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ZOOLOGICAL SOCIETY OF LONDON



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THE ZOOLOGICAL SOCIETY OF LONDON

# Annual Report 1974

ZOOLOGICAL SOCIETY OF LONDON



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 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 148 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 146th Annual Report to the Annual General Meeting of the Society to be held on Wednesday 7th May 1975 at 4.00 pm in the Society's Meeting Room at Regent's Park



THE ZOOLOGICAL SOCIETY OF LONDON

PATRON: HER MAJESTY THE QUEEN

COUNCIL 1974-1975

*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

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

R. Romilly Fedden, CBE

Sir Dudley Forwood, Bt

Francis C. Fraser, CBE, DSc, FRS

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

Professor Richard J. Harrison, MD, FRS

The Viscount Head, GCMG, CBE, MC, *Vice-President*

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

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

R. V. Short, ScD, FRS

C. E. Gordon Smith, CB, MD, FRCP, FRCPath, *Vice-President*

J. Eric Smith, CBE, ScD, FRS

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

The Duke of Wellington, MVO, OBE, MC

Woodrow L. Wyatt, *Vice-President*

## HONORARY FELLOWS

*Date of Election*

- 1971 His Majesty Emperor Hirohito of Japan
- 1974 Professor Jean G. Baer  
Professor of Zoology and Comparative Anatomy, Zoological Institute, University  
of Neuchâtel, Neuchâtel, Switzerland
- 1952 Professor J. Berlioz  
Muséum National d'Histoire Naturelle,  
Jardin des Plantes, 57 rue Cuvier, Paris 5, 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 Courrier  
L'Institut de France (Académie des Sciences), 23 Quai de Conti,  
Paris 6, 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
- 1974 Mr Roger Tory Peterson  
Route 4, Box 131 Neck Road, Old Lyme, Connecticut, 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



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# The Membership

## Council

The President, HRH The Duke of Edinburgh, presided at the Annual General Meeting which was held on 22nd May. The following Members of Council retired: Mr Aubrey Buxton, Lord Donaldson, The Hon. Ivor Montagu, Lord Strathalmond, Dr C. A. Wright.

The Fellows elected to fill these vacancies were: The Viscount Head, The Duke of Wellington (Ordinary Fellows), Dr Francis C. Fraser, Professor Richard J. Harrison, Dr R. V. Short (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 *Mr G. H. Locket* in recognition of his outstanding contributions to arachnology. The award was a sculpture in bronze, *Egret*, by Mr David Wynne.

**The Scientific Medal** (awarded to persons under 40 years of age for distinguished work in zoology) to *Dr J. N. Brady*, Imperial College of Science and Technology, for his work on ecology, physiology and pure and applied entomology; and to *Professor H. C. Macgregor*, University of Leicester, for his work on cell and molecular biology.

**The Thomas Henry Huxley Award** (for original work submitted as a doctoral thesis) to *Dr Patricia Farquharson*, Westfield College, London, for her thesis 'The function and microstructure of the Malpighian tubules in *Glomeris marginata* (V)'. The award was a sculpture in bronze, *Seals*, by Mr David Wynne.

**The Prince Philip Medal** (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) to *S. J. Leach*, Leighton Park School, Reading, for his essay 'Communal roosting in the House sparrow'.

**The Zoological Society of London Frink Medal for British Zoologists** (awarded for contributions to zoology) to *Sir Julian Huxley* in recognition of his contribution to zoological science and his influence in stimulating the work of others in many diverse fields of biology.

HRH The Duke of Edinburgh also presented the Society's Silver Medal to *Professor A. J. E. Cave*, who has been a Fellow since 1926, for his outstanding services to the Society.

## Roll of Members

In recognition of their contributions to the zoological sciences Professor Jean Baer, Professor of Zoology and Comparative Anatomy at the University of Neuchâtel, Switzerland, and Mr Roger Tory Peterson of Connecticut, USA, were elected Honorary Fellows of the Society.

At the end of the year there were 2,828 Fellows and 2,822 Associates.

## Obituary

The Council records with deep regret the deaths of Professor H. R. Hewer, a Scientific Fellow who had served on many committees, Sir Francis Knowles and Professor Sir Charles Dodds, both Scientific Fellows, Mrs Floretta Lucas who had been a Fellow for 79 years, and Dr R. C. Murphy, an Honorary Fellow since 1952.



# Finance

During the year operating expenditure rose 16 per cent to £1,743,700. Only by careful control of costs were we able to keep the increase below the general rise in the cost of living, as measured by the Retail Price Index.

The largest increases were in the bill for salaries and wages, in the cost of animal food and fuel, and in other charges such as interest payments. Nationally agreed salary and wage awards in the appropriate public services are, by long standing agreement, applied to the Society's staff, and the increases in basic wages, the payment of threshold supplements, increases in London weighting allowances and higher Social Security contributions, added some 18 per cent to salary and wage costs. The cost of animal foodstuffs rose by nearly 12 per cent at Regent's Park, and about 44 per cent at Whipsnade, due largely to the spiralling prices of hay, fish and meat.

The greater part of the money to meet all operating costs, excluding that part of the research programme which is met from grants, is derived from the income received from admission charges. As with most other public exhibitions, the attendances at Regent's Park were somewhat lower in 1974 than in 1973, and considerably lower at Whipsnade. Fluctuations in the number of visitors from year to year are bound to occur and, for the most part, are due to factors beyond our control. Weather always plays a dominant role, and the wet, almost sunless, summer months were probably a major cause of the fall in attendances. The figures at Regent's Park improved dramatically after the arrival of the Giant Pandas in mid-September. Admission charges were increased in order to keep pace with rising costs, but the substantially reduced concessionary prices for organized parties, old age pensioners and students were maintained. Total income rose by £121,000, and there was a deficit of £59,000 on the year's working.

With the prospect of further inflation in 1975, the Council decided that the level of current expenditure had to be reduced. This decision entailed a reduction in numbers of staff, which was largely achieved by normal wastage and redeployment. Unfortunately, however, a few people had to be made redundant at the end of the year.

In addition, economies have been made wherever possible in the budgets for maintenance of buildings and amenities; some planned improvements will also be deferred.

In spite of these economies it is hoped that there will be no fall in the high standards of management of the Collections. Here it is necessary to refer to some distorted reports which appeared in the Press in December, stating that animals, including rare animals, were being or might be killed because of high feeding costs. This is quite incorrect. The cost of foodstuffs is only one, and only a relatively minor, factor in determining the optimum size of the herds maintained in the Society's Collections.

As has been frequently reported, 80 per cent of the mammals at Whipsnade were born there. With such a high rate of breeding many herds, particularly of deer, become too large, and regular culling of animals is necessary to ensure the maintenance of vigorous and healthy stock, and continued breeding. Surplus animals are first offered to other zoological collections. Herds of rare species are never culled.

## Capital Expenditure

The amount spent on capital works was £292,000 and the various projects which are now in hand are described in the sections which follow. By far the most important are the new quarters and enclosures for Lions, Tigers and other big cat species, the building of which was started in August. A photograph of the model is shown facing page 24.

The major part of the cost will be met from the capital grant made by the Government in 1970, but we were able to embark on the building of the project as a whole only through the generosity of Sir Charles Clore, who made a further and most munificent gift of £200,000 towards the rebuilding at Regent's Park, as a result of which the balance became available. Without Sir Charles's help we would not have been able to go ahead with this imaginative and exciting development which will transform the south-eastern part of the Gardens. This is the second major gift he has made to the Society. In 1966 he gave £200,000 which enabled us to build the Pavilion for Small Mammals. The Council is most grateful to Sir Charles for his continued interest and magnificent support.

The Council also gratefully acknowledges a number of other gifts, including £1,000 from Mr Whitney Straight, and £250 from Sir Gawaine Baillie.



