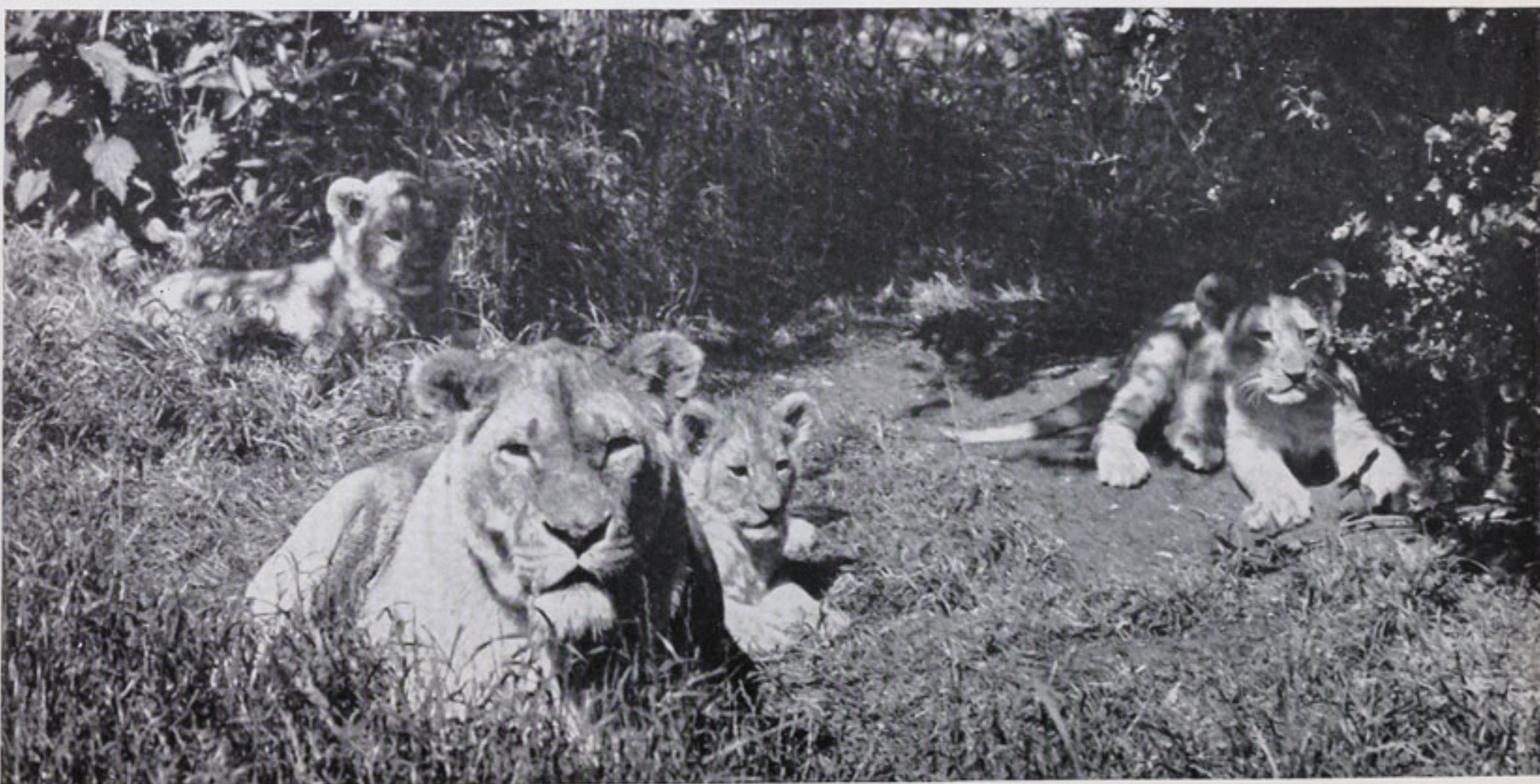
Ring-tailed Lemur with baby
(four weeks old), London Zoo
The Zoological Society of London



Hawaiian Goose and chicks
(10 days old), London Zoo
The Zoological Society of London



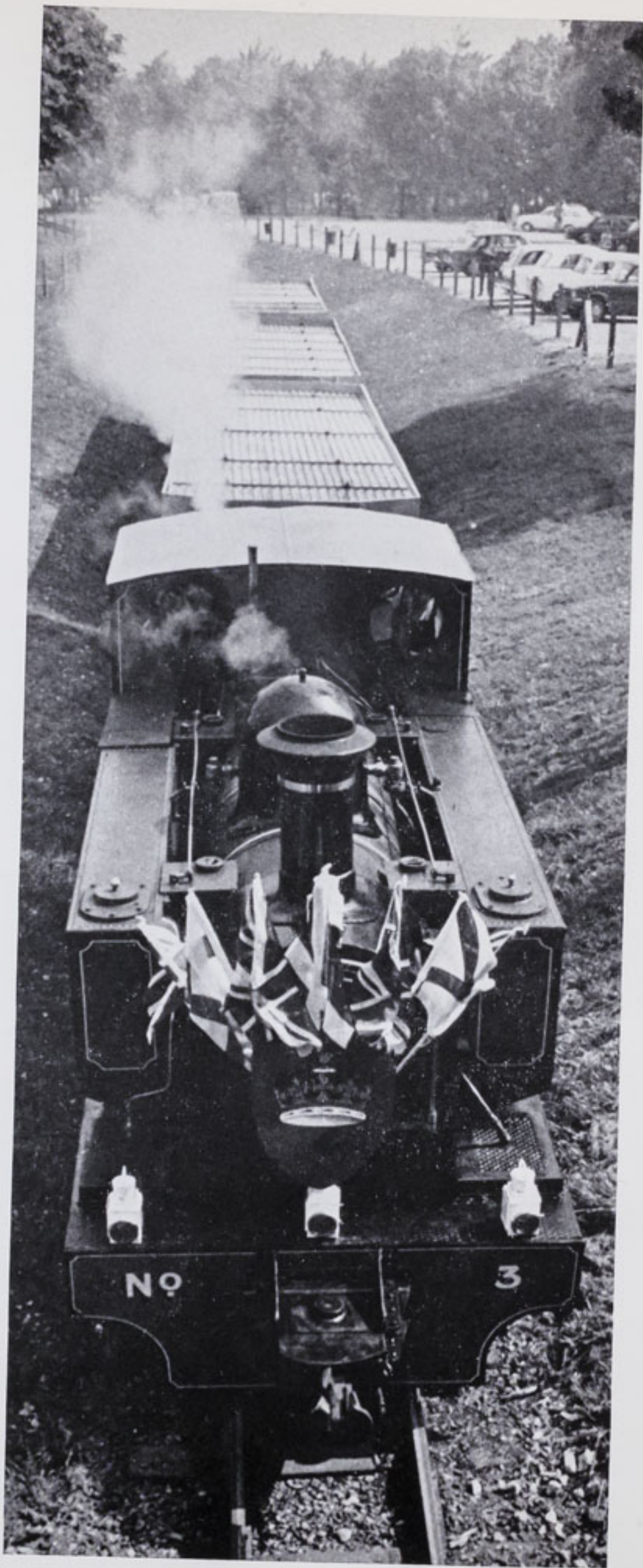
Rosy Flamingos with chicks
(two weeks old), Whipsnade Park
The Zoological Society of London



Lioness and her three cubs, at
Whipsnade Park
The Zoological Society of London

The Whipsnade-Umfolozi railway,
inaugurated by HRH The Princess
Margaret on 2nd August, 1973
The Zoological Society of London

Radiograph of General Hardwicke's Dabb
Lizard (*Uromastix hardwickii*). From the
Wellcome Animal X-ray Museum collection,
Nuffield Institute of Comparative Medicine,
Published by Macmillan Education in
Biological Radiographs, Set 1, Vertebrate
Skeletons, by Ann Blofield and George du
Boulay, 1973.



WHIPSNADE PARK

Visitors during the year 622,300
Visitors to the Children's Zoo 169,700
Cars brought into the Park 58,800

GENERAL

HRH The Princess Margaret, Viscount Linley and Lady Sarah Armstrong-Jones visited Whipsnade on 2nd August to inaugurate the extended circuit of the Whipsnade and Umfolozi Railway. After a ride over the new track, the party went to the Water Mammals Exhibit and, in the afternoon, made a private tour of other parts of the Park.

Work on the new railway circuit had started in 1972 and dominated and affected all other developments during the first half of the year. To close the circle it was necessary to cross several paddocks, including Valley Meadow, Cut Throat Paddock and Round Close. The main road system also had to be cut, by two level-crossings and a tunnel, at three points. A new station had to be built near the planned Zoo 'Centre' in the area of the Water Mammals Exhibit.

The greatest disturbance to the normally placid winter scene at Whipsnade was the cutting of the main road just below the Flamingo Pond to make the tunnel between Cut Throat Paddock and Round Close. This meant diversions for cars and additional signposting to ensure that visitors could still reach all parts of the Park. Fortunately a mild winter helped lighten what would otherwise have been a heavy burden on the Whipsnade staff.

Apart from the construction of the railway itself, the consequential development, involving new roads and new fencing, was a major exercise which consumed all the resources of Whipsnade over the first half of the year. New fences had to be erected along the railway track and within the paddocks themselves, changes in the shape and size of a few also necessitating new roads and paths.

To meet the increasing demand by the public to bring cars into the Park (the numbers of cars have risen from under 45,000 to nearly 60,000 a year over the last seven years), a one-way system of traffic for busy days and some extra car-parking areas have been developed.

The road from the Children's Zoo to the Wolf Wood was realigned and improved, and a temporary but all-weather car park laid down in this area. This serves as a car base for people who want to visit the Children's Zoo and other adjacent exhibits or to use the railway. Near the new station a level-crossing was built to take Central Avenue across the railway. The lower end of the Avenue had to be diverted for this reason.

The programme of regionalization of the herd exhibits was also continued. To cope with the increase in the size of the White Rhino herd, and to make easier the introduction of other African species, the big Rhino paddock was extended by ten acres, and a new

paddock, initially for Zebra and Eland, was formed alongside. Work also started late in the year on a new block of animal houses to serve this paddock, in which all African species in this section of the Park will be concentrated.

Work also began on the long-planned Asian Exhibit in Spicer's Field. The framework for the main animal house had been erected by the end of the year, and fencing will be completed early in 1974. During the summer Asian animals such as Camels, Onager, Przewalski's Horse and Père David's Deer will then come together in one area.

The water supply of the Park was improved by the installation of a new ring main and new pumping equipment. The Polar Bear quarters, on which improvement work started in 1972, are now in use, and have not only greatly improved the control of the animals, particularly with regard to the requirements for breeding, but have also made this formerly rather grim structure look more pleasing and more in keeping with the landscape.

The old White Rhino enclosure was resurfaced to make it suitable for the Indian Rhinos; a shade shelter was built for the Musk Oxen; a new door and new gates and fencing were installed in the Elephant House to prepare for the arrival of the young male elephant from Regent's Park; new kiosks replaced the old wooden 'sentry-boxes' at the car entrance gate; and the usual amount of other minor works and routine maintenance was carried out.

THE COLLECTION

The birth of a litter of true second-generation captive-born Cheetahs, the births of the first home-bred White Rhinos and the despatch to China of a group of young Père David's Deer were the outstanding events of the year.

The young Cheetah female 'Jiffie', born at Whipsnade on 2nd February 1970, was mated with a male 'Raoul', born at Montpellier Zoo on 1st December 1968 and brought in from France in December 1972 in exchange for a Whipsnade-bred female. 'Jiffie' gave birth to a litter of five young (two male, three female) on 30th October and, so far as can be reasonably ascertained, these cubs are the first ever born to parents which were bred in captivity.

The enterprising decision to import a large herd of White Rhinos from the wild in Natal to Whipsnade in 1970, at a time when this species had not yet been known to breed in captivity outside South Africa, earned its reward during 1973 with the birth of two young which were conceived at Whipsnade. Born in January and March, both were males. Two other events in the White Rhino herd are of note. In July the young male born in 1971 (his mother being pregnant when she came to Whipsnade) was sent in exchange to the Alexandria Zoo. The first death in the herd, a sub-adult female, occurred in December. This particular animal had never been in good condition, and its loss is the only casualty in the group of 20 animals in more than three years and three European winters.

Following the visit of a delegation of the Academia Sinica to the London Zoo in 1972 and the general improvement in scientific contacts with China, the Society offered the Peking Zoo a gift of Père David's Deer, the rare Chinese species now extinct in the wild. The offer was accepted, and during 1973 arrangements went forward to send two pairs, born at Whipsnade in the spring, to Peking. There were the usual difficulties over trans-

port, and these were exacerbated by the war in the Middle East. Eventually the four animals, escorted by Mr O. C. Chamberlain, the Park Manager at Whipsnade, left Britain by an airfreight service on 15th December and arrived on 20th December. Mr Chamberlain brought back two pairs of rare cranes as a return gift from the Peking Zoo.

Other breeding successes at Whipsnade during 1973, some of rare species, included: a Black Rhino, the second to the present pair; three Rosy Flamingos, repeating the success of 1971; a litter of four Kodiak Bears which attracted much press and public attention in the early part of the year; and, for the first time for several years, lion cubs, born and reared in the presence of the other adult animals.

Breeding among the herd animals, which form an important part of the Collection at Whipsnade, was as satisfactory as usual. Among these were eleven Père David's Deer, seven Thomson's Gazelle, three Swamp Deer, two Reindeer, one Moose and one European Bison. A Sitatunga was also bred. The Whipsnade collection of these animals has been supplemented after the prescribed period of urban confinement by another female Sitatunga and its calf born in Regent's Park. The group has grown to a fair size and will be moved to the African Plains area during 1974.

Some moves of this kind have already been started. During the coming year Asian animals will be moved to the new Asian Exhibit in Spicer's Field, and African animals to the extended African area adjoining the White Rhino paddock. As a start Reindeer and Onagers were moved to temporary sites over the winter.

The arrival of a young male African Elephant from Cameroon has already been reported. This is the first time a male has been kept at Whipsnade for many years, and the necessary control measures had to be built into the accommodation. The animal is, however, still very much smaller than the five females, which are assorted both in species and age, and by whom he was quickly accepted.

Another important new arrival at Whipsnade was that of a female Indian Rhino 'Roopa' born in the Delhi Zoo in January 1971. She arrived in February and was soon settled in with the older female which has been at Whipsnade since 1952. In due course she will be moved in with the Whipsnade-born male. In return for this valuable animal, the Society sent three giraffes, which were obtained from an East African source, to Delhi, where they arrived in November.

VETERINARY REPORT

The continued success in reducing the number of clinical cases has again allowed the Veterinary Officer to devote more time to other aspects of his work, in particular to obtaining data on various norms of the physiology of non-domestic animals.

At the same time a continuous watch has been maintained on the worm burdens of all the animals at Whipsnade and the search for the best immobilizing drug has been successfully expanded.

Details of the work of the Veterinary Officer at Whipsnade are also given in the Society's biennial Scientific Report.

Animals of all kinds (except fish and invertebrates) at Whipsnade Park

	<i>In the Collection on 1 January 1973</i>	<i>Received in 1973 by presentation, exchange, deposit, purchase and transfer from Regent's Park</i>	<i>Born and hatched in the Park in 1973</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Regent's Park</i>	<i>In the Collection on 31 December 1973</i>
Mammals	923	15	325	364	899
Birds	1,124	61	120	204	1,101
Reptiles	12	—	—	—	12
	2,059	76	445	568	2,012

SCIENTIFIC ACTIVITIES

SCIENTIFIC MEETINGS

Eight meetings were held during the year and many of the papers given were published in the *Journal of Zoology*. Among the contributions not intended for publication were 'Rhythmic activities in insects', a lecture by Dr P. L. Miller, the Society's Scientific Medallist for 1971; Professor G. E. H. Foxon introduced his film 'The breathing mechanism of *Lepidosiren paradoxa*, the South American lungfish' and Professor A. d'A. Bellairs spoke about his recent visit to the Galapagos Islands and introduced the film 'Galapagos - Darwin's world within itself'.