# The London Zoo

Visitors during the year 1,958,000  
Visitors to the Children's Zoo 277,000  
Visitors to the Aquarium 522,000

## The Giant Pandas: 'Ching-Ching' and 'Chia-Chia'

The Chinese Government used the occasion of the Rt. Hon. Edward Heath's visit to China in June to announce that it was making a gift of two Giant Pandas to the British people. Both Pandas were about two years old and had been together in Peking Zoo for twelve months. These very rare animals arrived in London on 14th September and the Society was delighted to accept responsibility for their custody.

We had only two months to make the necessary arrangements, and are most grateful for the help we received from many people, in particular the Foreign and Commonwealth Office and the Chinese Embassy. British Airways kindly made the arrangements for transport, which entailed having one of their aircraft on the regular freight service to Hong Kong fly on to Peking and back again as a special charter flight. In order that the animals would not have to travel in the heat of the day, the return schedule to London was altered so that the flight across India and the Persian Gulf took place at night.

The Curator of Mammals, the Veterinary Officer and the Head Keeper of the Primate Section went to Peking to escort the Pandas to Britain, and three Chinese officials from the Peking Zoo returned with them and stayed for two weeks.

As new accommodation could not be provided in the time that was available, it was decided to use the north block of the Michael Sobell Pavilions, at least during the six months' period when the animals had to be in quarantine, in accordance with the terms of the Rabies (Importation of Mammals) Order 1971. This block had already been approved for the quarantining of primates and was easily adapted for the Pandas, only a few modifications to the outside enclosure and indoor dens being necessary.

The animals were in such good condition when they arrived that it was possible to let them into the public enclosure on the following day.

On 23rd October, the animals were formally presented to the President, HRH The Duke of Edinburgh, by the Chinese Ambassador, Mr Sung Chih-kuang, at a brief ceremony, at which Mr Heath, Lord Goronwy-Roberts, Parliamentary Under Secretary of State for Foreign and Commonwealth Affairs, and many other guests were present.

The Pandas have been in good health since they arrived, are easily manageable and are a wonderful exhibit. The accommodation has turned out to be not only entirely satisfactory for quarantine purposes, but temporarily adequate for exhibition. The young Pandas have made the most of the climbing frame roof over the enclosure to show their remarkable agility and have delighted the vast crowds which have come to see them.

The reaction of the British people, the Press and the Television networks has demonstrated the very great public interest in these animals. As a mark of the gratitude of the British people, the Society has sent to Peking Zoo a pair of young White Rhinoceroses, both born in Britain. They arrived safely in Peking on 12th December and were formally handed over to the Peking Zoo by the British Ambassador on 18th December.

The arrival of the Rhinoceroses in Peking marked the end of a year of close cooperation between the Society and Peking Zoo, with exchanges of Père David's Deer, Giant Pandas and Rhinoceroses. This cooperation between the Society and Chinese zoological institutions is warmly welcomed.

## General Developments

The new exhibit for Lions, Tigers, Leopards, Cheetahs and other big cat species, which has been mentioned earlier, was designed by the Architect's Department. The lay-out follows the same principles that have proved so successful in the Pavilions for Apes and Monkeys, with large outside enclosures for the animals and covered walkways for the public, against a background of trees and planted areas. The main contractors are J. Jarvis and Sons Ltd, who built the Pavilion Building and the Aquarium in the 1920's.



They have made excellent progress, and we have every hope that the Exhibit will be formally opened in the Spring of 1976, when the Society celebrates the 150th Anniversary of its foundation.

The new Education Centre and the Inner London Education Authority's Teachers' Centre, which are being built on the North Bank of the Canal, will be completed in the middle of 1975.

The Michael Sobell Pavilions for Apes and Monkeys received a commendation in the Civic Trust Awards for 1973, as well as a commendation in The Structural Steel Design Awards Scheme for 1974. Describing the architectural merits of the Pavilions, the Civic Trust commented particularly on the interweaving of the landscaping within the enclosures, which is one of the very striking features of this exhibit.

Other items of development were carried out by the Works Department and contractors, under the direction of the Architect. The most important was in the Children's Zoo, where a farm demonstration area, new staff quarters and a new entrance are being built. In the Bird House, new indoor aviaries for small birds have been built and all the old cages repainted. Neither project was completely finished by the end of the year because of other heavy demands on the resources of the Works Department, particularly in coping with repairs to the underground water and heating mains.

In the first few months of the year, the gas supply to the Gardens was converted to natural gas. In the summer the two central boilers of the main heating system were overhauled and converted to operate automatically, and to run on a more economical fuel oil or with natural gas. The water supply was connected to new mains outside the Gardens.

The experimental programme of pest control started in 1973 proved satisfactory and an agreement with Rentokil Ltd for permanent control has been made.

## The Collection

**Mammal Section** In the Clore Pavilion the most exciting birth was a pair of Ruffed Lemurs to the female which was born in the Zoo two years ago. Two groups of Australian rodents arrived during the year, Brown Hopping Mice and Minnie Downs River Rats, representing two rather different branches of murid radiation in that continent. There is also a group of four Slender Lorises from southern India, and a pair of Indian Tree Shrews which have now given birth to two young. This particular form was last kept in captivity in Calcutta towards the end of the last century, and is usually classed as *Anathana ellioti*. The animal is, however, probably no more than a local variant of the Common Tree Shrew *Tupaia glis*. Three Bruijn's Echidnas, a pair of Spiny Bandicoots and a group of Striped Long-fingered Possums were received from New Guinea.

The female White Rhinoceros in the Elephant and Rhino Pavilion was sent to Whipsnade to be mated and is due to return in 1975. Her place was taken by the older female Indian Rhinoceros from Whipsnade. In the nearby Sealion Pond, two sealions were born, one of which, a female, has been successfully reared.

On the Cotton Terraces, five Scimitar-horn Oryx from Marwell Park arrived on 5th February. They will be sent to Whipsnade in the spring of 1975, but it is hoped to set up a permanent herd of this species at Regent's Park in the near future. Among the many births on the Cotton Terraces were a Giraffe, a Przewalski's Horse and a Greater Kudu.

The excellent record of breeding among the animals on the Mappin Terraces continued. This has been so consistently good that very soon there may be more animals for disposal, even of rare species, than can be absorbed, either here or in other Collections. One solution would be to stop breeding for a time, but the animals in these groups might then become too old to breed when young replacement stock become necessary. It is wiser to allow breeding to continue, and by judicious culling maintain young and viable stocks.

Two Orang-utans were born in the Michael Sobell Pavilions for Apes and Monkeys, one to the female 'Bulu', who was born at Regent's Park in 1961. Since 1967, when the



group of nine Orang-utans arrived as a gift from the Government of Hong Kong, five young have been successfully reared, and we can now dispose of some of the animals while still maintaining the breeding potential of the group. One pair has been sent to Vienna Zoo to help establish a group, and another animal has been deposited with Twycross Zoo to make up a breeding pair. Provided the stock are transferred only to establishments which can house and care for them properly, breeding should continue and there should eventually be no further need for animals caught in the wild.

One notable birth in these Pavilions was that of the Chimpanzee born to 'Abena', 19 years after her last baby, and at an estimated age of 29 years. 'Abena' was in the old Monkey House with the male 'Dick', which died in 1972, when she was introduced into the established breeding group. She had been expected to act as an aged 'auntie' to the rest of the group, and this birth came as a great surprise. Other important breeding successes were a Mandrill, a Gelada Baboon and a Ring-tailed Lemur.

**Bird Section** The successful rearing of a Jackson's Hornbill was one of the notable events of the year. The breeding behaviour of this species is most interesting. After the eggs are laid the female is walled in by the male, and only a slit left through which food can be passed. While in the hole the bird undergoes an extensive moult, shedding her flight and tail feathers. After an unsuccessful first attempt when the female spent 72 days inside the nesting box, she was again walled in by the male in August and remained there for a further 68 days - a total of 140 days incarceration in one year. In November, 48 days after hatching and 10 days after the parent bird left the box, a healthy young bird emerged.