SYMPOSIA

Two Symposia were held:

7th/8th June. 'The biology of hystricomorph rodents' organized by Dr I. W. Rowlands and Dr Barbara J. Weir.

22nd/23rd November. 'Advances in avian physiology' organized by Dr Malcolm Peaker.

PUBLICATIONS

Journal of Zoology

Transactions of the Zoological Society of London

Symposia of the Zoological Society of London

Zoological Record

Nomenclator Zoologicus

Editor: H. Gwynne Vevers

Assistant Editor: Marcia A. Edwards

Editorial Assistant: L. G. Ellis

Administrative Assistant: Unity M. M. McDonnell

Journal of Zoology Volumes 169, 170 and 171 were published and together contain 108 papers. The Council is greatly indebted to all those who referee the many papers submitted and thus ensure the maintenance of the high standard of this journal.

Symposia One volume was published: No. 33 'The concepts of human evolution' edited by Professor Lord Zuckerman.

Zoological Record

Managing Recorder: M. N. Dadd

Systems Analyst: G. Bennell

Senior Recorders: Anne Clutterbuck, Mrs Judith Howcroft

Volumes 105 (literature for 1968) and 106 (literature for 1969) have been completed.

Volume 107 (literature for 1970): Six Sections have been published, 14 are in press and two are in preparation.

Volume 108 (literature for 1971): Indexing is proceeding on all but two Sections and the vertebrate Sections are in advance of the remainder.

Investigations into production methods have now been completed and it has been decided to adopt a computer-assisted system from Volume 109 (literature for 1972) onwards. This system is based on that developed for the *Dean Bibliography of Fishes* at the American Museum of Natural History in New York. We are grateful to Dr J. W. Atz, the Dean Bibliographer, and to Dr D. E. Rosen, Chairman of the Department of Ichthyology at the Museum, for so generously making this system available to us. It had been hoped to publish the *Dean Bibliography of Fishes* as a replacement for the *Pisces* Section of *Zoological Record*. For various reasons, this will, unfortunately, be possible only for Volume 108 (the 1971 literature). To take account of, and to prepare for the new system, some minor changes have been made in the layout from Volume 108, and a controlled vocabulary has been adopted. Great care has been taken to ensure that the indexes will be easier to use than the old style, while retaining the same depth of information.

During the year extra accommodation became available to us at the British Library (Lending Division) in Yorkshire where two-thirds of the recording staff are now based; the others are still at the British Museum (Natural History) in South Kensington. The Council is grateful to the Directors and staff of both these institutions for the accommodation and assistance which they provide. We are also indebted to those who continue to help with the compilation of the *Zoological Record*, and to the individuals and institutions whose donations to the Zoological Record Fund are listed in Appendix 6.

International Zoo Yearbook

Editor: Mrs Nicole Duplaix-Hall

Advisory Editor: H. Gwynne Vevers

Volume 14 (1974) of the *International Zoo Yearbook* is divided, as before, into three sections, Section 1 being devoted to the special topic of Animal Trade and Transport. This subject was chosen because of the link between the increase in the number of zoos and exotic pet owners and the boom in the wild animal trade. The effects of this trade on wild animal populations and the practical problems involved in transport

are reviewed. The 21 articles cover a wide range of topics including the bird trade in Indonesia; the number of animals exported each year from Thailand; the transport of dolphins and manatees and the nutrition of ungulates in quarantine.

Section 2, covering new developments in the zoo world, contains 74 papers and reports on various aspects of zoo management, such as Architecture and Display Techniques, Breeding, Husbandry, Hand-rearing, Conservation and Education. The final reference section comprises a full list of zoos and aquaria of the world; numbers and species of vertebrates bred in zoos and aquaria in 1972 and whether these births were of parents both born in captivity; a census of the rare animals in captivity in 1973; and a list of studbooks for specimens of rare or endangered species in captivity.

LIBRARY

The Library has continued to provide reference and borrowing facilities for members of the Society and its staff, and an information service to the Society and the public.

In view of the rapidly increasing price of books and journals the Society is particularly grateful to the donors of books listed in Appendix 7. This source of material is a great help to the Library in maintaining its services. The Society is also grateful to those Societies, Universities and other organizations which send their reports and other publications to the Library.

RESEARCH

The Society's research institutes were visited by the delegation of the Parliamentary and Scientific Committee on 28th November and the research programmes were demonstrated in detail.

As mentioned earlier a comprehensive report of the research carried out by the Society for the period 1971-73 is being published in Volume 173 of the *Journal of Zoology*. Only a brief review is given here, and the publications by the members of the Society's staff and by research workers are listed in Appendix 3.

Dr H. G. Vevers has continued his work, in collaboration with Dr G. Y. Kennedy of the University of Sheffield, on animal pigments. They are now making a survey of the pigments of birds' eggshells and have so far examined material from over 100 species, mostly from the Society's Collections. They have also started to investigate the pigments of parrot feathers.

The foods and feeding habits of *Capella gallinago* and other Charadriiformes continue to be investigated by Mr P. J. S. Olney. Based primarily on visceral analyses and on observations, the information is being used in the management of reserve areas. Mr Olney continues to act as an Honorary Editor for the multi-volume *Birds of the Western Palearctic*, being responsible for the food and feeding habits sections.

Professor A. J. E. Cave has studied the anatomy of the Giant Panda, the Rhinocerotidae and Cetacea.

The King's College Research Unit, under the direction of Sir Francis Knowles, has continued its studies of the ultrastructure of the pituitary and hypothalamus.

THE NUFFIELD INSTITUTE OF COMPARATIVE MEDICINE

Staff

Director: L. G. Goodwin. *Biochemistry*: M. A. Crawford. *Infectious Diseases*: G. R. Smith. *Pathology*: R. N. T-W-Fiennes. *Haematology*: Christine M. Hawkey. *Research Assistant Infectious Diseases*: D. E. Bidwell. *Laboratory Superintendent*: P. R. E. Wallace. *Administrative Assistant*: Patricia E. Wright.

Visiting Graduates: P. K. C. Austwick; G. H. du Boulay; D. A. Dyson; Barbara Hall; A. W. M. Hay; A. T. Nurden; J. P. W. Rivers; A. J. Sinclair; A. Voller. *Research Student*: A. Hassam.

Wellcome Trust Research Laboratories, Nairobi: *Acting Director*: R. C. Siddons. *Research Graduates*: Janet Newson; Parvinda Lall. *Services Officer*: R. A. Whittingham.

Mrs Barbara Hall B.Sc. (Warsaw), who had been working at the University of Stockholm, was appointed in January to study milk lipids in relation to brain development, and Mr Hassam was awarded a studentship to study the incorporation of γ -linolenic acid into brain phosphoglycerides. Mr Nurden spent three months at the Hôpital Saint-Louis in Paris at the invitation of Professor J. Caen to investigate the nature of bound surface carbohydrate components of platelets from patients with thrombasthenia. Professor I. M. Rollo (University of Manitoba) spent a sabbatical year extending his studies on anionic transport in the central nervous system. Mr Austwick visited areas in Roumania affected by endemic nephropathy to carry out a field investigation on the mycoflora of foodstuffs. Dr Voller spent three months in Stockholm to conduct an experiment on the effect of concurrent viral and malarial infections in monkeys; it has been suggested that this association may be responsible for the development of Burkitt's lymphoma in man. He also spent one month in Tanzania to conduct field experiments on children suffering from malaria. Dr Crawford spent two weeks visiting Eastern Australia in connection with farm animal production and human nutritional research. Miss Bartlett, a technician working in parasitology, was awarded a PhD degree from Brunel University, and Mr Hay was awarded a PhD degree from London University.

Visiting scientists who have worked for varying periods in the Institute include: Mr B. J. Britton, Dr G. Wood and Miss M. Peele (Surgical Unit, St Bartholomew's Hospital) to study the effect of adrenaline infusion on blood coagulation and fibrinolytic mechanisms of animals; Dr L. Kailli (Athens), Dr D. S. Rowe (Lausanne) and Dr V. Houba (Nairobi) to study various aspects of malaria immunology. Mr S. Venkatesan (London School of Hygiene and Tropical Medicine) examined fatty acid metabolism during experimental trypanosomiasis; Dr C. Galli (University of Milan) and Professor G. Porcellati (University of Perugia) collaborated with work on structural lipids; Dr S. Alford studied the anti-oxidant properties of flavonoids; Mr F. Behan (Royal College of Surgeons) conducted surgical and radiographic studies on patterns of circulation in human tissue as used in reconstructive surgery.

Research Projects In the Pathology Department, Dr Hawkey has continued her collection of haematological data on captive wild animals, and the results of eight years' work have now been prepared as a monograph for publication. Collaborative work with the Royal Free Hospital on immunosuppressive treatment has led to successful treatment of three haemophiliac patients. Work on the relationship between blood catecholamine levels and changes in coagulation and fibrinolysis has continued. Mr Nurden has continued his studies on the mechanism of platelet aggregation and is investigating the glycoproteins that extend from the plasma membrane and contain elements that contribute to the surface charge. Dr Hay has studied skeletal disease of primates with particular reference to vitamin D metabolism; this work has been extended to include a survey of vitamin D binding proteins in the blood of about 100 species of vertebrates. Mr Fiennes, in collaboration with the Biochemistry Department, has established that deprivation of linolenic acid in the food of Capuchin Monkeys leads to signs of deficiency, particularly in the skin and the liver. Mr Austwick has continued his studies on the pathogenesis of aspergillosis, and has extended his work on endemic nephropathy; a number of different fungi have been isolated from various regions of Eastern Europe and are being examined for toxin production. Work has continued in collaboration with the Pathologist on fungus disease in amphibia, but attempts to identify the causal fungus have, so far, failed. Dr Goodwin has completed a project on the pathological effects of trypanosome infections on connective tissue, and a new project has begun on the effects of chemotherapy on tissue repair.

In the Infectious Diseases Department, the project on contagious bovine pleuropneumonia carried out by Mr Dyson and Dr Smith is nearing completion; the mouse test has shown itself to be a useful means of estimating the virulence of strains and the effectiveness of vaccination. Dr Smith has extended his work on aspergillosis and most of the results have now been published. Dr Bidwell has completed his project on the growth of arboviruses in invertebrate tissue and has started new projects in collaboration with Dr Voller on malaria immunology and with the Pathologist on viruses in healthy and diseased Red and Grey Squirrels. Dr Voller has been developing new methods for malaria serology for use in the field, and in collaboration with Professor M. S. R. Hutt (St Thomas's Hospital) is studying renal immunopathology associated with malarial infections. Work is also in progress on immunodepression in malaria and toxoplasmosis. Dr Bartlett has started a three-year study on the immuno-biochemical relationships of various nematodes of clinical significance.

In the Biochemistry Department, Dr Crawford and Dr Sinclair have studied low-fat diets and have shown that maternal dietary patterns can affect brain chemistry, myelination and development. Work on the metabolism of polyunsaturated fatty acids in developing brain has shown that the long-chain metabolites found in rat milk are more effective precursors of the brain structural lipids than are the parent linolenic and linoleic acids. Mr Rivers has devised a semi-synthetic diet that is acceptable to cats, and is examining the effect of linolenic acid deprivation. Mr Hassam has been engaged on studies on the metabolism of linoleic acid.

In the Radiology Department, Dr du Boulay has continued his work with Mr L. Symon and Mr B. Kendall of the National Hospital, Queen Square, on the reactivity of cerebral arteries in spasm, and has examined the effect of phentolamine upon spastic

arteries after subarachnoid haemorrhage. Studies have also continued on the rete caroticum of the goat and have shown that these vessels react briskly to changes in blood pressure, getting wider as the blood pressure falls; the rete probably plays a part in the autoregulatory function of the cerebral vessels. Specimen X-rays have been added to the Wellcome Animal X-ray Museum throughout the year, and a special effort has been made to increase the material on fishes; by arrangement with the British Museum (Natural History) preserved specimens, including a coelacanth, have been X-rayed. Dr du Boulay in collaboration with Miss Ann Blofield (Goldsmiths' College), has devised a completely new type of teaching collection of transparencies, with explanatory notes for use in schools and colleges; these are being published by Macmillan Education.

The Wellcome Trust Research Laboratories in Nairobi ceased to be affiliated to the Institute at the end of the year. The research work has been directed towards obtaining the maximum amount of data from the programme on deficiencies of vitamin B₁₂ and folic acid in baboons. Some of the research staff have left and taken posts elsewhere; these include the Director, Dr J. D. Gatenby Davies, Sister Fredericka Jacob and Mrs Patricia Uphill. Dr R. C. Siddons has been appointed as Acting Director for the remaining period and will be responsible for winding up the programme and producing the final report.

WELLCOME INSTITUTE OF COMPARATIVE PHYSIOLOGY

Staff

Senior Research Fellow: I. W. Rowlands. *Research Fellows*: Barbara J. Weir; P. F. Watson; B. Seaton; Frances D'Souza. *Visiting Research Fellow*: D. R. Patil. *Visiting Research Students*: A. Hall-Martin, D. Els. *Senior Technician*: G. F. Nevill.

There have been several staff changes during the year. Dr Paul Watson took over the work of Dr Russell Jones on 1st April and Dr Brian Seaton commenced on 1st August in place of Mr A. R. Thawley. Dr Barbara Weir's Fellowship ended on 30th September and in October Mrs Frances D'Souza began work on reproduction of Tree Shrews (*Tupaia spp.*).

The WHO Training Fellowship held by Dr Patil (Nagpur, India) was renewed for a second year. Mr A. Hall-Martin came from the Mammal Research Institute, Pretoria, for three months (August to October) to learn techniques needed for his study of the reproduction of the Giraffe. Mr D. Els of the Department of Zoology, Pretoria began a seven month visit on 1st December.

Dr Rowlands and Dr Weir organized the scientific programme and edited the Proceedings of the Society's Symposium on 'The biology of hystricomorph rodents' held in June.

Research Projects Breeding has been maintained in the Viscacha (*Lagostomus*), Chinchilla (*Chinchilla*), Cuis (*Galea*) and Casiragua (*Proechimys*) to provide material for various investigations. Dr Rowlands and Dr Weir have continued their studies on the effect of pituitary hormones on the reproductive organs and on the ability of added progesterone to increase the survival rate of embryos in the Viscacha. Dr Weir has studied the role of the ovaries in the maintenance of pregnancy in the above species, and on the function of the uterus on ovarian activity and the effect of the chin gland in

the reproduction of the Cuis. Some Casiragua mate shortly before parturition, and Dr Seaton is now investigating the secretion of sex hormones during late pregnancy in this species. The Tuco-tuco (*Ctenomys*) colony has now been disbanded because of the infertility associated with diabetes and the failure of affected animals to respond to commercially available insulin (ox). Observations on the structure of the insulin molecule in other hystricomorph rodents is in progress in collaboration with Mr R. Neville, Wellcome Foundation.

Dr Weir and Dr W. George (Lady Margaret Hall, Oxford) have examined the chromosomes of hystricomorphs. Studies on progesterone secretion in the Viscacha and Casiragua with Dr R. B. Heap, ARC Institute of Animal Physiology, Babraham, have continued.