Other breeding successes include a Blue-backed Manakin, an Oystercatcher, 3 Scops Owls, Knysna Turacos (second generation) and an Imperial Pheasant. Owls have been less successful than is usual as a number of our breeding birds died of old age. The Snowy Owls, however, again produced four young, making a total of 18 in the last five years.

Because of their rarity, one James's and two Andean Flamingos were transferred to the Wildfowl Trust at Slimbridge where they joined flocks of potential breeding birds. In return, the Wildfowl Trust deposited with us three Chilean Flamingos, which had been bred in 1973. They will join the flock on the Three-island pond.

Through the generosity of the Director of the Zoological Gardens, Perth, Australia, we received some exciting and valuable additions to the Collection. These included the following species which have not previously been exhibited at the Zoo: Splendid Fairy Wrens (*Malurus splendens*), Crested Terns (*Sterna bergii*), Banded Rails (*Rallus philippensis*). Other species, which have not been seen here for many years, were Banded Plovers, Australian Stone Curlews and Yellow-winged Honeyeaters.

Other species new to the Collection were Grey Hornbill (*Tockus birostrus*), Red-fronted Barbet (*Tricholaema diadematum*), Black Ibis (*Pseudibis papillosa*), and Lesser Green Leafbirds (*Chloropsis cyanopogon*).

Amongst the deaths in the Bird Section were several aged individuals; a Chough which had been in the Gardens for 28 years; a Crested Pelican, at least 23 years old; a Tawny Owl of 21 years; an Upland Goose hatched here in 1950; and a male Spectacled Owl, which arrived in 1959 and had been breeding regularly since 1969.

The Waders' Aviary had to be demolished because it was on the site of the new Big Cat exhibit. Most of its inhabitants were moved to the Eastern and Southern Aviaries.

**Aquarium** New circulation pumps for sea and fresh water have been fitted in the engine room, and individual filtration and circulation systems are now in operation in a few of the tanks that contain species which require special conditions.

A number of subtropical marine animals were received from Madeira including pufferfish, castanet fish, Moray Eel, hermit-crabs, whelks and sea-anemones. The staff



added specimens to the Collection by fishing trips to Littlehampton where they caught Sea-bream, Pout, Lesser Spotted Dogfish, Thornback Ray, crabs, lobsters and whelks.

Twenty Perch and 30 Rudd were presented to the Royal Botanic Gardens, Kew, and the Society exhibited a number of tropical frogs at the President's Reception at the Linnean Society.

**Insect House** Among the more interesting arrivals were Rhinoceros and Long-horned Beetles, which were the first to be exhibited for a number of years. Other new exhibits included land-crabs from the Gambia, desert scorpions from Nigeria and bird-eating spiders from Guyana. A culture of the Malaysian Cockroach was presented and some of these were sent to Copenhagen Zoo. During the year the Giant Land Snails and the Rock Scorpions have bred.

The staff of the Insect House have succeeded in hatching and rearing the small crustacean *Triops cancriformis*, an inhabitant of temporary pools in semi-desert conditions. The animal, though rare in temperate climates, is found in parts of southern England and in Scotland.

**Reptile House** The Western Diamond-back Rattlesnakes produced two young, and the Water Dragons and Boipevussu Snakes bred again. A Gaboon Viper produced 15 young, only one day after her arrival, and an Anaconda gave birth to 17 young, five months after arrival.

A new tank exhibit, with artificial rock work, which was constructed by the staff from polystyrene coated with cement, sand and peat, allows viewing under water. It houses four recently acquired Dwarf Caymans.

The emergency snake-bite procedure has been revised, and was tested when a quantity of anti-venin had to be rushed to the Middlesex Hospital for a patient suffering from an Indian Cobra bite.

#### Veterinary and Pathology Reports

During the year 383 animals received veterinary attention. In addition 154 animals, which had been referred by Veterinary Surgeons in general practice or by various research institutes, were examined and treated in the Hospital. Compared with last year the number of animals in the Collection requiring veterinary treatment has fallen, a fact which reflects the continuing high standard of husbandry and management.

Professor A. E. Ferguson, whilst on sabbatical leave from the University of Guelph in Canada, Department of Clinical Studies, Ontario Veterinary College, spent from May to July in the Pathology Department studying avian diseases.

Full reports on the work of the Hospital, on post-mortem examinations, and on the research undertaken in the Hospital and Pathology Department are given in the Society's Scientific Report which is published biennially in the *Journal of Zoology*. Post-mortem examinations are carried out on all animals that die in the Collection and 715 such examinations were made during the year. No details are given in this general report of Council because a simple comparison of mortality rates between one year and another is inevitably misleading. Much depends upon the species of animals in the Collection during the relevant periods. Many small birds and mammals have a normal life span of only two or three years and if such animals are acquired as adults, it is inevitable that they will die within a relatively short period. What is important to assess is whether an animal dies at too early an age compared with the normal span of life of the particular species, and to determine the cause of illness and death so that, if necessary, suitable action can be taken to prevent further losses.



# Whipsnade Park

Visitors during the year 547,000  
Visitors to the Children's Zoo 151,000  
Cars brought into the Park 52,000

## General

After three years when many new developments were put in hand, 1974 was a year of consolidation. No new exhibits were started but work continued on the two main projects of grouping the various herds of animals into geographical regions.

The large animal house for the Asian Exhibit in Spicer's Field was completed. Although a certain amount of fencing still remains to be done, it is hoped that the exhibit will be in full use in the spring, by which time Bactrian Camels, Yak, Onager, Przewalski's Horses and Père David's Deer will have been moved in.

The new animal house in the African area, which includes the large White Rhino paddock, was in process of completion at the end of the year and will be occupied fully by Easter. Zebra, Brindled Gnu, Sitatunga and Ostriches will be housed there to add to the concentration of African animals in this area.

The Water Mammals' Exhibit functioned well, but the contractors have had to correct various technical defects which had shown up in the first two years of operation. In order to provide proper storage facilities for the very high-quality fish required for the dolphins, a low-temperature coldstore has been installed near the Avenue Cafe.

As at Regent's Park, some of the main services were improved. The old boilers in the Keepers' Lodge, and in the Giraffe and Elephant Houses, were replaced. A report on the electrical services in the Works area was prepared so that the improvements could be put in hand as soon as possible.

Among other minor items of development and improvement was the making of a new lake at the southern edge of Round Close as part of the redevelopment of that paddock following the completion of the railway circuit. The Tiger enclosure was repaired and painted and the traps improved. The Main Gate lavatories were altered to provide two toilets for disabled persons. The Zoo Shop roof was renewed and the Hall Farm Aviary repainted.

The Whipsnade and Umfolozi Railway operated successfully during the year and carried a higher proportion of visitors to the Park than in previous years. The new Zoo Road Train which was run, experimentally, on a free basis, was much appreciated by visitors. Last year's success in managing the large number of cars brought into the Park was repeated and, although the total number was not as great, the record for the number of cars coming in on a single day was exceeded with the entry of 1,539 cars on the Spring Bank Holiday.

## The Collection

Early in the year, the four dolphins in the Water Mammals' Exhibit went off their food and became seriously ill. Despite the greatest care and attention, including hand-feeding of all four animals, two died very suddenly, and the other two were only rescued by the devoted care of the staff. By the late spring they had fully recovered and continued in the best of health for the rest of the year.

A very long and detailed investigation was made into the cause of the condition, but nothing definite was established. The presumption is that some of the fish fed to the dolphins must have been of lower quality than was satisfactory. Despite the serious loss which these two deaths represented, a great deal of useful information, much of it previously unrecorded, was learnt from the investigations and the post-mortem examinations.

Cheetahs and rhinoceroses were again the most important births at Whipsnade. One more second-generation Cheetah cub was born on 4th May but, unfortunately, survived only three weeks. Later in the year the same female, 'Janica', herself born at Whipsnade, gave birth to another litter of five cubs. Two of these died immediately but the remaining three have flourished.



Since 1966, 23 Cheetah cubs have been born of which 18 were reared to independence, which is a remarkable record. The problem of disposing of these Cheetahs has increased as those born at Whipsnade themselves begin to produce young, and it was fortunate that during the year we were able to transfer one to Regent's Park and send four to other major zoos. One female was sent to Melbourne Zoo; a male was sent to Twycross and a pair to Chester.

The two births of White Rhinoceroses in 1973 were followed this year by several more, six young being born between September and December. One was stillborn and two died immediately after birth. Unfortunately, of the nine births at Whipsnade since 1971, seven have been males and this has created a problem of disposal. One of the young males, born in 1973, was sent to Peking Zoo as part of the return gift from the Society and the British people for the Giant Pandas. As the Society had no young female available, Blackpool Zoo, which owned the only young female White Rhinoceros in Britain, agreed to allow their animal to make up the pair for Peking. It was brought to Whipsnade on 5th November, where it spent a month with its new mate before the pair were sent on 7th December to Peking.

Whipsnade's outstanding breeding record, particularly of hoofed animals, continued. Species which were successfully bred in 1974 included Thomson's Gazelle, Père David's Deer, European Bison, Swamp Deer, Moose, Reindeer, Przewalski's Horse, Onager and Sitatunga.

Other births of note included a Black Rhinoceros, born in March, which unfortunately died in November having survived a serious operation when very young; two Hippopotamus; two litters each of Sumatran Tigers and Serval Cats; a Northern Lynx and two Red Pandas. There are now five Red Pandas in the group at Whipsnade, which is one of the most successful in captivity anywhere in the world.

In the Bird Collection, four Rosy Flamingos were hatched, the third success with this species in the last four years and, for the first time at Whipsnade, a King Penguin was successfully reared.

A female Cape Buffalo, which had lived 30 years at Whipsnade, died during the year.

## Veterinary Report

To avoid wastage, many Ungulate species are now fed on food-cubes designed for beef cattle. Some species, notably Blesbok, Wapiti and Ankole cattle, are given additional copper sulphate solution, because blood samples from these animals regularly demonstrate low circulating levels of copper. Blood samples are taken for routine haematology and biochemistry, and serum is collected for antibody determination to various diseases and for use by a number of outside research organizations. A reference collection of pathological material is being built up, with particular emphasis on the skeletal system.

The mixture of the narcotic Etorphine and the sedative Xylazine, which was developed for immobilization of large bovines, has now been used in a wide variety of other ruminants and is particularly successful for the handling of nervous species.

Most of the clinical work involves the treatment of injuries. The level of infectious disease in the Collection is very low, and endoparasites are regularly controlled by pasture management and the use of anthelmintics.

Further details of the work of the Veterinary Officer at Whipsnade, including the results of post-mortem examinations, are given in the Scientific Report.



Animals of all kinds (except fishes and invertebrates) in the Collections

London Zoo

	<i>In the Collection on 1 January 1974</i>	<i>Received in 1974 by presentation, exchange, deposit, purchase and transfer from Whipnade</i>	<i>Born and hatched in the Collection in 1974</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Whipnade</i>	<i>In the Collection on 31 December 1974</i>
Mammals	889	125	301	429	886
Birds	1,187	179	101	379	1,088
Reptiles and Amphibians	788	206	36	450	580
	2,864	510	438	1,258	2,554

*Estimated number of fishes and invertebrates in the Collection at 31 December 1974*

Fishes 3,018    Invertebrates (excluding locusts, ants and bees) 2,604

Whipnade Park

	<i>In the Collection on 1 January 1974</i>	<i>Received in 1974 by presentation, exchange, deposit, purchase and transfer from Regent's Park</i>	<i>Born and hatched in the Park in 1974</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Regent's Park</i>	<i>In the Collection on 31 December 1974</i>
Mammals	899	27	338	322	942
Birds	1,101	51	79	120	1,111
Reptiles	12	—	—	2	10
	2,012	78	417	444	2,063



# Scientific Activities

## Scientific Meetings

Two of the eight meetings during the year were held in association with other societies. At a meeting to mark the occasion of the 25th anniversary of the Bee Research Association, Dr L. Bailey spoke about viruses of bees and other insects and Dr D. V. Alford discussed factors influencing bumblebee numbers in Britain. The meeting in May was arranged with the Harveian Society of London and consisted of contributions from Dr G. H. du Boulay on the development and function of the Rete Cerebri, an alternative in many mammals to man's cerebral arterial tree, from Dr J. R. Henderson on the human diving response, and from Dr D. W. Burgess on the effect of high pressure oxygen on circulation in the human brain. Other communications not intended for publication were a lecture by Dr C. Patterson, one of the Society's Scientific Medallists for 1972, on the braincase of actinopterygian fishes; a discussion of the comparative behaviour of Otters in captivity by Mrs Nicole Duplaix-Hall; and a description by Mr Jeffery Boswall of the onshore biology of the Penguin *Spheniscus magellanicus*. The remaining papers given were published in the *Journal of Zoology*.

## Symposia

The following Symposia were held:

17th/18th January. 'Protochordates' organized by Professor E. J. W. Barrington and Dr R. P. S. Jefferies.

21st/22nd March. 'Sound reception in mammals' organized by Dr R. J. Bench, Dr Ade Pye and Professor J. D. Pye and held in association with The British Society of Audiology.

## 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 Ververs

*Assistant Editor*: Marcia A. Edwards

*Editorial Assistant*: L. G. Ellis

*Administrative Assistant*: Unity M. M. McDonnell

*Journal of Zoology* Volumes 172, 173 and 174 were published and contain a total of 101 papers. The Council is most grateful to those who continue to give so generously of their time to referee the many papers submitted for publication.

*Transactions* Two parts were published: Volume 32 part 5 'Morphology and kinetics of the head of the stickleback, *Gasterosteus aculeatus*' by G. Ch. Anker, and Volume 32 part 6 'Parasites and epibionts of Cladocera' by J. Green.

*Symposia* Two volumes were published: No. 32 'Myriapoda' edited by Mr J. G. Blower, and No. 34 'The biology of hystricomorph rodents' edited by Dr I. W. Rowlands and Dr Barbara J. Weir.

## Zoological Record

*Managing Recorder*: Michael N. Dadd

*Systems Analyst*: Graham M. Bennell

*Senior Recorders*: Anne Clutterbuck, Judith M. Howcroft, Angela Milner, Stuart J. Rammell.

Volume 107 (1970 literature): all Sections of this volume except Section 20 (*List of New Genera and Subgenera*) have been published.

Volume 108 (1971 literature): six Sections have been published and the remainder, except Section 20, are in press. It is expected that publication of the volume will be completed early in 1975.



Volume 109 (1972 literature): this is the first volume to be prepared using the computer-assisted system described in the last *Report* and because of this, the publication schedule will differ. Instead of Sections of the *Record* appearing individually they will be published in groups, although, as before, each Section will be available separately. The first of these groups, Sections 14-19 (Protochordata-Mammalia), has been indexed and should have been published during 1974. However, partly because of the complexity of the task of keying bibliographic data onto magnetic tape, and partly due to delivery and maintenance problems with the equipment, this part of the operation is behind schedule. These difficulties have now been largely resolved and it is expected that this group of Sections will appear early in 1975.

Because of shortages of experienced staff, indexing is behind schedule on the remaining Sections of Volume 109, and it is unlikely that these will appear before the Autumn.

The Council is grateful to the Directors and staff of the British Museum (Natural History) and the British Library, Lending Division, for the provision of accommodation and for other assistance. The Council is also indebted to those who continue to assist in the compilation of the *Record*, and to the Institutions (listed in Appendix 7) whose donations help to defray the rapidly increasing and heavy expenses involved.