Dr Watson has found that the motility of elephant spermatozoa after nine months of storage over liquid nitrogen is not significantly reduced. Methods to detect oestrus in the elephant have been examined to indicate the optimal time of insemination. Dr Watson is also investigating the use of similar methods of breeding in other species in captivity. His studies on the preservation of spermatozoa and the mode of action of various protective substances (lipo-protein) on sperm motility are continuing.

The breeding colony of Stoats has been maintained for Mr Gulamhusein to confirm that a declining photoperiod (daylength) is responsible for the occurrence of delayed implantation for this mustelid, and to study hybridization with the Ferret. Dr Patil has studied the cellular constituents of the pituitary gland of tropical bats (*Hipposideros*) and is now commencing a similar study on this gland in the Viscacha.

Mr Holt has assisted in programmes involving cytochemistry and has added 49 specimens to the Reference Collection of Reproductive Organs.

EDUCATIONAL ACTIVITIES

EDUCATIONAL PROGRAMME FOR SCHOOLS

(London and Whipsnade Park)

The numbers of pupils taking part were:

Regent's Park	Spring Term (Secondary Schools)	20,131
	Summer Term (Primary Schools)	17,278
	Autumn Term (Secondary Schools)	15,964
Whipsnade Park	Summer Term (Secondary Schools)	3,840
		57,213

The programmes offered followed the pattern established in previous years and, although most of the schools taking part came from London and the Home Counties,

some schools attended from as far afield as the South Coast, Nottingham and Birmingham.

Work began upon the construction of the new Education Centre in the north-west corner of the Gardens and, as already reported, the Inner London Education Authority had made a grant to the Society to establish the Teachers' Centre, for the in-service training of teachers. This inter-linked complex of facilities for school pupils and teachers will encourage the greatest possible educational exploitation of the Society's Collection at Regent's Park.

OTHER COURSES

As in previous years, students from colleges of education attended frequently in order to observe the teaching methods used by the Society's staff. Special lectures and demonstrations were organized for students from universities, colleges of education and technical colleges. During the Easter vacation a two-day course for university students of zoology was organized, and the Council is grateful to Dr P. H. Greenwood, Professor J. R. Napier, Dr Garth Underwood and Dr Barbara Weir who conducted this course.

A Sixth Form Symposium on 'The natural history of pollution', organized in January by Professor K. Mellanby, proved almost embarrassingly successful, there being over seven applicants for each place that was available. A conference on 'Education in zoos', organized jointly with the Department of Education and Science, was held in March and was well attended by educationalists and representatives of zoos from all parts of Great Britain.

CHRISTMAS LECTURES

Three meetings were held immediately after Christmas for the children and young friends of Members of the Society. Dr John Sparks, of the BBC's Natural History Unit, spoke on 'Filming animals for television' and Professor J. L. Cloudsley-Thompson gave an illustrated talk on 'African animals'. The film 'King elephant' was also shown. All three meetings were well attended.

YOUNG ZOOLOGISTS' CLUB

Meetings of the Young Zoologists' Club, which usually take place during the school holidays, continue to attract an enthusiastic attendance. During the year visits were made to Marwell Zoological Park, Olney Bird Gardens, the Nature Trail at Tring Reservoirs, Twycross Zoo, and Birdland at Bourton-on-the-Water, as well as to Whipsnade Park. Indoor meetings included film shows and a talk by Mr Andrew Watson on 'Bat detectors and bat detectives'.

The Zoo Magazine, of which three editions appeared during the year, continues to satisfy some of the curiosity of our young members about animals. However, there always remains a large number of questions, often exceedingly difficult and sometimes impossible to answer, which have to be dealt with by post.

GENERAL MATTERS

PUBLICITY

For the third year television was used as the main advertising medium. This was backed up by special advertising to overseas visitors, through travel organizations and hotels.

A visitor survey was carried out at Whipsnade during the year to seek information about the effect of television advertising, individual reactions to Whipsnade and its exhibits, and various other aspects.

There was again a most satisfactory press interest in all the Society's affairs, and particularly in the Collection. Special coverage was given to the Polar Bear cub 'Paddiwack', to the presence of Zoo Llama carts at the Lord Mayor's Show and, at Whipsnade, to the birth of the first White Rhino.

The Anglia TV Outside Broadcast Unit spent two days in May making a programme devoted to Whipsnade and its achievements.

The supply of photographs and transparencies to publishers and others increases each year, and the photographic library is being reorganized to ensure the maintenance and improvement of this unique collection.

STAFF

At the end of the year the Society's permanent staff totalled 568. A list of senior members is given in Appendix 2.

Wage increases within the limits of the Government's pay policy were granted to all sections of staff during the year. The general inflationary situation and the marked scarcity of labour generally in the South East of England, particularly in London, was reflected in some difficulties in recruitment. On the whole, however, staff turnover remains comparatively low. The Society is fortunate in having a large proportion of loyal, long serving staff, as was evidenced in March when, at a special ceremony, long service awards were presented to 54 staff with 25 or more years continuous service.

Awards and Achievements

Dr I. F. Keymer, the Society's Pathologist, was awarded the Diploma of the Fellowship of the Royal College of Veterinary Surgeons for 'meritorious contributions to learning in the field of veterinary pathology'.

Miss M. Edwards, Assistant Editor, Scientific Publications, was awarded a PhD degree from London University.

Mr T. Sangster, Overseer of Mammals, was awarded the Society's Bronze Medal for long and outstanding service.

Training

Of the 18 members of the staff, at London and Whipsnade, who completed the course for the Ordinary Certificate in Zoo Animal Management, organized in conjunction with Paddington Technical College, 17 were successful in the final examination; Messrs B. Blackburn, M. Gibbons, P. Hill and N. Virtue achieving distinction. All the eight members of staff who completed the Higher Certificate Course were successful in the final examination, Messrs M. Moore, L. Smith and P. Williams achieving distinction. Further courses for the Ordinary and Higher Certificates started in October.

Throughout the year the Society has afforded facilities for in-service training and experience for keeper staff from foreign zoos, including four from Nigeria, two from Copenhagen, one from Helsinki and one from Kuwait. Two students from Atlantic College in Wales spent a short period working in London Zoo as part of a special project.

Appointments and Promotions

REGENT'S PARK

Mr G. Bennell, *Systems Analyst, Zoological Record*

Miss A. Clutterbuck, *Senior Recorder, Zoological Record*

Mr G. Hughes, *Headkeeper, Children's Zoo*

WHIPSNADE PARK

Mr J. Datlen, *Overseer*

Mrs B. Heley, *Assistant Catering Manager*

Mr D. Platt, *Catering Manager*

Mr G. Stanbridge, *Senior Overseer*

Mr A. White, *Headkeeper, Bird Section*

Retirements and Resignations

Retirements on pension during the year included Mr F. Gladman, Senior Overseer Whipsnade, after 41 years' service; Mr F. Clark, Chef Patissier, Restaurant Kitchen, Regent's Park, and Mr W. Blake, Works Craftsman, Whipsnade, after 38 years' service; Mr J. Little, Foreman Gardener, Whipsnade, after 37 years' service; Messrs G. Goodenough and A. Scotchmer, Works Craftsmen, Regent's Park and Mr H. Dean, Headkeeper, Children's Zoo, Regent's Park, after 28, 27 and 26 years' service respectively.

Amongst those who resigned were Mr P. Bircher, Hospital Technician, to become Curator of Marwell Zoological Park, near Winchester, and Mr J. Stidworthy, Assistant Education Officer, who took up a lecturing appointment with the British Museum (Natural History).

Obituary

It is with great regret that we record the death of Mr George ('Nobby') Ashby, Assistant to the Curator of Aquarium, in his forty-second year of service. Mr Ashby occupied a unique place in the Society, where his many interests included long service on staff representative bodies. He was widely respected within and beyond the Society for his knowledge of entomology.

ACKNOWLEDGMENTS

The Council records its sincere gratitude to the members who serve on the various committees; their expert advice and assistance is invaluable in carrying through the work of the Society.

We are indebted to the many Fellows and others who have sent specimens for the Collection and who help us in so many ways, and to Senhor João de Freitas Martins of Madeira for marine invertebrates, fishes and reptiles.

The Council also gratefully acknowledges the assistance of the many scientists, veterinarians, departments, organizations and firms for their ready cooperation. We constantly receive help from the British Museum (Natural History), and are most grateful to all the staff, including Dr G. Corbet, Miss A. Grandison and Mr J. E. Hill for their help in the identification of animals. We are also grateful to Miss Sue Mathews and Dr C. J. O. Harrison for their help and advice; Mr N. Whittaker of the RSPCA, London Airport, for care of animals in transit and for the presentation of animals; the organizations, in particular, the Ford Foundation, the Medical Research Council, the World Health Organization and others, who have supported research projects and the work of the Research Institutes; the Paddington Technical College, in particular Mr S. F. Everiss and his colleagues of the Biological Sciences Department, for their cooperation in organizing the keepers' training courses; the St John Ambulance Brigade for their constant help at the First Aid Centre, London Zoo; the Cee Vee Engineering Company for their generous cooperation in manufacturing and presenting snake-handling tools, and Messrs Piggott Bros. & Co. for producing muzzles and restraining stretchers for crocodiles.

We wish also to record our thanks for the help given to:

The Veterinary Officer by Baywood Chemicals Ltd, Beecham Laboratories, Dr R. B. Heath, Mr D. Knight, Kodak Ltd, Miss G. Lewis, Parke-Davis Ltd, Dr H. Platt, Dr J. M. Payne, Mr J. E. N. Sloan, Dr A. D. Walker.

The Pathologist by Dr W. H. Allan, Dr E. S. Anderson, Dr E. C. Appleby, Dr Peter Cavanagh, Dr H. P. Chu, Dr T. Clay, Professor E. Cotchin, Dr E. Elkan, Professor P. C. C. Garnham, Dr E. J. G. Glencross, Dr L. F. Khalil, Dr S. P. Lapage, Dr B. R. Laurence, Miss G. Lewis, Mr D. J. Mackinnon, Dr J. Marks, Dr M. J. Mitchinson, Dr B. Rowe, Professor G. B. D. Scott, Mr H. Skinner, Mr E. W. Trow, Dr L. H. Turner and Dr Sheila Wilmott.

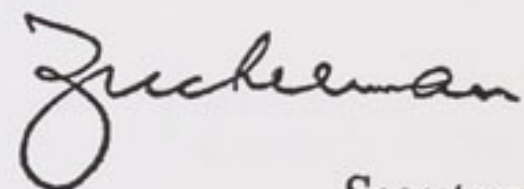
The Nuffield Institute of Comparative Medicine by Miss A. Blofield, Miss M. Chalmers, Dr K. M. Dormandy, Dr S. Edelstein, Mr P. W. Gould, Professor F. D. Gunstone, Mr A. Howard, Dr N. Josso, Dr D. E. M. Lawson, Mr A. M. Nichols, Mr L. P. Smith and Dr P. C. Traxler.

The Wellcome Institute of Comparative Physiology by Mr M. McVoy, and Mr H. V. Thompson.

Supplies, Shipping and Transport Sections by the Department of Trade and Industry and HM Customs and Excise, Carworth Europe, the many people who have offered Evergreen Oak for feeding animals, Aer Lingus Airlines, Air Canada, Air France, Air India, British Caledonian Airways, British Airways, British Rail, Cambrian Airways, R. L. Dobbs Transport, East African Airways, KLM Royal Dutch Airlines, Lufthansa German Airlines, Nigeria Airways, J. F. Obree & Son Ltd, Overseas Containers Ltd, Pan American World Airlines, Rennie Hogg Ltd, Richards and Wallington Ltd, Sabena (Belgian) Airlines, South African Airways, Swiss Airlines and Union-Castle Mail Steamship Company.

Whipsnade Park by Dr R. K. Archer, Mr L. B. Jeffcott, Dr H. Platt and Miss K. Whitwell of the Equine Research Station, Bayer Ltd, the members of the British Red Cross who man the first aid post, Dr J. Brown, Capital Controls, ICI Chemical Division, Janssen Pharmaceutica, Miss G. Lewis, Pye Unicam Ltd, Reckitt & Colman, Rennie Hogg Ltd, Dr I. Sharman, Mr J. E. N. Sloan, Mr L. R. Thomsett, Tintometer Sales Ltd, Transmeridian Air Cargo Ltd, Mr R. R. Watret.

Finally, the Council wishes to thank the press representatives and photographers for their cooperation and interest in the Collection.



Secretary

COMMITTEES 1973-1974

Gardens and Park Committee

Terms of reference: To consider matters relating to the layout, appearance, animal housing, and amenities other than catering, of the Society's Gardens, Regent's Park, and Whipsnade Park; to consult where necessary with other committees and to report to Council so that the advice of the Committee can be taken into account in planning future maintenance and development.

Members of Committee:

Sir Gawaine Baillie, Bt
The Lord Donaldson, OBE, *Chairman*
R. Romilly Fedden, CBE
Sir Dudley Forwood, Bt
Christopher Marler
The Hon. Ivor Montagu
Air Vice-Marshal G. Silyn Roberts,
CB, CBE, AFC, MSc

Geoffrey Schomberg, FLS
Nigel Sitwell
Lady Daphne Straight
Lady Anne Tree
The Marquess of Willington
Secretary: C. G. C. Rawlins, OBE, DFC

Animal Welfare and Husbandry Committee

Terms of reference: To advise Council on matters relating to animal welfare, husbandry and breeding records in the Collections at both Regent's Park and Whipsnade Park, particularly in relation to the work of the Society's Curators, Veterinary Officers and Pathologist.

Members of Committee:

E. C. Appleby, PhD, MRCVS
Professor G. H. Arthur, DVSc, FRCVS
D. F. Attenborough, MA
A. G. Beynon, CB, DVSM, MRCVS
Miss Marie E. Coates, PhD
Francis C. Fraser, CBE, DSc, FRS
W. Lane-Petter, MA, MB, BChir, FIBiol, *Chairman*

Professor A. T. Phillipson, MA, PhD, DVSc, MRCVS,
FRSE
N. W. Pirie, MA, FRS
A. D. Walker, PhD
W. L. Whitehouse, RD, MB, FRCS, FRCOG
A. N. Worden, PhD, DVetMed, DrMedVet, FRCPath,
FRCVS, FRIC, FIBiol
Secretary: M. R. Brambell, VetMB, PhD, MRCVS

Committee of the Wellcome Institute of Comparative Physiology

Terms of reference: To advise on all matters relating to the research undertaken at the Wellcome Institute of Comparative Physiology; to receive and approve the Senior Research Fellow's Annual Report and to advise on the appointment of research staff.

Members of Committee:

Professor F. Beck, MB, ChB, MD
Professor J. M. Dodd, DSc, PhD, FIBiol, FRSE
Professor R. J. Harrison, MA, MD, DSc,
MB, BChir, FRS
Professor H. R. Hewer, CBE, MSc, ARCS
Professor P. A. Jewell, MA, PhD

Professor D. Lacy, MA, PhD
J. S. Perry, DSc, FIBiol
H. V. Thompson, BSc, FIBiol, *Chairman*
A. N. Worden, PhD, DVetMed, DrMedVet, FRCPath,
FRCVS, FRIC, FIBiol
Secretary: I. W. Rowlands, PhD

Committee of the Nuffield Institute of Comparative Medicine

Terms of reference: To advise on all matters relating to research in comparative medicine; to receive and approve the Director's Annual Report to Council and the Statement of Accounts; and to advise on the appointment of research staff.

Members of Committee :

Professor H. Baum, PhD
Professor G. V. R. Born, MB, ChB, DPhil, FRS
Professor M. S. R. Hutt, MD, FRCP
Professor G. S. Nelson, MD, DSc, MRCP
Professor A. T. Phillipson, MA, PhD, DVSc, MRCVS,
FRSE
Professor Walter Plowright, CMG, MRCVS, DVSc
J. E. N. Sloan, BSc

C. E. Gordon Smith, CB, MD, FRCP FRCPath
Nigel Snodgrass, BSc, MRCVS
Dame Janet Vaughan, DBE, DM, FRCP
W. L. Whitehouse, RD, MB, FRCS, FRCOG
P. O. Williams, MA, MB, FRCP
C. A. Wright, DSc, PhD, FIBiol, *Chairman*
Secretary : L. G. Goodwin, MB, BS, FRCP,
BPharm, FIBiol

Education Committee

Terms of reference : To advise Council on all matters relating to the Society's educational activities.

Members of Committee :

John A. Barker, BSc, FIBiol
Professor A. d'A. Bellairs, DSc, MRCS, FLS
Professor W. S. Bullough, DSc, *Chairman*
S. F. Everiss, MBE, MA, MSc
Miss Barbara M. Gilchrist, PhD

A. G. Leutscher, BSc
Professor John Napier, DSc, MRCS, LRCP
Geoffrey Schomberg, FLS
D. J. Stanbury, BSc, ARCS
C. H. Selby, HMI
Secretary : M. K. Boorer, BSc, DipEd

Publications Committee

Terms of reference : To advise Council on all matters concerning the publication of zoological research; to serve as an editorial board for the *Journal of Zoology* and the *Transactions* of the Society; and to make recommendations on Library policy.

Members of Committee :

Professor E. J. W. Barrington, MA, DSc, FRS,
Chairman
Professor A. J. E. Cave, MD, DSc, FRCS, FLS
Professor J. L. Cloudsley-Thompson, MA,
PhD, DSc
Francis C. Fraser, CBE, DSc, FRS
J. P. Harding, PhD, FLS
Professor P. A. Jewell, MA, PhD

Professor N. B. Marshall, MA, ScD, FRS
Professor J. D. Pye, PhD
H. N. Southern, MA, DSc
Professor J. E. Webb, DSc, PhD
Professor G. P. Wells, ScD, FRS
Secretary : H. Gwynne Vevers, MBE, DPhil,
FLS, FIBiol

Zoological Record Committee

Terms of reference : To advise on the scope and production of the *Zoological Record* and on methods of ensuring its widest distribution.

Members of Committee :

J. Clevedon Brown, PhD, FLS
Francis C. Fraser, CBE, DSc, FRS, *Chairman*
P. Freeman, DSc, ARCS, FIBiol
Professor J. Green, PhD
J. P. Harding, PhD, FLS
A. K. Kent, PhD

R. A. Neal, DSc, PhD
Donn E. Rosen, PhD
J. G. Sheals, PhD, FIBiol
Errol White, CBE, DSc, FRS
Secretary : H. Gwynne Vevers, MBE, DPhil,
FLS, FIBiol

International Zoo Yearbook Editorial Board

Terms of reference : To advise on the content, form and production of the *Yearbook*.

Members of Committee :

Miss Molly Badham
Professor F. Bourlière, MD, LSc
The Earl of Cranbrook, CBE, MA, FLS, *Chairman*
Geoffrey R. Greed
Professor P. A. Jewell, MA, PhD
Miss Janet Kear, PhD

Lord Medway, MA, PhD
Professor A. T. Phillipson, MA, PhD, DVSc, MRCVS,
FRSE
Walter Van den bergh
Secretary : Mrs Nicole Duplaix-Hall, FLS

STAFF

HEADQUARTERS

Director of Administration: Miss E. M. Owen, CBE
Director of Zoos: C. G. C. Rawlins, OBE, DFC
Architect: J. W. Toovey, AADipl(Hons), FRIBA
Chief Accountant: W. N. Pickford, MM, ACIS
Education Officer: M. K. Boorer, BSc, DipEd
Establishment Officer: M. E. McInerney
Catering Manager: G. A. J. Perkins, MHCI
Retail Manager: J. F. Brown
Public Relations Officer: J. A. Dale, MIPR

SCIENTIFIC

Director of Science: L. G. Goodwin, MB, BS, FRCP, BPharm, FIBiol
Assistant Director of Science: H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol
 (See also Publications Department and London Zoo)
Nuffield Institute of Comparative Medicine:
 See pages 22/23
Wellcome Institute of Comparative Physiology:
 See page 25
Pathologist: I. F. Keymer, PhD, FRCVS, FIBiol
Veterinary Officer: J. M. Hime, MRCVS, DVR
Senior Hospital Technician: A. K. Fitzgerald
Librarian: R. A. Fish, FLA
Publications Department: See pages 20/21

LONDON ZOO

Curator of Aquarium and Invertebrates, Acting Curator of Reptiles: H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol
Curator of Birds: P. J. S. Olney, BSc, DipEd, FLS
Curator of Mammals: M. R. Brambell, VetMB, PhD, MRCVS,
Gardens Executive: J. Ward
Head Gardener: W. G. Gardner
Maintenance Manager: L. G. Taverner
Overseer of Birds: D. H. Newson
Overseers of Mammals: T. Sangster, J. Lambden
Overseer of Reptiles: D. Ball, AIAT
Purchasing and Transport Manager: H. J. Mason, MInstPS, MASMIC

Head Keepers

Aquarium: R. Dumbelton
Aquatic Birds and Birds of Prey: A. E. Scrivener, AIAT
Bears: S. Morton

Head Keepers continued

Bird House: W. G. R. Daines
Children's Zoo: G. E. Hughes
Elephant Pavilion and Aquatics: W. G. Crompton
Insects: R. P. Humphrys, AIAT
Lion House: G. A. S. Figgett
Monkeys: G. Callard
Parrot House and Eastern Aviary: R. J. Watkins
Pheasantry and Ostrich House: R. Barrow
Reptiles: S. B. Savage
Small Mammals: D. Clarke
Ungulates: T. B. Kichenside

WHIPSNADE PARK

Curator: V. J. A. Manton, MRCVS
Park Manager: O. C. Chamberlain
Veterinary Officer: D. M. Jones, BSc, BVetMed, MRCVS
Catering Manager: D. A. Platt
Office Manager: M. L. Taverner
Head Gardener: J. Folds
Senior Overseer: G. Stanbridge
Overseer: J. Datlen

Head Keepers

Central Ungulate Section: H. Stevens
Southern Ungulate Section: A. W. Billington
Northern Ungulate Section: A. G. Thorne
Carnivore Section: F. Hughes
Elephant Section: J. Weatherhead
Bird Section: A. White
Children's Zoo: P. C. Milne

CONSULTING STAFF

Consulting Architect: Sir Hugh Casson, MA, RDI, FRIBA, FSIA
Consulting Landscape Architect: Peter F. Shephard, CBE, BArch, PPRIBA, AMTPI, FILA
Honorary Herpetologist: Professor A. d'A. Bellairs, DSc, MRCS
Honorary Veterinary Consultant: A. G. Beynon, DVSM, MRCVS
Adviser on Labour Relations: E. Bishop, OBE
Medical Referee: J. P. Horder, OBE, MA, MB, BCh, FRCP, FRCGP
Honorary Consultant Photographer: W. G. Vanderson
Consultant Typographers: Colin Banks, FSIA, John Miles, FSIA, FSTD

PUBLICATIONS BY SOCIETY'S STAFF AND RESEARCH WORKERS

(including those published in collaboration)

- AINSWORTH, G. C. & AUSTWICK, P. K. C. (1973). *Fungal diseases of animals*. 2nd edit. revised by G. C. Ainsworth. Review Series No. 6 of the Commonwealth Bureau of Animal Health, Farnham Royal, Slough: Commonwealth Agricultural Bureaux.
- APPLEBY, E. C. & KEYMER, I. F. (1973). More tumours in captive wild animals: a third brief report. *VerhBer. Int. Symp. Erkrank Zootiere* 15: 347-351.
- AUSTWICK, P. K. C. (1973). Endemic nephropathy (editorial). *Lancet* 1973 (i): 472.
- BALL, D. J. (1973). Feeding reptiles. *J. Inst. Anim. Techns* 24: 4, 83-90.
- DU BOULAY, G. H., EL GAMMAL, T. & TRICKEY, S. E. (1973). True and false carotid retia. *Br. J. Radiol.* 46: 205-212.
- DU BOULAY, G. H., SYMON, L., ACKERMAN, R. H., DORSCH, N. W. C., KENDALL, B. E. & SHAH, S. H. (1973). The reactivity of spastic arteries. *Neuroradiology* 5: 37-39.
- DU BOULAY, G. H. & VERITY, P. M. (1973). *The cranial arteries of mammals*. London: William Heinemann Medical Books Limited.
- BROOKER, B. E. (1972). Modifications in the arrangement of the Pellicular Microtubules of *Crithidia fasciculata* in the gut of *Anopheles gambiae*. *Z. Parasitenk.* 40: 271-280.
- BURRIDGE, M. J., KIMBER, C. D. & YOUNG, A. S. (1973). Use of the indirect fluorescent antibody technique in serologic studies of *Theileria lawrencei* infections in cattle. *Am. J. vet. Res.* 34: 897-900.
- CARTER, R. & VOLLER, A. (1973). Enzyme typing of malaria parasites. *Br. Med. J.* 1973: 149-150.
- CRAWFORD, M. A. (1971). Epidemiological Interactions. In *Symposium on mycotoxins in human health*: 231-244. Purchase, I. F. H. (Ed.) Proceedings of a Symposium in Pretoria, 1970. London: Macmillan.
- CRAWFORD, M. A., SINCLAIR, A. J., MSUYA, P. M. & MUNHAMBO, A. (1973). Structural lipids and their polyenoic constituents in human milk. In *Dietary lipids and postnatal development*: 41-56. Galli, C., Jacini, G. & Pecile, A. (Eds). New York: Raven Press.
- DUPLAIX-HALL, N. (1973). The Sea otter story. In *Wildlife today*. Sitwell, N., (Ed.). London: T. Stacey Ltd. 1: 90-93.
- DUPLAIX-HALL, N. (1973). Cabbages and kings. *Proc. A. AAZPA Conf.* No. 48: 64-67.
- FIENNES, R. N. T-W- (1972). The Owl monkey (*Aotus trivirgatus*) in research. In *Medical Primatology 1972. Proc. 3rd Conf. exp. Med. Surg. Primates*, Lyon 1972: Part I, 93-94. Goldsmith, E. I. and Moor-Janowski, J. (Eds). Basel: S. Karger.
- GEORGE, W. & WEIR, B. J. (1973). A note on the karyotype of *Proechimys guairae* (Rodentia: Hystricomorpha). *Mammalia* 37: 330-332.
- GOODWIN, L. G. & GUY, M. W. (1973). Tissue fluid in rabbits infected with *Trypanosoma (Trypanozoon) brucei*. *Parasitology* 66: 499-513.
- GOODWIN, L. G., GUY, M. W. & BROOKER, B. E. (1973). Connective tissue changes in rabbits infected with *Trypanosoma (Trypanozoon) brucei*. *Parasitology* 67: 115-122.
- GULAMHUSEIN, A. P. & BECK, F. (1973). Light and electron microscopic observations at the pre- and early post-implantation stages in the ferret uterus. *J. Anat., Lond.* 115: 159-174.
- HIME, J. M. (1972). Eye disease in terrapins. *Vet. Rec.* 91: 493.
- HIME, J. M. (1973). Mobile den wall installation for handling large mammals. *Int. Zoo Yb.* 13: 277.
- HOLT, W. V. & JONES, R. C. (1973). The ultrastructure and histochemistry of the chin gland of the Cuis, *Galea musteloides*. *J. Anat., Lond.* 114: 221-233.
- HOLT, W. V. & TAM, W. H. (1973). Steroid metabolism by the chin gland of the male Cuis, *Galea musteloides*. *J. Reprod. Fert.* 33: 53-59.
- JONES, D. M. (1972). Use of drugs for immobilization, capture and translocation of non-domestic animals. In *Veterinary Annual*: 320-352. Grunsell, C. F. G. & Hill, F. W. G. (Eds). Bristol: J. Wright & Sons.
- JONES, D. M. (1973). Destruction in Niger. *Oryx* 12: 227-232.
- JONES, D. M. & HIME, J. M. (1973). Immobilization of Fallow deer. *Vet. Rec.* 93: 526.

- JONES, R. C. (1973). Changes occurring in the head of boar spermatozoa: vesiculation or vacuolation of the acrosome? *J. Reprod. Fert.* 33: 113-118.
- JONES, R. C. (1973). Preparation of spermatozoa for electron and light microscopy. *J. Reprod. Fert.* 33: 145-149.
- JONES, R. C. (1973). The plasma membrane of ram, boar and bull spermatozoa. *J. Reprod. Fert.* 33: 179-183.
- JONES, R. C. (1973). Collection, motility and storage of spermatozoa from the African elephant, *Loxodonta africana*. *Nature, Lond.* 243: 38-39.
- KENNEDY, G. Y. & VEVERS, H. G. (1973). Eggshell pigments of the Araucano fowl. *Comp. Biochem. Physiol.* 44B: 11-25.
- KEYMER, I. F. (1973). Diseases of passerine birds. *Vet. Rec.* 33 (3): 47-52.
- KEYMER, I. F. (1973). Psittacosis—A danger to public health. *Vet. Rec.* 92: 681.
- KEYMER, I. F. (1973). Psittacosis. *Vet. Rec.* 93: 654.
- KEYMER, I. F. (1973). Psittacosis. *Lancet* 1973 (ii): 1436-1437.
- KEYMER, I. F., IRVIN, A. D. & COOPER, J. E. (1972). (Eds). *Proceedings of the British Veterinary Zoological Society. 1961-1970*. London: BVZS.
- KRETSCHMAR, W. & VOLLER, A. (1973). Suppression of *Plasmodium falciparum* malaria in *Aotus* monkeys by milk diet. *Z. tropenmed. Parasit.* 24: 51-59.
- MANTON, V. J. A. (1973). 1971 World register of Père David's deer (*Elaphurus davidianus*). *Int. Zoo Yb.* 13: 250-251.
- MANTON, V. J. A. & JONES, D. M. (1973). Immobilon in deer. *Vet. Rec.* 93: 26.
- NEVILLE, R. W. J., WEIR, B. J. & LAZARUS, N. R. (1973). Insulins of hystricomorph rodents. *Diabetes* 22: 851-853.
- OLNEY, P. J. S. (1973). Breeding of the Blue-backed manakin, *Chiroxiphia pareola* at London Zoo. *Avic. Mag.* 79: 1-3.
- ROBERTS, C. M. & WEIR, B. J. (1973). Implantation in the Plains viscacha, *Lagostomus maximus*. *J. Reprod. Fert.* 33: 299-307.
- ROLPH, L. & AUSTWICK, P. K. C. (1973). Differential staining of fungi in tissue. *J. Sci. Tech.* 17: 22-26.
- ROTH, H. H., KEYMER, I. F. & APPLEBY, E. C. (1973). Computerized data recording for captive and free-living wild animals. *Int. Zoo Yb.* 13: 252-257.
- RYDER-DAVIES, P. (1973). The use of Metomidate, an intramuscular narcotic for birds. *Vet. Rec.* 92: 507-509.
- RYDER-DAVIES, P. & HIME, J. M. (1972). Hypertrophic osteoarthropathy in a gibbon (*Hylobates lar*). *J. small Anim. Pract.* 13: 655-658.
- SEAMAN, J., BOLT, J., RIVERS, J. & MURLIS, J. (1973). An inquiry into the drought situation in Upper Volta. *Lancet* 1973 (ii): 774-778.
- SINCLAIR, A. J. & CRAWFORD, M. A. (1973). The effect of a low-fat maternal diet on neonatal rats. *Br. J. Nutr.* 29: 127-137.
- SINCLAIR, A. J. & CRAWFORD, M. A. (1973). The incorporation of linoleate and arachidonate into liver and brain lipids of developing rats. *Biochem. Soc. Trans.* 1: 462-463.
- SMITH, G. R. (1973). Tests in mice of the activity of Ronidazole against the causal mycoplasmata of contagious bovine and caprine pleuropneumonia. *Vet. Rec.* 93: 440-444.
- SMITH, G. R. (1973). Effect of sub-lethal treatment with formalin on the germination of *Aspergillus fumigatus* spores. *J. Hyg. (Camb.)* 71: 745-753.
- SMITH, R. R. (1973). Gorillas. *J. Inst. Anim. Techns* 25: 45-50.
- STEWART, M. W. & VOLLER, A. (1973). The effect of malaria on the relative affinity of mouse antiprotein antibody. *Br. J. exp. Path.* 54: 198-202.
- STOCK, M. J. & RIVERS, J. P. W. (1973). Human protein and energy requirements? *Lancet* 1973 (ii): 732-733.
- SYMON, L., DU BOULAY, G. H., ACKERMAN, R. H., DORSCH, N. W. C. & SHAH, S. H. (1973). The time-course of blood-induced spasm of cerebral arteries in baboons. *Neuroradiology* 5: 40-42.
- TAM, W. H. (1973). Progesterone levels during the oestrous cycle and pregnancy in the Cuis (*Galea musteloides*). *J. Reprod. Fert.* 35: 105-114.
- UPHILL, P. F. (1973). A quantitative comparison of the faecal microflora of baboons fed a natural diet or a synthetic diet complete or deficient in pyridoxine or riboflavin. *J. appl. Bact.* 36: 501-511.
- VOLLER, A., GREEN, D. I. & RICHARDS, W. H. G. (1973). Cross immunity studies with East and West African strains of *Plasmodium falciparum* in Owl monkeys (*Aotus trivirgatus*). *J. trop. Med. Hyg.* 76: 135-139.
- WEIR, B. J. (1973). The induction of ovulation and oestrus in the Chinchilla. *J. Reprod. Fert.* 33: 61-68.
- WEIR, B. J. (1973). Another hystricomorph rodent: keeping Casiragua (*Proechimys guairae*) in captivity. *Lab. Anim.* 7: 125-134.