### International Zoo Yearbook

*Editor*: Mrs Nicole Duplaix-Hall

*Advisory Editor*: H. Gwynne Vevers

Volume 15 of the *International Zoo Yearbook*, which was prepared during the year for publication in Spring 1975, contains three sections. Section 1 is devoted to 'Small mammals in captivity'. Dr Devra Kleiman and Dr John Eisenberg of the Smithsonian Institution, both recognized authorities on mammal behaviour, acted as joint consultant editors. The 17 papers, most of which were specially commissioned, cover a wide range of topics, including the latest research in behaviour, breeding, husbandry and display techniques. They include articles on the study of the behaviour of small mammals, practical advice on keeping and feeding bats and on the breeding of tree shrews and mouse lemurs; and descriptions of the Charles Clore Pavilion for Small Mammals at Regent's Park and the World of Darkness at the Bronx Zoo, New York.

Section 2 contains 72 papers on various aspects of zoo management, under the headings Breeding, Husbandry, Hand-rearing, Buildings and Exhibits, Conservation, and Education. Section 3, the reference section, records the numbers and species of vertebrates bred in zoos and aquaria in 1973, including those where the births were of captive-born parents; a census of rare animals in captivity in 1973; and a list of stud-books for rare or endangered species in captivity.

### Library

The Library has continued to provide a lending and information service to members of the Society and its staff. The rules for the use of the Library have been revised and are available from the Librarian.

The Society is again very grateful to those who have made gifts, in particular the firm of Mitchell Beazley who gave £300 for the purchase of books, and the artist Mr William Timym, who presented the picture of lions which now hangs in the Reading Room.



# Research

As mentioned previously, a comprehensive report of the research carried out by the Society is published biennially in the *Journal of Zoology*, and only an outline is given in this general report. The papers published during the year by members of staff and by research workers are given in Appendix 3.

Dr H. G. Vevers has continued to collaborate with Dr G. Y. Kennedy of the Cancer Research Laboratory, University of Sheffield, on animal pigments. They are now preparing for publication their survey of the tetrapyrrole pigments deposited in birds' eggshells. Dr Vevers is also working on improved methods of sea-water circulation in the Aquarium.

Mr Peter Olney, the Curator of Birds, continued to act as Honorary Editor for *Birds of the Western Palearctic* which is to be published by Clarendon Press. It will cover, in 7 volumes, 740 species which occur in the Western Palearctic. The data will include field characteristics, breeding biology, habitat, plumage, distribution, social pattern display and Mr Olney is responsible for the section on food and feeding.

In the late summer the Curator of Birds attended the 16th International Ornithological Congress in Canberra, Australia, and represented the British Section at a World Congress of the International Council for Bird Preservation which followed. During this tour he also visited many zoos and collections in Thailand, Malaysia, Australia and the United States.

## The Nuffield Institute of Comparative Medicine

The Institute, which was founded in order to make use of the opportunities afforded by the Society's collections of animals for studies in pathology, biochemistry, infectious diseases and radiology, has the following 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 Assistants, Infectious Diseases*: Ann Bartlett; D. E. Bidwell. *Laboratory Superintendent*: P. R. E. Wallace. *Administrative Assistant*: Patricia E. Wright.

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

Mr Fiennes, Head of the Pathology Department of the Institute and one of the chief architects of its original scientific programme, retired in November 1974 after 18 years' service with the Society. Dr Sinclair returned to Australia, and Mr D. A. Dyson was appointed to the staff of the Veterinary Investigation Service in Scotland.

Two graduates joined the staff: Mrs Vija Dent to work on dental plaque and Miss Jennifer Graham to work on botulism. Dr Voller and Dr Bidwell carried out a malaria survey in Tanzania, and Dr Voller also collaborated with research teams in Colombia, Sweden, Russia, Poland and Persia.

Visiting scientists who have worked at the Institute include: Mr M. Butler, Mr B. J. Britton, Mrs M. Smith and Dr G. Wood (St Bartholomew's Hospital), Mr S. Dean (Royal Veterinary College), Mr A. E. Munhambo (University of Dar es Salaam), Dr G. Crane (Institute of Medical Research, Papua, New Guinea), Miss I. Quakyi (University of Accra), Dr J. Bafort (University of Antwerp), Dr S. Satchithanan and Dr C. Munas (University of Sri Lanka).

**Research Projects** Dr Hawkey has carried out blood tests for the animal Collections and the Institutes, and has collaborated with the Surgical Unit, St Bartholomew's Hospital, in a study of the effects of stress on the clotting properties of blood in hospital patients. Mr Nurden has made a notable contribution to our knowledge of the structure of the proteins that coat blood platelets and are instrumental in causing them to stick together.

The red cells in the blood of Genets have been found to change shape in a similar way to those of human patients with sickle cell disease and the cause is being investigated.



Dr Smith and his colleagues have developed laboratory methods for the study of *Clostridium botulinum*, the organism responsible for outbreaks of botulism in waterfowl. Types B, C and E were found in the mud of ponds, canals and rivers in the London area. Dr Voller and Dr Bidwell have continued their efforts to develop new, objective immunological tests suitable for malaria surveys, and Dr Bartlett has been studying the differences between enzymes in nematode worms. Mr Austwick has provided a mycological service for the Collection and has identified the fungus that causes hyphomycosis in horses as a species of *Pythium*.

Dr Hay, in collaboration with the Dunn Nutritional Laboratory, Cambridge, has studied vitamin D metabolism in primates, and the proteins that serve as carriers for the vitamin in more than 140 vertebrate species. Mr Rivers has estimated vitamin A in the livers of animals that have died in the Collection, following the demonstration that over-dosage was the probable cause of death of tree shrews kept at the Wellcome Institute of Comparative Physiology. Mr Rivers has also shown that low fat diets fed to female mice affect the sex ratio of their litters.

Dr Crawford and Dr Sinclair have continued to study the incorporation of fatty acids in the brains of land and marine mammals, and Mr Hassam has used radiotracer techniques to identify the rate-limiting steps in the interconversion of some of these acids. Mrs Hall has investigated the composition of human milk, with particular reference to the lipid content and quality. Part of this study has been in collaboration with overseas workers. Mr A. E. Munhambo, from Tanzania, has spent several months at the Institute learning gas chromatographic techniques.

Dr du Boulay and his colleagues from the National Hospital, Queen Square, have made some important radiological observations on the reactivity of cranial arteries in the presence of blood in the subarachnoid space. Studies are also in progress of the vascular patterns in skin flaps used in plastic surgery. Additions have been made to the Wellcome Animal X-ray Museum, especially of radiographs of fish.

Wellcome Institute of  
Comparative  
Physiology

Staff *Senior Research Fellow*: I. W. Rowlands (succeeded by R. D. Martin on 1st October 1974). *Research Fellows*: P. F. Watson; B. Seaton; Frances D'Souza. *Visiting Research Fellow*: D. R. Patil. *Visiting Research Student*: D. Els. *Senior Technician*: G. F. Nevill.

There were few staff changes during the year. Dr R. D. Martin was appointed to the post of Senior Research Fellow on 1st October 1974, following the retirement of Dr I. W. Rowlands on 31st August 1974. Dr D. R. Patil (Nagpur, India) continued with his work on pituitary histology with a special Visiting Research Fellowship following the expiry of his two-year WHO Training Fellowship in July 1974. Mr D. Els returned to the Department of Zoology, Pretoria, at the end of his seven-month visit at the beginning of July 1974.