LIST OF ANIMALS RECEIVED

(presented, purchased, received in exchange, deposited or born in the Menagerie)

Key

- G Genus new to the Collection
 S Species new to the Collection
 SS Subspecies new to the Collection

Note The author and the geographical distribution are given only in the case of forms new to the Collection.

In the column 'Total number acquired', the figures in brackets indicate animals which have been transferred between the Society's two Collections.

In the column 'Number born or hatched in the Menagerie', the figures in brackets indicate the number which have died.

		<i>Total number acquired</i>	<i>Number born or hatched in the Menagerie</i>
REGENT'S PARK			
Mammals			
MARSUPIALIA			
<i>Petaurus breviceps</i>	Short-headed Flying Phalanger	4	
<i>Protemnodon parma</i>	White-throated Wallaby	5	1 (1)
<i>Protemnodon rufogrisea</i>	Red-necked Wallaby	1 (1)	
<i>Macropus canguru</i>	Great Grey Kangaroo	1	
<i>Dendrolagus goodfellowi</i>	Goodfellow's Tree Kangaroo	3	
INSECTIVORA			
<i>Setifer setosus</i>	Spiny Tenrec	8	8 (6)
CHIROPTERA			
<i>Desmodus rotundus</i>	Vampire Bat	3	3 (1)
PRIMATES			
<i>Tupaia tana</i>	Large Tree Shrew	6	6 (3)
<i>Lemur catta</i>	Ring-tailed Lemur	1	1
<i>Lemur fulvus mayottensis</i>	Brown Lemur	1	1
<i>Microcebus murinus</i>	Brown Mouse Lemur	2	
<i>Microcebus rufus</i>	Red Mouse Lemur	2	
<i>Nycticebus coucang</i>	Slow Loris	7	2 (2)
<i>Arctocebus calabarensis</i>	Angwantibo	1	1 (1)
<i>Perodicticus potto</i>	Potto	1	1 (1)
<i>Galago senegalensis</i>	Common Bushbaby	2	2 (1)
<i>Cebus apella</i>	Brown Capuchin	3	3 (1)
<i>Ateles paniscus</i>	Black Spider Monkey	7	
<i>Callithrix argentata</i>	Silvery Marmoset	1	
<i>Saguinus illigeri</i>	Red-mantled Tamarin	2	2 (1)
<i>Saguinus mystax</i>	Moustached Tamarin	1	
<i>Macaca nemestrina</i>	Pig-tailed Monkey	2	2
<i>Theropithecus gelada</i>	Gelada Baboon	4	
<i>Cercopithecus pygerythrus</i>	Vervet Monkey	1	1

		Total number acquired	Number born or hatched in the Menagerie
<i>Cercopithecus talapoin</i>	Talapoin Monkey	1	1
<i>Colobus guereza</i>	Colobus Monkey	4	
<i>Hylobates lar</i>	Lar Gibbon	1	1
<i>Pongo pygmaeus</i>	Orang Utan	2	2 (1)
<i>Pan troglodytes</i>	Chimpanzee	2 (1)	1
EDENTATA			
<i>Chaetophractus nationi</i>	Furry Armadillo	2	2 (2)
RODENTIA			
<i>Funisciurus pyrrhopus</i>	Fire-footed Squirrel	1	1 (1)
<i>Eutamias</i> sp.	Chipmunk	1	
<i>Glaucomys volans</i>	Flying Squirrel	1	
<i>Peromyscus maniculatus</i>	Deer Mouse	30	
<i>Phodopus roborovskii</i>	Dwarf Hamster	23	19 (2)
<i>Clethrionomys glareolus</i>	Bank Vole	9	5
<i>Meriones unguiculatus</i>	Clawed Jird	14	
<i>Micromys minutus</i>	Harvest Mouse	7	
<i>Grammomys dolichurus</i>	Long-tailed Thicket Rat	8	8
<i>Arvicanthis niloticus</i>	Nile Rat	3	3
<i>Lemniscomys striatus</i>	Striped Grass Mouse	4	4
G <i>Pogonomys macrourus</i> Milne-Edwards (New Guinea)	Prehensile-tailed Tree Mouse	10	
<i>Glis glis</i>	Fat Dormouse	5	
<i>Galea musteloides</i>	Cuis	8	8 (6)
<i>Cuniculus paca</i>	Paca	1	
<i>Myoprocta pratti</i>	Green Acouchy	1	1
<i>Lagostomus maximus</i>	Viscacha	7	4 (2)
<i>Chinchilla laniger</i>	Chinchilla	4	4 (1)
<i>Dolichotis patagonum</i>	Patagonian Cavy	4	4 (1)
CARNIVORA			
<i>Canis lupus</i>	Wolf	1	1
<i>Canis familiaris</i>	Singing × Dingo Dog	1	1
<i>Fennecus zerda</i>	Fennec Fox	1	1
<i>Ursus arctos</i>	Brown Bear	2	2 (2)
<i>Ursus americanus</i>	American Black Bear	2	2
<i>Nasua nasua</i>	Ring-tailed Coati	2	2 (2)
<i>Mustela putorius</i>	Ferret	1	
<i>Tayra barbara</i>	Tayra	2	2 (2)
<i>Suricata suricatta</i>	Grey Meerkat	3	
<i>Felis wiedii</i>	Margay	1	
<i>Felis concolor</i>	Puma	3	3
PINNIPEDIA			
<i>Zalophus californianus</i>	Californian Sea Lion	1	1 (1)
PERISSODACTYLA			
<i>Equus hemionus</i>	Onager	1	1
<i>Equus burchelli</i>	Common Zebra	2	2
<i>Tapirus indicus</i>	Malay Tapir	1	1 (1)
ARTIODACTYLA			
<i>Sus scrofa</i>	Wild Boar	18	18 (12)

		Total number acquired	Number born or hatched in the Menagerie
<i>Lama guanicoe</i>	Guanaco	1	1
<i>Camelus bactrianus</i>	Bactrian Camel	2 (2)	
<i>Camelus dromedarius</i>	Arabian Camel	1	1
<i>Dama dama</i>	Fallow Deer	3	3
<i>Axis axis</i>	Spotted Deer	2	2
<i>Cervus timorensis</i>	Timor Deer	7	7 (1)
<i>Pudu pudu</i>	Pudu	2	
<i>Tragelaphus strepsiceros</i>	Greater Kudu	1	1
<i>Taurotragus oryx</i>	Eland	1 (1)	
<i>Bos grunniens</i>	Yak	2	2
<i>Bison bison</i>	North American Bison	1	1
<i>Damaliscus dorcas</i>	Blesbok	1	1 (1)
<i>Antilope cervicapra</i>	Blackbuck	15	15 (5)
<i>Capra falconeri</i>	Markhor	2	2
<i>Ammotragus lervia</i>	Barbary Sheep	25	25 (13)
<i>Ovis musimon</i>	Mouflon	9	9 (5)
<i>Ovis canadensis</i>	Bighorn Sheep	3	3 (1)
DOMESTIC			
	Cream Pony	1	1
	Domestic Pig	4	
	Goat	14	14 (1)
	Sheep	26	14 (5)
Birds			
STRUTHIONIFORMES			
<i>Struthio camelus</i>	Ostrich	1	
CASUARIIFORMES			
<i>Dromaius novae-hollandiae</i>	Emu	2	
PROCELLARIIFORMES			
<i>Puffinus puffinus</i>	Manx Shearwater	1	
PELECANIFORMES			
<i>Sula bassanus</i>	Gannet	1	
<i>Pelecanus onocrotalus</i>	Eastern White Pelican	2	
CICONIIFORMES			
<i>Nycticorax nycticorax</i>	Night Heron	1	1 (1)
<i>Ibis leucocephalus</i>	Painted Stork	3	
<i>Threskiornis aethiopica</i>	Sacred Ibis	1	1 (1)
ANSERIFORMES			
<i>Cereopsis novae-hollandiae</i>	Cereopsis Goose	3 (3)	
<i>Anser erythropus</i>	Lesser White-fronted Goose	2	
<i>Anser caerulescens atlanticus</i>	Greater Snow Goose	3	3
<i>Branta ruficollis</i>	Red-breasted Goose	1 (1)	
<i>Branta sandvicensis</i>	Hawaiian Goose	4	3
<i>Tadorna tadorna</i>	Common Shelduck	1	1
<i>Somateria mollissima</i>	Eider Duck	1	
<i>Mergus cucullatus</i>	Hooded Merganser	2	
FALCONIFORMES			
<i>Polyboroides typus</i>	African Harrier Hawk	2	
<i>Milvus migrans</i>	Black Kite	1	1

		Total number acquired	Number born or hatched in the Menagerie
GALLIFORMES			
<i>Coturnix chinensis</i>	Painted Quail	3	
<i>Tragopan satyra</i>	Satyr Tragopan	2	
<i>Lophura leucomelanos leucomelanos</i>	Nepal Kalji Pheasant	2	
<i>Lophura nycthemerus</i>	Silver Pheasant	7	7
<i>Lophura swinhoii</i>	Swinhoe's Pheasant	3	
<i>Catreus wallichii</i>	Cheer Pheasant	3	3 (2)
<i>Syrnaticus soemmerringii soemmerringii</i>	Soemmerring's Copper Pheasant	2	
<i>Chrysolophus amherstiae</i>	Lady Amherst's Pheasant	9	9
<i>Pavo cristatus</i>	Common Peafowl	5	5
GRUIFORMES			
<i>Aramides cajanea</i>	Cayenne Wood Rail	2	
<i>Grus antigone</i>	Sarus Crane	1 (1)	
CHARADRIIFORMES			
<i>Tringa totanus</i>	Redshank	1	1 (1)
<i>Larosterna inca</i>	Inca Tern	13	
<i>Larus marinus</i>	Great Black-backed Gull	1	1
COLUMBIFORMES			
<i>Ducula badia cuprea</i>	Jerdon's Imperial Pigeon	1	1
<i>Columba guinea</i>	Speckled Pigeon	1	1
<i>Streptopelia vinacea vinacea</i>	Vinaceous Dove	5	5 (1)
<i>Streptopelia chinensis chinensis</i>	Chinese Necklace Dove	2	2
<i>Streptopelia chinensis tigrina</i>	Malayan Necklace Dove	1	1
<i>Ocyphaps lophotes</i>	Crested Pigeon	2	2
<i>Geotrygon versicolor</i>	Mountain Witch Dove	2	
<i>Gallicolumba luzonica</i>	Bleeding Heart Dove	1	
<i>Goura cristata</i>	Blue-crowned Pigeon	1	
PSITTACIFORMES			
<i>Domicella garrula</i>	Chattering Lory	1	
<i>Charmosyna pulchella</i>	Fairy Lorikeet	1	
<i>Cacatua alba</i>	White-crested Cockatoo	1	
<i>Nymphicus hollandicus</i>	Cockatiel	6	6 (1)
<i>Rhynchopsitta pachyrhyncha</i>	Thick-billed Parrot	3	
<i>Myiopsitta monachus</i>	Quaker Parrakeet	1	1
<i>Poicephalus ruppellii</i>	Rüppell's Parrot	2	
<i>Agapornis fischeri</i>	Fischer's Lovebird	15	
<i>Psephotus haematogaster haematogaster</i>	Yellow-vented Blue Bonnet Parrakeet	2	
CUCULIFORMES			
<i>Tauraco corythaix</i>	Knysna Turaco	2	2
<i>Tauraco hartlaubi</i>	Hartlaub's Turaco	2	
STRIGIFORMES			
<i>Tyto alba</i>	Barn Owl	1	
<i>Bubo bubo ascalaphus</i>	Savigny's Eagle Owl	9	9
<i>Bubo capensis mackinderi</i>	Kenya Eagle Owl	5	5
<i>Bubo africanus cinerascens</i>	Abyssinian Spotted Eagle Owl	1	1

		Total number acquired	Number born or hatched in the Menagerie
<i>Bubo africanus</i>	African Spotted Eagle Owl	1	1
<i>Scotopelia bouvieri</i>	Vermiculated Fishing Owl	2	
<i>Nyctea scandiaca</i>	Snowy Owl	4	4
<i>Ciccaba woodfordii nuchalis</i>	West African Wood Owl	2	2
APODIFORMES			
<i>Amazilia tzacatl</i>	Rufous-tailed Humming Bird	1	
TROGONIFORMES			
s <i>Pharomachrus pavoninus</i> (Gould) (South America)	Pavonine Quetzal	2	
CORACIIFORMES			
<i>Alcedo atthis</i>	European Kingfisher	1	
<i>Coracias benghalensis</i>	Indian Roller	4	
<i>Upupa epops</i>	Common Hoopoe	1	
<i>Phoeniculus purpureus</i>	Wood Hoopoe	1	
s <i>Tockus deckeni jacksoni</i> (Ogilvie-Grant) (Africa)	Jackson's Hornbill	2	
<i>Aceros undulatus</i>	Wreathed Hornbill	2	
<i>Bycanistes bucinator</i>	Trumpeter Hornbill	2	
PICIFORMES			
<i>Capito niger</i>	Black-spotted Barbet	2	
<i>Semnornis ramphastinus</i>	Toucan Barbet	2	
<i>Megalaima mystacophanos</i>	Gaudy Barbet	2	
<i>Trachyphonus erythrocephalus</i>	Red and Yellow Barbet	2	
<i>Trachyphonus darnaudii</i>	d'Arnaud's Barbet	2	
s <i>Andigena laminirostris</i> Gould (South America)	Laminated Hill Toucan	2	
s <i>Ramphastos citreolaemus</i> Gould (South America)	Citron-throated Toucan	1	
PASSERIFORMES			
<i>Rupicola peruviana</i>	Cock of the Rock	1	
<i>Pitta guajana</i>	Banded Pitta	2	
<i>Chloropsis aurifrons</i>	Golden-fronted Fruitsucker	1	
<i>Copsychus saularis</i>	Dial Bird	2	
<i>Copsychus malabaricus</i>	Shama	2	
<i>Bombycilla cedrorum</i>	Cedar Waxwing	3	
<i>Yuhina flavicollis</i>	Yellow-collared Ixulus	2	
<i>Niltava sundara</i>	Rufous-bellied Niltava	2	
<i>Emberiza bruniceps</i>	Red-headed Bunting	2	
<i>Gubernatrix cristata</i>	Green Cardinal	5	1
<i>Passerina ciris</i>	Painted Bunting	2	
<i>Passerina leclancherii</i>	Rainbow Bunting	4	
<i>Pinicola subhimachalus</i>	Red-headed Finch	2	
<i>Poephila guttata castanotis</i>	Zebra Finch	22	22
<i>Erythrura trichroa</i>	Three-coloured Parrot Finch	2	
<i>Chloebia gouldiae</i>	Gouldian Finch	4	
<i>Vidua paradisaea</i>	Paradise Whydah	2	
<i>Passer luteus</i>	Yellow Sparrow	1	
<i>Euplectes gierowii</i>	Black Bishop	3	
<i>Onychognathus salvadorii</i>	Bristle-crowned Starling	2	2 (1)
<i>Spreo superbus</i>	Superb Glossy Starling	4	4 (2)

		Total number acquired	Number born or hatched in the Menagerie
<i>Gracula religiosa intermedia</i>	Nepal Hill Mynah	1	
<i>Leucopsar rothschildi</i>	Rothschild's Grackle	2	
<i>Garrulus glandarius</i>	Jay	1	
<i>Cyanopica cyana</i>	Azure-winged Magpie	2	
<i>Pyrrhocorax graculus</i>	Alpine Chough	1	
Reptiles			
TESTUDINES			
<i>Pseudemys scripta elegans</i>	Red-eared Terrapin	30	
<i>Pseudemys ornata calirostris</i>	Ornate Terrapin	1	
<i>Pseudemys floridana floridana</i>	Florida Terrapin	1	
<i>Mauremys caspica leprosa</i>	Spanish Terrapin	6	
<i>Emys orbicularis</i>	European Pond Tortoise	2	
<i>Terrapene carolina</i>	Carolina Box Tortoise	1	
<i>Testudo graeca</i>	Mediterranean Spur-thighed Tortoise	20	
<i>Testudo hermanni</i>	Hermann's Tortoise	1	
<i>Psammobates oculifer</i>	Kuhl's Tortoise	2	
<i>Chelodina oblonga</i>	Oblong Tortoise	1	
<i>Emydura macquarri</i>	Murray River Tortoise	1	
CROCODILIA			
<i>Caiman crocodilus</i>	Spectacled Cayman	2	
<i>Caiman crocodilus yacare</i>	Paraguayan Cayman	2	
SAURIA			
Sp. inc.	Gecko	3	
<i>Gekko gekko</i>	Tokay	2	
<i>Homopholis wahlbergi</i>	Wahlberg's Gecko	1	
<i>Pachydactylus bibronii</i>	Bibron's Gecko	1	
<i>Eublepharis macularius</i>	Leopard Gecko	1	
<i>Anolis equestris</i>	Greater Cuban Anole	2	
<i>Iguana iguana</i>	Common Iguana	8	
<i>Iguana iguana rhinolopha</i>	Nose-crested Iguana	5	
<i>Sauromalus obesus</i>	Chuckwalla	1	
<i>Ctenosaura</i> sp.	Black Iguana	2	
<i>Sceloporus</i> sp.	Fence Lizard	1	
s <i>Sceloporus orcutti</i> Stegner (California)	Granite Spiny Lizard	4	
s <i>Sceloporus occidentalis</i> Baird (Western North America)	Pacific Fence Lizard	1	
<i>Phrynosoma</i> sp.	Horned Toad	6	
<i>Gerrhosaurus vallidus</i>	Robust Plated Lizard	1	
<i>Cophotis ceylanica</i>		2	
<i>Calotes</i> sp.		31	
<i>Agama</i> sp.		5	
<i>Agama agama</i>	Common Agama	12	
<i>Physignathus concinnus</i>	Thailand Water Dragon	6	6
<i>Uromastix acanthinurus</i>	Bell's Dabb Lizard	7	
<i>Uromastix hardwicki</i>	General Hardwicke's Dabb Lizard	1	
<i>Chamaeleo chamaeleon</i>	Common Chameleon	1	
<i>Chamaeleo melleri</i>	Meller's Chameleon	1	
<i>Chamaeleo dilepis</i>	Flap-necked Chameleon	2	
<i>Chamaeleo jacksoni</i>	Jackson's Chameleon	1	

		Total number acquired	Number born or hatched in the Menagerie
Sp. inc.	Skink	2	
<i>Trachydosaurus rugosus</i>	Shingle-back	2	
<i>Mabuya quinquetaeniata</i>	Five-lined Skink	2	
<i>Gerrhosaurus flavigularis</i>	Yellow-throated Plated Lizard	1	
<i>Lacerta viridis</i>	Green Lizard	2	
<i>Lacerta lepida</i>	Eyed Lizard	2	
<i>Varanus exanthematicus</i>	Bosc's Monitor	1	
<i>Varanus flavescens</i>	Yellow Monitor	1	
<i>Varanus bengalensis</i>	Bengal Monitor	3	
<i>Varanus salvator</i>	Two-banded Monitor	2	
<i>Heloderma horridum</i>	Mexican Beaded Lizard	1	
<i>Anguis fragilis</i>	Slowworm	1	
<i>Cordylus giganteus</i>	Sungazer	1	
<i>Cordylus vittifer</i>	Transvaal Girdled Lizard	2	
SERPENTES			
<i>Python molurus</i>	Indian Rock Python	3	
<i>Python regius</i>	Royal Python	3	
<i>Chondropython viridis</i>	Papuan Tree Python	1	
<i>Epicrates cenchria</i>	Rainbow Boa	1	
<i>Eunectes notaeus</i>	Yellow Anaconda	1	
<i>Boa constrictor</i>	Boa Constrictor	4	
<i>Eryx jaculus</i>	Javelin Sand-boa	1	
<i>Natrix natrix persa</i>	Grass Snake	1	
<i>Boaedon fuliginosus</i>	African House Snake	3	
<i>Lycophidion capensis</i>	Cape Wolf-snake	1	
<i>Pseudaspis cana</i>	Mole Snake	2	
<i>Elaphe</i> sp.		1	
<i>Elaphe obsoleta lindheimeri</i>	Texas Rat Snake	2	
<i>Elaphe radiata</i>	Eastern Copperhead	2	
<i>Coluber</i> sp.		1	
<i>Coluber jugularis</i>	Green Whip-snake	1	
<i>Pituophis catenifer</i>	Gopher Snake	1	
<i>Pituophis catenifer sayi</i>	Bull Snake	1	
<i>Leisophis gigas</i>	Boipevussu Snake	14	14
<i>Lampropeltis getulus floridana</i>	Florida King Snake	1	
<i>Lampropeltis getulus californiae</i>	California King Snake	2	
<i>Grayia Smythii</i>	Smyth's Water-snake	1	
<i>Dasyplectis scabra</i>	African Egg-eating Snake	1	
<i>Boiga dendrophila</i>	Black-and-gold Tree Snake	2	
<i>Crotaphopeltis hotamboeia</i>	Herald Snake	2	
s <i>Psammophis pulcher</i> (Kenya)	Beautiful Sand Snake	1	
<i>Ahaetulla prasinus</i>	Emerald Whip-snake	6	6
<i>Chrysopelea ornata</i>	Ornate Tree Snake	2	
<i>Naja nigricollis</i>	Black-necked Cobra	1	
<i>Naja naja</i>	Indian Cobra	3	
s <i>Causus maculatus</i> (Hallowell) (West and Central Africa)	Forest Rhombic Night Viper	1	
<i>Bitis arietans</i>	Puff Adder	1	
<i>Echis carinatus</i>	Carpet Viper	4	
<i>Agkistrodon rhodostoma</i>	Malayan Pit Viper	14	14
<i>Trimeresurus purpureomaculatus</i>	Gray's Pit Viper	5	
s <i>Trimeresurus popeorum</i> Smith (South-east Asia)	Pope's Pit Viper	6	

		Total number acquired	Number born or hatched in the Menagerie
<i>Trimeresurus wagleri</i>	Wagler's Pit Viper	1	
<i>Sistrurus miliarius</i>	Pygmy Rattlesnake	7	5
<i>Crotalus adamanteus</i>	Eastern Diamond-back Rattlesnake	3	
AMPHIBIA			
<i>Cynops pyrrhogaster</i>	Japanese Newt	6	
<i>Necturus maculosus</i>	Mud Puppy	2	
<i>Triturus cristatus</i>	Crested Newt	30	30
<i>Triturus marmoratus</i>	Marbled Newt	2	
<i>Salamandra salamandra</i>	European Salamander	6	
<i>Ambystoma mexicanum</i>	Axolotl	12	
<i>Xenopus muelleri</i>	Mueller's Clawed Toad	1	
<i>Bombina variegata</i>	Yellow-bellied Toad	12	
<i>Bufo boreas</i>	Californian Toad	2	
<i>Bufo regularis</i>	Common African Toad	9	
<i>Hyla arborea</i>	European Tree Frog	22	
<i>Hyla cinerea</i>	Green Tree Frog	2	
<i>Hyla regilla</i>	Pacific Tree Frog	4	
<i>Hyla septentrionalis</i>	Cuban Tree Frog	8	
<i>Rana hexadactyla</i>	Six-fingered Frog	2	
<i>Rana dicroglossus occipitalis</i>	Crowned River Frog	1	
<i>Rana ridibunda</i>	Marsh Frog	18	
<i>Pyxicephalus adspersus</i>	African Bull-frog	2	
<i>Rana pipiens</i>	Leopard Frog	2	
<i>Kaloula pulchra</i>	Malayan Bull-frog	2	
WHIPSNADE PARK			
Mammals			
MARSUPIALIA			
<i>Protemnodon rufogrisea</i>	Red-necked Wallaby	50	50
PRIMATES			
<i>Galago crassicaudatus</i>	Thick-tailed Bushbaby	2	2 (1)
RODENTIA			
<i>Cynomys ludovicianus</i>	Prairie Marmot	3	3 (1)
<i>Dolichotis patagonum</i>	Mara	9	9 (2)
CARNIVORA			
<i>Canis lupus</i>	Canadian Timber Wolf	1	1
<i>Ursus arctos</i>	Brown Bear	2	2 (1)
	Kodiak Bear	4	4 (2)
<i>Nasua nasua</i>	Coati	6	6
<i>Felis lynx</i>	Northern Lynx	2	2
<i>Felis serval</i>	Serval	1	
<i>Panthera leo</i>	Lion	5	5 (2)
<i>Panthera tigris</i>	Tiger	1	
<i>Acinonyx jubatus</i>	Cheetah	6 (1)	5
PROBOSCIDEA			
<i>Loxodonta africana</i>	African Elephant	1 (1)	

		Total number acquired	Number born or hatched in the Menagerie
PERISSODACTYLA			
<i>Equus przewalskii</i>	Przewalski's Horse	1	
<i>Equus zebra</i>	Mountain Zebra	1	1 (1)
<i>Equus burchelli</i>	Common Zebra	2	
<i>Asinus hemionus</i>	Persian Onager	3	3
<i>Rhinoceros unicornis</i>	Indian Rhinoceros	1	
<i>Diceros simus</i>	White Rhinoceros	2	2
<i>Diceros bicornis</i>	Black Rhinoceros	1	1
ARTIODACTYLA			
<i>Sus scrofa</i>	Wild Boar	10	10 (10)
<i>Tayassu tajacu</i>	Collared Peccary	2	2
<i>Hippopotamus amphibius</i>	Hippopotamus	2	2 (2)
<i>Lama glama</i>	Llama	9	9 (1)
<i>Lama guanicoe</i>	Guanaco	5	5
<i>Camelus bactrianus</i>	Bactrian Camel	8 (1)	7 (4)
<i>Camelus dromedarius</i>	Arabian Camel	2	2
<i>Muntiacus reevesi</i>	Reeves' Muntjac	2	2
<i>Dama dama</i>	Fallow deer	17	17 (3)
<i>Axis axis</i>	Axis Deer	10	10 (6)
<i>Axis porcinus</i>	Hog Deer	7	7 (1)
<i>Cervus duvauceli</i>	Barasingha	3	3
<i>Cervus nippon</i>	Black × Japanese Sika Deer	3	3
	Formosan Sika Deer	10	10 (2)
<i>Cervus elaphus</i>	Red Deer	9	9 (1)
	Wapiti	6	6 (3)
<i>Elaphurus davidianus</i>	Père David's Deer	11	11
<i>Alces alces</i>	Moose	2	2 (1)
<i>Rangifer tarandus</i>	Reindeer	3	3 (1)
<i>Hydropotes inermis</i>	Chinese Water Deer	25	25 (1)
<i>Giraffa camelopardalis</i>	Giraffe	1	1 (1)
<i>Tragelaphus spekei</i>	Sitatunga	4 (2)	2
<i>Boselaphus tragocamelus</i>	Nilgai	4	4 (1)
<i>Bos grunniens</i>	Yak	1	1 (1)
<i>Syncerus caffer</i>	Cape Buffalo	1	1
<i>Bison bonasus</i>	European Bison	1	1
<i>Bison bison</i>	American Bison	2	2
<i>Damaliscus dorcas</i>	Blesbok	1	1
<i>Connochaetes taurinus</i>	Brindled Gnu	2	2 (1)
<i>Gazella thomsoni</i>	Thomson's Gazelle	7	7
<i>Ovibos moschatus</i>	Musk Ox	1	1 (1)
<i>Ovis musimon</i>	Mouflon	11	11 (8)
DOMESTIC			
	Ponies	3	3 (1)
	Pitman Moore Miniature		
	Swine	2	
	Vietnam Pot-bellied Pig	7	5 (5)
	Ankole Ox	3	3
	Windsor White Goat	20	20 (9)
	Four-horned Sheep	19	19 (9)
Birds			
RHEIFORMES			
<i>Rhea americana</i>	Common Rhea	8	8 (2)