**Research Projects** Breeding was continued with Viscacha (*Lagostomus*), Chinchilla (*Chinchilla*), Degu (*Octodon*), Cuis (*Galea*) and Casiragua, prior to transfer of most of the hystricomorph rodent stock to the Anatomy Department, University of Cambridge, in August. Up to that time, the breeding colonies provided material for several specific projects. Collection and preparation of Cuis ovaries for histological study continued, and extracts of the male Cuis chin-gland were made to test the evocation of oestrus by the secretion of the gland. Further data were collected on the effect of subcutaneously implanted tablets of progesterone on the resorption of embryos in the Viscacha. Dr Patil and Dr Watson carried out a joint programme of study of the effects of various treatments on pituitary histology and male reproductive organs of the Viscacha, exploiting Dr Patil's development of staining techniques to identify all six hormone-producing cell-types in the pituitary and to estimate effects of treatment.

Dr P. F. Watson continued with his studies of sperm storage and ultrastructure of



spermatozoa. Sperm was obtained from Brindled Gnu with the ultimate aim of sending it to Sydney Zoo for artificial insemination.

Dr B. Seaton completed preliminary development of broad-spectrum techniques for assaying steroid hormones. Using a combination of gas-liquid chromatography and radio-immune assay, various projects involving practical applications of the assaying techniques have been initiated. Urine samples from female African Elephant, Mouse Lemurs and Gorillas have been investigated. Investigation of urine samples from a female elephant in the Collection was supplemented by the study of vaginal smears conducted by Dr P. F. Watson.

Mrs Frances D'Souza has established a colony of two tree shrew species (*Tupaia minor*; *Lyonogale tana*), importing fresh stock in association with a brief field visit to Sarawak which yielded data on behaviour under natural conditions. Success has been achieved in the study of the oestrous cycle of *T. minor*. Observations on *L. tana* have led to a joint study on the effects of excessive vitamin A intake.

Mr W. V. Holt carried out a study on testicular development in the Cuis, in association with studies of the male chin-gland, and also worked with Mr D. Els on studies of the histochemistry of the guinea pig reproductive tract. The latter investigation was largely a training exercise for Mr Els, but also led to new developments in enzyme identification. Mr Holt also added 35 specimens to the Reference Collection of Reproductive organs. The number of specimens in this collection is now 864.

Dr R. D. Martin established a colony of Mouse Lemurs (*Microcebus*) and Dwarf Lemurs (*Cheirogaleus*) which were transferred from University College, London. Work is continuing on the reproductive behaviour and physiology of these nocturnal primates, with special emphasis on the effects of environmental stress.

During the year, material was supplied to Dr B. Cover (studies on trypanosomes), Dr N. R. Carter (investigation of carbonic anhydrase genetics), Professor F. Beck and Dr A. Gulamhusein (study of delayed implantation in ferrets), Mr H. V. Thompson (post-mortem investigations), Dr R. B. Heap (study of progesterone-binding globulins), Dr R. W. J. Neville (work on insulins), Mr J. P. Parent (studies of hystricomorph skulls) and Dr Wilma George (chromosome studies).



# Educational Activities

## Educational Programme for Schools

Admission charges for school pupils were increased during the year but, despite this, attendances showed an increase over the figures for 1973. The number of pupils were:

Regent's Park	Spring Term (Secondary Schools)	19,741
	Summer Term (Primary Schools)	19,165
	Autumn Term (Secondary Schools)	17,204
Whipsnade Park	Summer Term (Secondary Schools)	4,115
		60,225

As mentioned earlier, the new Education Centre and the Teachers' Centre will be completed during 1975 and in September, Mr John D. Wray was appointed by the Inner London Education Authority as Warden of the latter.

## Other Courses

A short course for university students was held during the Easter vacation, and the Council is very grateful to the zoologists from universities and other departments who conduct these courses. Cooperation with universities, colleges of education and technical colleges was maintained, and the number of special lectures and demonstrations given during the year was higher than ever before.

In January, a Symposium for Sixth Form pupils on 'The Natural History of Dinosaurs' was organized by Mr John Attridge and, as in previous years, the demand for tickets greatly exceeded the supply.

## Christmas Lectures

Three meetings were held during the Christmas period for the children and young friends of members of the Society. Mr Jeffery Boswall of the BBC's Natural History Unit commented on his film 'Wildlife Safari to the Argentine', and Mr Michael Boorer gave an illustrated talk on 'The Zoo and how it works'. The BBC films 'Whales, Dolphins and Men', and 'The Silent Watcher' were also shown. All three meetings were well attended.

## Young Zoologists' Club

Club activities were well supported and members visited Bristol Zoo and the Norfolk Wildlife Park at Great Witchingham. Zoo Quest competitions were held both at Regent's Park and Whipsnade Park during the summer holiday periods. Indoor meetings included talks by Mr Hugh Falkus and by members of the Society's staff.

Three editions of 'Zoo Magazine' were published giving accounts of the latest developments at Regent's Park and Whipsnade, and a variety of articles on zoological topics.



# General Matters

## The '1001' - Nature Trust

On 8th May the '1001' Nature Trust of the World Wildlife Fund held a meeting at Regent's Park. A symposium under the joint Chairmanship of HRH The Prince of the Netherlands and the Society's President, HRH The Duke of Edinburgh, on 'The Contribution of Zoos to Conservation' was followed in the evening by a tour of the Gardens and a Reception.

## Publicity

The story of the arrival of the Giant Pandas was reported very widely in the national Press, on radio and television programmes, and was followed by a continuous interest in their progress. Many other animals attracted the interest of the Press including, at Regent's Park, Brown Bear cubs, a young Bactrian Camel, a young Giraffe and, at Whipsnade, a baby Hippopotamus, and the departure of the two White Rhinoceroses to China.

The photographic library has been built up and photographs of many new species have been added.

## Zoo Restaurants Limited

Zoo Restaurants Ltd catered for 162 evening functions, of which 33 were in the Tavern Room. The four evenings when the Gardens were open for Members and guests were very well attended, and over 400 Members dined on each of the evenings.

The company extended its evening activities to Whipsnade and 16 functions were held, including an evening buffet for Members and their guests.

## Staff

At the end of the year the Society's permanent staff totalled 516. A list of senior members is given in Appendix 2.

A revision and improvement of the Society's pension scheme was prepared during the year, but was deferred following a change in the legislation governing pension schemes.

As a memorial to the late Mr George Ashby ('Nobby'), who died in 1973, a fund was set up at the request of the staff, many of whom contributed, to provide book prizes to keepers who achieve the highest marks in the examination for the Ordinary and Higher Certificates in Zoo Animal Management.

## Training

An exchange of staff for a period of a year was arranged with Assiniboine Park Zoo, Winnipeg, and Mr Geoffrey Oliver, of the Reptile House, is now working in Winnipeg while Mr Jim Martin of that Zoo is working at Regent's Park. Mr Abdullahi Yau of Kano Zoo, Nigeria, is in his second year of in-service keeper training with the Society.

Ten members of staff satisfactorily completed a four-day course in Industrial First Aid organized for the Society by the St John's Ambulance Brigade.

## Awards

Mr J. Datlen, Overseer, Whipsnade Park, was awarded the Society's Bronze Medal for outstanding service, particularly his contribution to the setting up of the new Water Mammals' section.

Gold watches were presented to three members of staff who completed 25 years' continuous service at Regent's Park; Headkeeper P. Anscombe of the Children's Zoo, Mr H. W. Callard of the Transport Department and Mr G. L. Hedges of the Gardening Department.

## Appointments and Promotions

Mr P. Anscombe, *Headkeeper, Children's Zoo*

Mr A. D. Boulton, *Assistant Education Officer*

Mr G. Figgett, *Assistant Gardens Executive*

Mrs M. Grainge, *Assistant Accountant*

Mr W. J. Griffiths, *Assistant Education Officer*

Mr J. McCorry, *Gardens Executive*

Dr R. D. Martin, *Senior Research Fellow, Wellcome Institute*

Mr E. Middleton, *Clerk of Works*



Mrs A. Milner, *Senior Recorder, Zoological Record*  
Mr S. J. Rammell, *Senior Recorder, Zoological Record*  
Mr E. Swain, *Headkeeper, Lion House*

#### Retirements and Resignations

Retirements on pension during the year included Mr J. Ward, Gardens Executive, after 45 years' service; Mr G. Hughes, Headkeeper, Children's Zoo, Regent's Park, after 32 years' service; Mrs J. Iken, Cashier, Whipsnade Park, after 26 years' service; Mr R. N. T-W-Fiennes, Head of Pathology Department, Nuffield Institute, after 18 years' service and Dr I. W. Rowlands, Senior Research Fellow, Wellcome Institute, after 12 years' service.

Resignations included Mr G. Dibley, Technician, Pathology Department, who was appointed Curator, Kano Zoo, Nigeria, and Mrs N. Duplaix-Hall, Editor, International Zoo Yearbook, to take up a post with the New York Zoological Society.

#### Obituary

It is with great regret that we record the deaths of Mr H. W. Callard, Transport Department; Messrs P. Sullivan and W. Swinden of Works Department; Mr T. Kerr, Catering Department, Regent's Park, and of two pensioners, Mr G. Goodenough and Mrs U. Honigman.

#### Acknowledgments

The Council records its sincere gratitude to the members who serve on the various committees; their expert advice and assistance is increasingly valuable 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 reptiles, marine fishes and invertebrates.

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; Mr N. Whittaker of the RSPCA, London Airport, for care of animals in transit and for the presentation of animals; many organizations, in particular, the Ford Foundation, the Medical Research Council, the Wellcome Trust, 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; and the St John Ambulance Brigade for their constant help at the First Aid Centre, London Zoo.

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

**The Architect's Department** by Messrs Adams Green and Partners, Davis Belfield and Everest, R. T. James and Partners, Lady Casson, Miss Joyce Conwy Evans and Mrs Margaret Maxwell.

**The Veterinary Officer** by Professor Norman Ashton, Mrs A. Farraro, Dr R. B. Heath, Mr D. Knight, Miss G. Lewis, Mr R. Perrin, Dr H. Platt and staff, Mr J. E. N. Sloan, Dr A. D. Walker.

**The Pathologist** by Dr E. S. Anderson, Dr E. C. Appleby, Mr A. A. Bell, Dr P. Cavanagh, Dr H. P. Chu, Dr T. Clay, Dr A. D. Dayan, Dr D. E. Deakins, Professor I. Doniach, Dr E. Elkan, Dr R. Finlayson, Dr A. E. Friday, Dr S. D. Gardner, Professor P. C. C. Garnham, Dr E. J. G. Glencross, Dr D. J. Jefferies, Dr L. F. Khalil, Dr B. R. Laurence, Miss G. Lewis, Professor K. McCarthy, Mr D. J. Mackinnon, Dr N. S. Mair, Dr E. Margoliash, Dr M. J. Mitchinson, Mr S. J. Moore, Dr M. S.



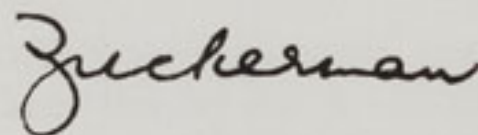
Pereria, Professor R. B. Ramsey, Dr J. Riley, Dr B. Rowe, Dr V. Sarich, Professor G. B. D. Scott, Mr E. W. Trow, Dr L. H. Turner and Dr Sheila Wilmott.

**The Nuffield Institute of Comparative Medicine** by Dr J. Amemiya, British Cod Liver Oil, the British Council, Professor J. Boldingh, Dr J. Copland, Dr K. Dormandy, Dr B. O. L. Duke, Dr A. Fraser, Mrs A. Helszajn, Mr A. Howard, Dr A. Jamieson, Dr J. Keppie, Dr B. R. Laurence, Dr D. E. M. Lawson, Dr J. Levin, Merck Sharp & Dohme Ltd., Mr G. Mountfort, Multiple Sclerosis Research Fund, Professor G. S. Nelson, Dr P. Racey, Dr T. A. Roberts, the Birdkeeper of the Royal Parks, the Royal Society, Mr Whitney Straight, Dr W. C. Weese, Mr W. L. Whitehouse, Mr J. Williams and Dr M. Worms.

**Supplies, Shipping and Transport Sections** by the Department of Trade and Industry and HM Customs and Excise, Carworth Europe, the many people who have kindly offered and sent bamboo for the two Giant Pandas and also Evergreen Oak for other animals, Aer Lingus Airlines, Air Canada, Air France, Air India, British Airways, British Caledonian Airways, British Rail, Cambrian Airlines, R. L. Dobbs Transport, East African Airways, Ellerman Lines Ltd, KLM Royal Dutch Airlines, Industrial Freight Ltd, Lufthansa German Airways, Japan Air Lines, Nigeria Airways, J. F. Obree & Son Ltd, Pan American World Airways, Qantas Airways Ltd, Richards and Wallington Ltd, Sabena (Belgian) Airlines, Scandinavian Airlines, South African Airways, Swiss Airlines and Union-Castle Mail Steamship Company.

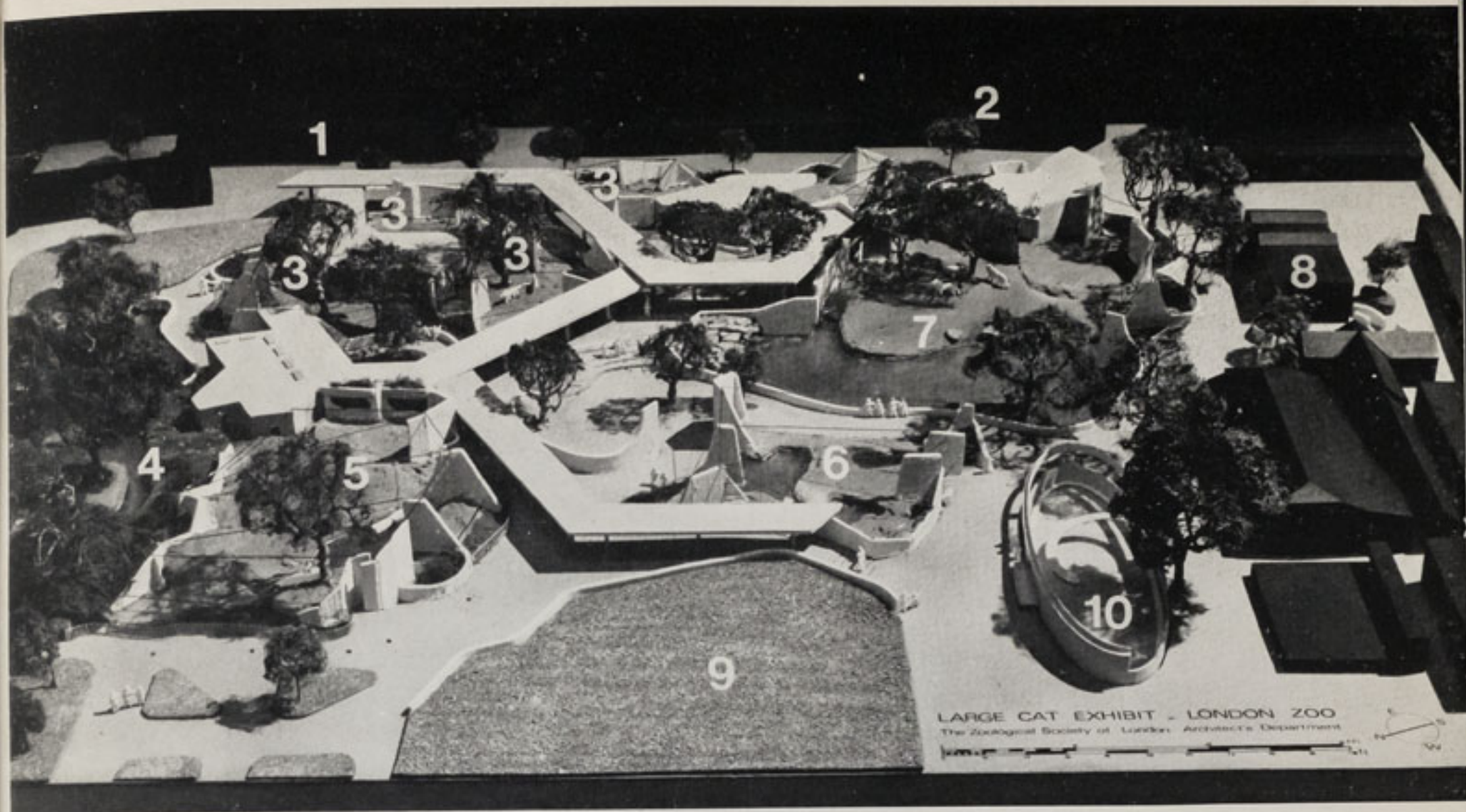
**Whipsnade Park** by Bayer Ltd, Dr J. Brown, Dr P. Cavanagh, Dr W. H. Dudok van Heel, Dr T. E. Gibson, Miss G. Lewis, Dr. J. L. Linzell, Pan American World Airways, Dr H. Platt, Qantas Airways Ltd, Reckitt and Colman, Dr I. M. Sharman, Mr J. E. N. Sloan, Tintometer Sales Ltd, Transmeridian Air Cargo Ltd, Dr G. S. Twigg, Mr R. R. Watret, and the members of the British Red Cross Society who staff the first-aid post.