		Total number acquired	Number born or hatched in the Menagerie
CASUARIIFORMES			
<i>Dromaius novae-hollandiae</i>	Emu	13 (1)	8 (3)
PELECANIFORMES			
<i>Pelecanus onocrotalus</i>	Eastern White Pelican	2	
<i>Pelecanus occidentalis</i>	Brown Pelican	3	
CICONIIFORMES			
<i>Ciconia ciconia</i>	White Stork	2	
<i>Eudocimus albus</i>	American White Ibis	6	
<i>Phoenicopterus ruber ruber</i>	Rosy Flamingo	3	3
ANSERIFORMES			
<i>Cygnus atratus</i>	Black Swan	2	2
<i>Cereopsis novae-hollandiae</i>	Cereopsis Goose	7 (1)	6
<i>Anser caerulescens atlanticus</i>	Greater Snow Goose	25	25 (6)
<i>Anser anser</i>	Grey Lag Goose	11	11
<i>Anser indicus</i>	Bar-headed Goose	2	2
<i>Anser canagicus</i>	Emperor Goose	9	9 (2)
<i>Branta leucopsis</i>	Barnacle Goose	7	7 (7)
<i>Branta canadensis</i>	Canada Goose	7	7
<i>Branta ruficollis</i>	Red-breasted Goose	2	2
<i>Tadorna variegata</i>	New Zealand Shelduck	1 (1)	
<i>Tadorna tadorna</i>	Common Shelduck	1	
<i>Anas formosa</i>	Baikal Teal	6	
<i>Anas sibilatrix</i>	Chiloe wigeon	5	
<i>Aix sponsa</i>	Carolina Duck	4	4
<i>Aix galericulata</i>	Mandarin Duck	1	
GALLIFORMES			
<i>Lophophorus impejanus</i>	Impeyan Pheasant	2	
<i>Syrnaticus ellioti</i>	Elliot's Pheasant	4	
<i>Syrnaticus mikado</i>	Mikado Pheasant	2	
<i>Meleagris gallopavo</i>	North American Turkey	15	15
GRUIFORMES			
<i>Grus japonensis</i>	Manchurian Crane	3	
<i>Grus vipio</i>	White-naped Crane	2	
<i>Grus antigone</i>	Sarus Crane	1 (1)	
<i>Anthropoides virgo</i>	Demoiselle Crane	8	
PSITTACIFORMES			
<i>Nymphicus hollandicus</i>	Cockatiel	4	4
<i>Psittacula eupatria nipalensis</i>	Alexandrine Parrakeet	1	
<i>Psittacula derbyana</i> × <i>Psittacula krameri</i> <i>manillensis</i>	Derbyan × Indian Ring- necked Parrakeet	1	1
<i>Psephotus haematonotus</i>	Red-rumped Parrakeet	2	1
<i>Melopsittacus undulatus</i>	Budgerigar	3	3
STRIGIFORMES			
<i>Bubo capensis mackinderi</i>	Kenya Eagle Owl	2	2
<i>Nyctea scandiaca</i>	Snowy Owl	2 (2)	
CORACIIFORMES			
<i>Dacelo novaeguineae</i>	Kookaburra	2	

LIST OF DONORS OF ANIMALS TO THE SOCIETY

REGENT'S PARK

- Adderson, Mr P., 2 Red-eared Terrapins
 Alderson, Mr G., 2 Albino Clarias
 Aldis, Mr, 2 Bell's Dabb Lizards
 Ambridge, Mr, 1 Red-eared Terrapin
 Ando, Mr T., 1 Spectacled Cayman
 Anscombe, Miss J. M., 2 Red-eared Terrapins
 Argyle, Mr N. E., 1 Stag Beetle
 Armstrong, Mr, 1 Carolina Box Tortoise
 Ballanger, Mrs, 1 Mediterranean Spur-thighed Tortoise
 Barking Abbey School, 1 Agama
 Batley, Mrs, 1 Diamond-back Moray Eel
 Bazalgette, Air Commodore, 1 Iguana
 Belford, Miss S., 1 Fairy Lorikeet
 Betts, Mr B., Desert Scorpions
 Bird, Mr J. R., 4 *Tilapia mariae*, 2 *Serrasalmus brandti*
 Birdland Zoo Gardens, Bourton-on-the-Water, 2 Mountain Witch Doves, 1 Bleeding Heart Dove
 Blake, Mr A., 1 Red-eared Terrapin
 Boccock, Mr J., Silkmoth Larvae
 Bone, Mrs, 4 Fat Dormice
 Booth, Mr A., 1 Golden-fronted Fruitsucker
 Booth, Dr Basil, 1 Bird-eating Spider
 Boulton, Mrs V., 2 Mediterranean Spur-thighed Tortoises
 Bowyer, Mr, 1 Florida King Snake, 2 Cuban Tree Frogs
 Boyson, Hugh, Stick Insects
 Broad, Mrs A., 80 Opaline Gouramis
 Buckmaster, Mrs M., Chinese Oak Moth Larvae
 Burrows, Mr F. P., 1 Owl Butterfly
 Butler, Mr, 1 Indian Rock Python
 Carter, Mr M., 1 Grass Snake
 Chaplin, The Viscount, 1 Nonpareil Bunting
 Classey, Mr, 1 Wolf Spider
 Claydon, Mrs, 2 Red-eared Terrapins
 Coates, Mr, 1 Bengal Monitor
 Cockburn, Mr C., 1 Pacific Fence Lizard
 Coleman, Mr B., 1 European Pond Tortoise
 Cooper, Miss J., 1 Spectacled Cayman
 Cooper, Mr J. E., 2 African Harrier Hawks
 Cox, Mr Peter, 1 Praying Mantis
 Creane, Mr P., 1 Common Hoopoe, 1 Dial Bird, 2 Rufous-bellied Niltavas
 Cully, Michael, 1 Chameleon
 Dawson, Miss, 1 Red-eared Terrapin, 1 Spanish Terrapin
 D'eath, Mr J., 1 Eider Duck
 Department of Animal Behaviour, Cambridge, 1 Flying Squirrel
 Devi, Miss Kamala, 1 Rainbow Boa, 1 Black-and-gold Tree Snake
 Dickenson, Mr G., 1 Red-eared Terrapin
 Downing, Mr P. G., 1 Piranha
 Duplaix-Hall, Mrs N., 14 Clawed Jirds
 Dyer, Mr, 1 Slowworm
 East Berlin Zoo, 4 Dwarf Hamsters
 Ebrehim, Mr H., 1 Chipmunk
 Edge, Mr Jed, 1 Jungle Scorpion
 Edwards, Mr S, 1 Iguana
 Elce, Mr, 1 Oblong Tortoise
 Ellis, Mrs W. M., 1 Tinsel Barb
 England, Mr M. D., 1 European Kingfisher
 Everett, Mr M. D., 2 Mirror Carp
 Fallis, Simon, 1 Mole Snake
 Formby, Mr, 2 Leopard Frogs
 Frampton, Mr, 1 Black-and-gold Tree Snake
 Gerrard, Louise, Stephen and Andrew, 1 Short-horn Grasshopper, 1 Hover-fly, 1 *Dysdercus*
 Gill, Mr P., 2 Green Tree Frogs, 3 Cuban Tree Frogs
 Gohon, Mr L. G., 1 Gourami
 Golledge, Miss S. J., 1 Elephant Hawk Moth
 Goss, Mr D., 1 Florida Terrapin, 1 Red-eared Terrapin
 Gray, Mr, RSPCA, 1 Fence Lizard
 Gredland, Miss A., Silkmoth Ova
 Grigg, Mr A., 2 Red-eared Terrapins
 Hamilton, Mr G., 1 Transvaal Girdled Lizard
 Hamylton-Jones, Mr K., 2 Trumpeter Hornbills
 Harman, Alan, *Ctenomorphodes tessulatus*
 Harmsworth, Mr G., 2 Green Cardinals
 Harris, Mr, 1 Tokay, 1 General Hardwicke's Dabb Lizard
 Haylett, Mr, 1 Robust Plated Lizard, 1 Lord Derby's Zonure, 1 Bell's Dabb Lizard, 2 Iguanas
 Heath, Mr G., 2 Praying Mantis
 Hillier, Mr, 1 Nepal Hill Mynah
 Hillis, Mr D., 1 Red-eared Terrapin
 Hitchens, Mr A., 1 Bull Snake
 Hobden, Mrs, 2 Mediterranean Spur-thighed Tortoises
 Hodges, Mr, 1 Crab Spider
 Hogarth, Mrs, Stick Insects
 Howell, Mr, 1 Grouper, 1 Batfish
 Howell, Mr J., 1 European Whip-snake

- Hurley, Mrs, 1 Mediterranean Spur-thighed Tortoise
 Iles, Derek, 2 Red-eared Terrapins
 Ireland, Mr R. S., 1 Gourami
 Jones, Mrs, 3 Slow Loris
 Kentish Town Police Station, 1 American Rat Snake
 King, Mr, 1 Boa Constrictor
 Knyte, Mr J., 1 Red-eared Terrapin
 Lawson, Mr, RSPCA, 1 California King Snake
 Lenguel, Mark, 2 Iguanas
 London, D., 1 Albino Clarias
 Low, Mr A., Bird-wing Butterflies, Swallow-tail Butterfly
 Lowe, Phillippa, Stick Insects
 Macfarlane, Robert, 1 Leopard Gecko
 Maiden School, *Galeodes arabs*
 Malcomson, D., 1 Indian Rock Python
 Mander, W. J., 1 Iguana, 1 Bibron's Gecko, 1 Wahlberg's Gecko, 1 Green Lizard
 Marlow, Mr G., 2 Snakeheads
 Marr, Mr, 2 Eyed Lizards
 Martin, Mrs, 2 Red-eared Terrapins
 Martin, Dr R., 2 Brown Mouse Lemurs, 2 Red Mouse Lemurs
 Martyn, Mrs, 2 Slow Loris
 Mathews, Mr M., 1 Red-eared Terrapin
 Matthews, Adrian, 1 Royal Python
 Mawby, Mr, 2 African Bull Frogs
 Medical Officer of Health, Port of London, 1 Gecko
 Mellow, P, Silkmoth larvae
 Mills, Nicholas, 1 Javelin Sand-boa
 Moore, Mrs, 1 Tree Locust
 Morris, Mr and Mrs, 1 White-crested Cockatoo
 Murphy, Mr and Mrs J., 2 Orb Spiders, 1 Spider *Eresus* sp.
 National Trust, 2 Rothschild's Grackles
 New University of Ulster, Northern Ireland, 2 Short-headed Flying Phalangiers
 Newmark, G. and J., 10 Agamas, 2 Geckos, 1 Skink, 4 African Toads, 1 Crowned River Frog, 1 Cockchafer [Beetle, 1 Rhinoceros Beetle, 1 *Cetonia* sp.
 Newman, Mr D., 1 Puff Adder
 Newman, Mr R. F., 1 Bird-eating Spider
 Newsome, Mrs M., 1 Mediterranean Spur-thighed Tortoise
 de Normann, Mrs, Stick Insects
 Oughton, Mr D. J., Stick Insects
 Parsons, Miss C., 1 Mediterranean Spur-thighed Tortoise
 Partridge, Mr, 4 Mediterranean Spur-thighed Tortoises
 Paul, Mr, 1 Indian Rock Python
 PDSA, Berks., 1 Agama
 Perry, Mr A., 2 Ruppell's Parrots, 1 Shama
 Pettifer, Mr, 1 Boa Constrictor
 Pitman, Captain, 1 *Psammophis pulcher*, 3 Carpet Vipers
 Preston-Jones, Mr G. W., 1 Red-eared Terrapin
 Pritt, Mr, 1 Spanish Terrapin
 Raw, Mr and Mrs P. A., 1 Chattering Lory
 Raymond, Mr, 1 Spanish Terrapin
 Reid, Mr L. R., 2 Mediterranean Spur-thighed Tortoises
 Riva, Mr D., 1 Iguana
 Robinson, Dr K. J., 30 Deer Mice
 Robinson, Miss S., Twyford Laboratories, 6 Pope's Pit Vipers, 1 Wagler's Pit Viper, 5 Gray's Pit Vipers, 3 Indian Cobras, 1 Pygmy Rattlesnake
 Rodway, Mr P., 4 Bank Voles
 Rohr, Mrs E., 2 Mediterranean Spur-thighed Tortoises
 Rolfe, Mr, 1 Marine Turtle
 Romer, Mr J. D., 1 Papuan Tree Python
 Rose, Mr D. J., 1 Piranha
 RSPCA, Potters Bar, 1 Blue-crowned Pigeon
 RSPCA, 1 Manx Shearwater
 Salmon, Mr R., 2 Paradise Whydahs
 Samuels, Mr D., 3 Chinese Painted Quails, 2 Red-headed Finches, 2 Red-headed Buntings
 Scott, Mr, 1 Mediterranean Spur-thighed Tortoise
 Secretan, Mrs, 1 European Pond Tortoise
 Selwyn, Stephen, 1 Murray River Tortoise
 Sharp, Miss J., 2 Red-eared Terrapins
 Shore Properties, 1 California King Snake
 Simpson, Mr J. F., 1 Oscar, 13 *Barbus Arulius*
 Smith, Allister, 1 Heliconid Butterfly
 Société Royale de Zoologie d'Anvers, Antwerp, 2 Pudu
 Sore, Ronald, 1 Bird-eating Spider
 Spencer-Morris, Mrs, 1 Ornate Terrapin
 Spurling, Miss C., Stick Insects Ova
 Stevens, M., 1 Butterfly
 Stevens, Mrs, 1 Hermann's Tortoise
 Stuart, Brian, 1 Field Cricket
 Sutherland, Martin, 1 Green Lizard
 Swift, Mr, 1 Mediterranean Spur-thighed Tortoise
 Taylor, Mr O. B., 1 Stag Beetle
 Taylor, Robert and Mark, 3 Spanish Terrapins
 Thorne, Mr N. G., Stag Beetle and larvae
 Thorogood, Miss June, 1 Boa Constrictor
 Todd, Mr, 1 Mediterranean Spur-thighed Tortoise
 Trumper, Mr P. M., 1 Yellow Monitor
 Vincent, Mr J. H., 1 Red-eared Terrapin
 Von Hase, Angelika, 2 Kuhl's Tortoises
 Ward, Mrs, 2 Red-eared Terrapins
 Wardle-Smith, Mr J., 1 Mediterranean Spur-thighed Tortoise
 Warr, Mrs, 1 Chuckwalla, 1 Skink

Warrell, Dr, 1 Smyth's Water Snake, 1 Black-necked Cobra, 1 Saw-scaled Viper, 1 *Coluber* sp., 1 *Causus maculatus*
Watson, Mr, 1 Royal Python
Watts, Miss, 1 Fat Dormouse
Webster, Mr G., 2 Five-lined Skinks
Westcott, Mr W., 1 Jackson's Chameleon
Whittaker, Mr N., RSPCA, Heathrow Airport,
1 Royal Python, 1 Bull Snake, 2 Ornate Tree Snakes, 2 Bengal Monitors, 1 Tokay, 18 Marsh Frogs, 10 Snakeheads, 30 Swimming Crabs

Woolett, Mr G. J., 1 Batfish
Wright, Mrs, 1 Red-eared Terrapin

WHIPSNADE PARK

Loud, Mr T., 1 Alexandrine Parrakeet
Peking Zoological Gardens, 2 Manchurian Cranes,
2 White-naped Cranes

DONATIONS TO THE ZOOLOGICAL RECORD FUND

	£
American Ornithologists' Union	40.82
American Society of Ichthyologists and Herpetologists (Vol 108)	201.74
(Vol 109)	206.22
C. H. Benbow	10.00
British Museum (Natural History)	1,450.00
Conchological Society of Great Britain & Ireland	2.00
Entomological Society of Alberta	4.40
Malacological Society of London	2.10
Michigan, University of	38.39
Paleontological Society	41.76
Royal Entomological Society (Vol 107)	2.50
(Vol 108)	10.00
Society of Systematic Zoology	120.17
	<hr/>
	£2,130.10
	<hr/>