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



Secretary





Model of Large Cat exhibit  
The Zoological Society of London

- |  |                     |                       |
|--|---------------------|-----------------------|
| 1 South Gate                               | 4 Three Island Pond | 7 Lion Enclosure      |
| 2 Bird House                               | 5 Tiger Enclosure   | 8 Children's Zoo      |
| 3 Cat Enclosures<br>(Cheetah, Leopard etc) | 6 Waders Aviary     | 9 Old Lion House Site |
|  |                     | 10 Penguin Pool       |

Red Panda, five months old, with mother,  
Whipsnade Park  
The Zoological Society of London







Giant Pandas, 'Ching-Ching' and 'Chia-Chia', at London Zoo, September 1974  
*The Zoological Society of London*

Picture presented to the Society by the Chinese Ambassador, October 1974  
*The Zoological Society of London*



Ruffed Lemurs, 4 weeks old, at London Zoo  
*The Zoological Society of London*



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 英国人民  
 中华人民共和国政府赠

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 With the compliments  
 of the Government of the  
 People's Republic of China  
 1974





Jackson's Hornbill, 8 weeks old,  
with parent birds  
*The Zoological Society of London*

White Rhinos, 'Mungo' and  
'Nykasi', at Whippsnade, before  
leaving for Peking Zoo, December  
1974  
*The Zoological Society of London*







Anacondas, four days old, at London Zoo  
*The Zoological Society of London*



# Committees 1974-1975

## 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.

Sir Gawaine Baillie, Bt  
The Lord Donaldson, OBE *Chairman*  
R. Romilly Fedden, CBE

Sir Dudley Forwood, Bt  
A. M. Hassell, MA  
Christopher Marler  
The Hon. Ivor Montagu  
Air Vice-Marshal G. Silyn Roberts, CB,  
CBE, AFC, MSc  
Nigel Sitwell  
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Lady Anne Tree  
C. A. Wright, DSc, PhD, FIBiol  
Woodrow L. Wyatt  
*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.

E. C. Appleby, PhD, MRCVS  
D. F. Attenborough, CBE, MA  
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A. G. Beynon, CB, DVSM, MRCVS

Miss Marie E. Coates, PhD  
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*Chairman*  
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W. L. Whitehouse, RD, MB, FRCS, FRCOG  
A. N. Worden, PhD, DVetMed, DrMedVet,  
FRCPath, FRCVS, FRIC, FIBiol  
*Secretary:* D. M. Jones, BSc, BVetMed, 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.

Professor Felix Beck, MB, ChB, MD  
B. K. Follett, PhD  
Professor R. J. Harrison, MA, MD, DSc, MB,  
BChir, FRS

R. B. Heap, MA, PhD  
Professor P. A. Jewell, MA, PhD  
Alex. B. Paterson, DSc, FRIC, DVSM, MRCVS  
J. S. Perry, DSc, FIBiol  
H. V. Thompson, BSc, FIBiol, *Chairman*  
Professor G. M. H. Waites, MA, PhD  
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.

Professor H. Baum, PhD  
Rodney Finlayson, MD, FRCPath  
Professor M. S. R. Hutt, MD, FRCP, FRCPath  
Professor A. T. Phillipson, MA, PhD, DVSc,  
MRCVS, FRSE

N. W. Pirie, MA, FRS  
Professor Walter Plowright, MRCVS, DVSc  
C. E. Gordon Smith, CB, MD, FRCP, FRCPath  
Nigel Snodgrass, BSc, MRCVS  
Cecil Symons, MD, FRCP  
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, BSc, FIBiol

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

John A. Barker, BSc, FIBiol  
Professor A. d'A. Bellairs, DSc, MRCS, FLS  
Professor W. S. Bullough, DSc, *Chairman*  
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Miss Barbara Gilchrist, PhD  
Professor John Napier, DSc, MRCS, LRCP  
Geoffrey Schomberg, FLS  
J. E. Spice, MA, DPhil  
D. J. Stanbury, BSc, ARCS  
Peter Ward, BSc, MIBiol  
C. H. Selby, HMI  
*Secretary:* M. K. Boorer, BSc, DipEd



<b>Publications Committee</b>	<p><i>Terms of Reference:</i> To advise Council on all matters concerning the publication of zoological research; to serve as an editorial board for the <i>Journal of Zoology</i> and the <i>Transactions of the Society</i>; and to make recommendations on Library policy.</p> <p>Professor E. H. Ashton, PhD, DSc          Professor E. J. W. Barrington, MA, DSc, FRS,  <i>Chairman</i>          Professor A. J. E. Cave, MD, DSc, FRCS,          FLS</p>	<p>Professor J. L. Cloudsley-Thompson, MA,          PhD, DSc          P. H. Greenwood, DSc, FLS          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 G. P. Wells, ScD, FRS  <i>Secretary:</i> H. Gwynne Vevers, MBE, DPhil,          FLS, FIBiol</p>
<b>Zoological Record Committee</b>	<p><i>Terms of Reference:</i> To advise on the scope and production of the <i>Zoological Record</i> and on methods of ensuring its widest distribution.</p> <p>Professor E. J. W. Barrington, MA, DSc, FRS,  <i>Chairman</i>          J. Clevedon Brown, PhD, FLS,          Francis C. Fraser, CBE, DSc, FRS          P. Freeman, DSc, ARCS, FIBiol</p>	<p>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  <i>Secretary:</i> H. Gwynne Vevers, MBE, DPhil,          FLS, FIBiol</p>
<b>International Zoo Yearbook Editorial Board</b>	<p><i>Terms of reference:</i> To advise on the content, form and production of the <i>Yearbook</i>.</p> <p>Miss Molly Badham          Professor F. Bourlière, MD, LSc          The Lord Craigton, PC, CBE          Geoffrey R. Greed          Professor P. A. Jewell, MA, PhD, <i>Chairman</i></p>	<p>Miss Janet Kear, PhD          Christopher Marler          Lord Medway, MA, PhD          Professor A. T. Phillipson, MA, PhD, DVSc,          MRCVS, FRSE          Walter Van den bergh  <i>Secretary:</i> Mrs Nicole Duplaix-Hall, FLS</p>

APPENDIX 2

## Staff

<b>Headquarters</b>	<p><i>Director of Administration:</i> Miss E. M. Owen, CBE  <i>Director of Zoos:</i> C. G. C. Rawlins, OBE, DFC  <i>Architect:</i> J. W. Toovey, AADipl(Hons), FRIBA  <i>