BOOKS PRESENTED TO THE LIBRARY

- BOORER, M.
 BRITISH MUSEUM (NATURAL HISTORY), TRUSTEES OF
 CANSDALE, G. S.
 CLOUDSLEY-THOMPSON, PROFESSOR J. L.
 EASTERBROOK, M. S.
 HORNIMAN MUSEUM & LIBRARY
 INMAN, E. A.
 IUCN
 JOSLIN, P.
 LANE, F.
 MALMÖ MUSEUM
 NATIONAL MUSEUM OF WALES
 PILLERI, G.
 RIDDETT, P.
 SHINGLER, MR & MRS
 TIME-LIFE BOOKS
 WEIR, DR B.
 WILLIS, D.
 WOOD, G.
 ZUCKERMAN, LORD
- Are animals different? By Z. Veselovsky. 1973.
 Forest life. By M. Boorer. 1973.
 Bulletin of the British Museum (Natural History). Entomology: Vol. 27, nos. 6-8; Vol. 28, no. 2; Suppl. 19; Geology: Vol. 22, nos. 1-8; Vol. 23, nos. 1-2; Zoology: Vol. 23, nos. 5, 9-11; Vol. 24, nos. 1-8; Vol. 25, nos. 1, 3-7; Suppl. 4.
 A list of scientific and vernacular names of the fauna of Ghana. By G. S. Cansdale. 1971.
 Microecology. By J. L. Cloudsley-Thompson. 1967.
 The temperature and water relations of reptiles. By J. L. Cloudsley-Thompson. 1973.
 A book of East African snakes. By M. S. Easterbrook. [1973].
 Defences of animals. 1973.
 Tropical aquaria. 1973.
 Life at the Zoo. By C. J. Cornish. 1897.
 Mysteries of the Zoo. By H. M. Sidebotham. 1927.
 Ecological principles for economic development. By R. F. Dasmann, J. P. Milton, P. H. Freeman. 1973.
 A picture book of Sikkim birds. By Sálim Ali. 1960.
 An eye for a bird. By E. Hosking & F. Lane. 1973.
 Natur och miljö kring Malmöhus. Ed. by E. Hansen-Melander. 1972.
 Eggs of British birds. By C. Matheson & J. A. Bateman. 1973.
 Investigations on Cetacea. Vols. 1-4. Ed. by G. Pilleri. 1972.
 Observations on the ear, nose, throat and eye of *Platanista indi*. By P. E. Purves & G. Pilleri. 1973.
 Evolution and modification of behavior. By K. Lorenz. 1966.
 Birds of Guatemala. By H. C. Land. 1970.
 The birds of the Department of Lima, Peru. By M. Koepcke. 1970.
 Finches. By I. Newton. 1972.
 The parrots of South America. By R. Low. 1972.
 The Amazon. By T. Sterling & the editors of Time-Life Books. 1973.
 The life-cycle of the malaria parasite (*Plasmodium vivax*). Literature survey of the common fauna of estuaries. Vols. 1-17. By E. Clay. 1967.
 The Guinness book of animal facts and feats. By G. L. Wood. 1972.
 The Guinness book of records. 20th ed. Ed. by N. & R. McWhirter. 1973.
 Gray's Anatomy, descriptive and applied. 32nd ed. Ed. by T. B. Johnston, D. V. Davies & F. Davies. 1958.
 Cunningham's Text-book of anatomy. 9th ed. Ed. by J. C. Brash. 1951.

Meetings during 1974

Scientific Meetings at 5.00 pm

Tuesday, 12th February

Tuesday, 12th March

Tuesday, 9th April

Tuesday, 14th May

Tuesday, 11th June

Tuesday, 8th October

Tuesday, 12th November

Tuesday, 10th December

Symposia

Thursday and Friday, 17th–18th January: 'Protochordates'.

Thursday and Friday, 21st–22nd March: 'Sound reception in mammals'. (In association with the British Society of Audiology.)

Report of the Auditors

on the accounts of The Zoological Society of London

In accordance with the provisions of Byelaw 33 we report that we have examined the Books and Accounts of the Society for the year ended 31st December 1973, including those relating to the Ford Research Fund, and have found them to be in order. Having received all the information and explanations we have required, we are of the opinion that the attached Balance Sheets, the accompanying Income and Expenditure Accounts and Notes show a true and fair view of the position as shown by the books of the Society. We have verified the Investments and the Cash Balances.

NORTON KEEN & CO *Chartered Accountants*
Knightway House, 20 Soho Square, London, W1V 6QJ
25th February 1974

Balance Sheet at 31st December 1973

1972				
£	£		£	£
	154,202	Sundry creditors and receipts in advance		205,436
	161,851	Bank overdraft		87,126
	91	Heer Bequest		91
	5,201	Fantham Bequest (note 1)		5,582
	14,879	Nuffield Institute Fund (note 2)		14,576
	21,080	Special Scientific Fund (note 3)		22,080
	68,189	Wolfson Donation Fund (note 4)		12,131
		Publications Funds (note 5)		
20,366		Zoological Record Fund	15,593	
12,914		Neave Lloyd Fund	11,493	
<u> </u>	33,280		<u> </u>	27,086
	16,508	Composition Fund		16,383
	1,125	Staff Benevolent Fund (note 6)		1,091
		Reserves		
125,030		General Reserve (note 7)	129,536	
327,679		Buildings Replacement Fund (note 8)	287,001	
100,000		Pensions Contributions Reserve	100,000	
—		Depreciation of Investments Reserve	50,000	
<u> </u>	552,709		<u> </u>	566,537
	128,263	General Purposes Account		128,263
	<u>£1,157,378</u>			<u>£1,086,382</u>

For the notes which form part of these accounts see pages 61 and 62.

Income and Expenditure Account for the year ended 31st December 1973

1972	INCOME	£	£
£		£	£
30,588	Members' subscriptions and entrance fees	31,430	
5,175	<i>Less</i> transferred to publications	5,018	
25,413		26,412	
	Interest and dividends		
13,236	General (after allocation to funds)	21,144	
5,120	Net income from De Arroyave Fund (note 11)	5,715	
57	Income from Davis Fund (note 12)	57	
18,413		26,916	
	<i>Scientific</i>		
30,837	Sale of scientific publications	27,213	
12,676	Educational scheme - visits	13,273	
2,433	Young Zoologists' Club	2,463	
15,921	International Zoo Yearbook	16,522	
61,867		59,471	
	<i>Regent's Park</i>		
766,372	Admission of visitors to Gardens	889,858	
41,262	Admission of visitors to Aquarium	48,648	
25,640	Admission of visitors to Children's Zoo	21,071	
1,615	Chimpanzees' tea party	-	
4,636	Riding receipts	5,120	
3,163	Push chairs, hire of	3,755	
80,524	Catering and other services, net income	81,870	
21,984	Zoo Restaurants Ltd.	24,450	
1,711	Television and film permits	2,024	
1,689	Animals	2,567	
10,547	Miscellaneous receipts	9,048	
959,143		1,088,411	
	<i>Whipsnade</i>		
192,777	Admission of visitors to Park	232,049	
11,854	Admission of visitors to Children's Zoo	11,412	
-	Admission of visitors to Marine Mammals Exhibit	10,534	
42,768	Admission of cars to Park	48,076	
3,212	Train receipts	2,961	
3,305	Riding receipts	3,724	
443	Push chairs, hire of	633	
9,248	Car parks - parking fees	12,271	
457	Farm, gardens and forestry sales	419	
9,929	Animals	11,774	
17,607	Catering and other services, net income	26,300	
1,154	Miscellaneous receipts	2,511	
292,754		362,664	
£1,357,590		£1,563,874	

For the notes which form part of these accounts see pages 61 and 62.

1972		EXPENDITURE	£	£	£
£	£	General administration			105,318
	98,376	Contribution to Buildings Replacement Fund			26,000
	26,000	Interest on overdraft			4,894
	10,982	<i>Pensions</i>			
8,774		Payments to pensioners		7,642	
42,777		Contribution to Trustees of Pension Fund		46,049	
<u> </u>	51,551			<u> </u>	53,691
		<i>Scientific</i>			
27,695		General scientific	28,226		
20,191		Wellcome Institute	20,156		
70,006		Nuffield Institute	78,936		
			<u> </u>	127,318	
20,850		Library		22,922	
26,076		Scientific publications		21,867	
13,886		Educational scheme		15,209	
5,006		Young Zoologists' Club		5,292	
14,994		International Zoo Yearbook		16,298	
<u> </u>	198,704			<u> </u>	208,906
		<i>Regent's Park</i>			
		Menagerie			
7,871		Rates and insurance	9,634		
314,816		Salaries	349,110		
66,392		Provisions	83,821		
59,217		Fuel, light, water, transport	62,905		
34,787		Miscellaneous	33,480		
			<u> </u>	538,950	
		Works			
97,396		General maintenance	129,925		
9,065		Alterations	4,883		
			<u> </u>	134,808	
23,728		Gardening		26,420	
41,169		Advertising		40,246	
8,914		Purchase of animals		7,500	
<u> </u>	663,355			<u> </u>	747,924
		<i>Whipsnade</i>			
		Menagerie			
8,090		Rates and insurance	6,631		
129,630		Salaries	149,257		
43,164		Provisions	50,486		
16,007		Fuel, light, water, transport (note 13)	43,715		
18,271		Miscellaneous	19,493		
			<u> </u>	269,582	
		Works			
38,124		General maintenance	40,020		
3,808		Alterations	5,622		
			<u> </u>	45,642	
13,082		Farm, gardens and forestry		15,407	
18,938		Advertising		23,321	
8,782		Purchase of animals		7,775	
<u> </u>	297,896			<u> </u>	361,727
		Surplus for the year (note 14)			55,414
	10,726				<u> </u>
	<u>£1,357,590</u>				<u>£1,563,874</u>

Wellcome Institute of Comparative Physiology

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER 1973

	£	£		£	£
Ford Research Fund – interest and dividends		16,881	Salaries (including pension contributions)		33,696
Research funds transferred from Birmingham University		10,573	Laboratory and other scientific expenses		6,382
Society's contribution		20,156	Administrative charges		2,162
Miscellaneous income		600	Heating, lighting and miscellaneous		5,220
			Transfer – Equipment Fund		750
		<u>48,210</u>			<u>48,210</u>
			Expenditure from project grants:		
Project grants		763	Salaries	551	
		<u>£48,973</u>	Scientific expenses	212	
				<u>763</u>	
				<u>£48,973</u>	

BALANCE SHEET AT 31st DECEMBER 1973

Sundry creditors and receipts in advance		453	Sundry debtors and payments in advance		2,637
Capital Account (Ford Research Fund):			Investments at cost (market value £233,424)		257,246
Balance 1st Jan. 1973	237,527				
Add Profit on investments	19,810				
	<u>257,337</u>				
Equipment Fund:					
Balance 1st Jan. 1973	2,670				
Add Transfer	750				
	<u>3,420</u>				
Less Maintenance and renewals	1,327				
	<u>2,093</u>				
		<u>£259,883</u>			<u>£259,883</u>

Notes on the Accounts

31st December 1973

1. Fantham Bequest		£	£	
	Balance at 1st January 1973		5,201	
	Investment income		501	
			<u>5,702</u>	
	Less: Expenditure		120	
	Balance at 31st December 1973		<u>£5,582</u>	
<hr/>				
2. Nuffield Institute Fund	Balance at 1st January 1973		14,879	
	Donations and Grants		109,897	
	Society's contribution		78,936	
			<u>203,712</u>	
	Less: Salaries (including pension contributions)	131,137		
	Scientific expenses	40,877		
Other expenses	17,122			
			<u>189,136</u>	
	Balance at 31st December 1973		<u>£14,576</u>	
<hr/>				
3. Special Scientific Fund	Balance at 1st January 1973		21,080	
	Donation		1,000	
	Balance at 31st December 1973		<u>£22,080</u>	
<hr/>				
4. Wolfson Donation Fund	Balance at 1st January 1973		68,189	
	Investment income		1,130	
			<u>69,319</u>	
	Less: Expenditure		57,188	
	Balance at 31st December 1973		<u>£12,131</u>	
<hr/>				
5. Publications Funds		<i>Zoological Record Fund</i>	<i>Neave Lloyd Fund (Nomenclator Zoologicus)</i>	
	Balance at 1st January 1973	20,366	12,914	
	Sales and donations	107,178	672	
	Investment income	1,018	646	
		<u>128,562</u>	<u>14,232</u>	
	Less: Publication and distribution costs	112,969	2,739	
	Balance at 31st December 1973	<u>£15,593</u>	<u>£11,493</u>	
<hr/>				
6. Staff Benevolent Fund	Balance at 1st January 1973		1,125	
	Investment income		56	
			<u>1,181</u>	
	Less: Grants		90	
	Balance at 31st December 1973		<u>£1,091</u>	
<hr/>				
7. General Reserve Fund	Balance at 1st January 1973		125,030	
	Fees of deceased compounders (from Composition Fund)		525	
	Net profit on sale of investments		2,835	
	Received from Association of British Zoologists		1,146	
	Balance at 31st December 1973		<u>£129,536</u>	
<hr/>				
8. Buildings Replacement Fund	Balance at 1st January 1973		327,679	
	Investment income		16,384	
	Income and Expenditure Account:			
	Contribution		26,000	
	Appropriation from surplus for the year		6,220	
			<u>376,283</u>	
	Less: Expenditure	2,028		
	Transfers - Rebuilding Account	37,254		
	Investments Depreciation Reserve	50,000		
				<u>89,282</u>
	Balance at 31st December 1973		<u>£287,001</u>	

9. Stocks	No values are included in the Balance Sheet for:		
	a. Animals	c. Plant, vehicles, fittings and furniture	
	b. Library books and pictures	d. Farm and garden stocks	
<hr/>			
10. Rebuilding Account	Balance at 1st January 1973		111,862 Dr
	New works		168,425
			<hr/>
			280,287 Dr
	<i>Less:</i> Transfer from Buildings Replacement Fund	37,254	
	Donations and Grants (received or due):		
	H.M. Government	131,171	
	Miscellaneous	4,152	
		<hr/>	
			172,577
	Balance at 31st December 1973		<hr/>
			£107,710 Dr
<hr/>			
11. De Arroyave Fund	The capital of the De Arroyave Fund is held by the Official Custodian for Charities. The income from the Fund was £5,725, from which £10 was spent on the upkeep of the Lopes grave and mausoleum, in accordance with the terms of the Trust.		
<hr/>			
12. Davis Fund	The capital of the Davis Fund is held in trust by the Society, but is not included in the Balance Sheet.		
<hr/>			
13. Whipsnade Menagerie	The expenditure under fuel, light, water, transport includes an exceptional item of £19,091 for the replacement of the road trains.		
<hr/>			
14. Income and Expenditure Account surplus	The surplus for the year 1973 has been appropriated as follows:		
	Income and Expenditure Account deficit at 1st January 1973		49,194
	Buildings Replacement Fund		6,220
			<hr/>
			£55,414
			<hr/>



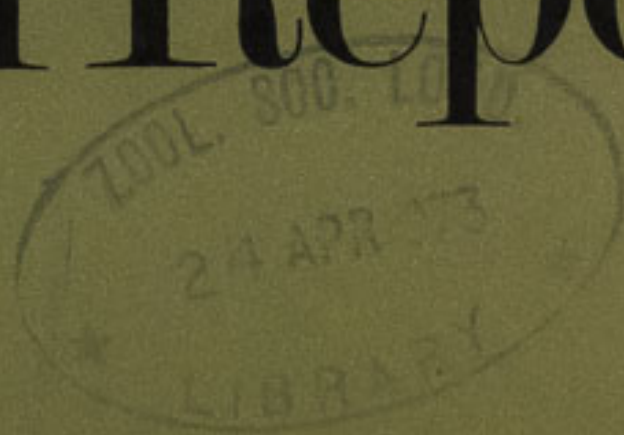
The Zoological
Society
of London
Annual Report
1970



The Zoological
Society
of London
Annual Report
1971



The Zoological
Society
of London
Annual Report
1972





The Zoological
Society
of London
Annual Report
1973

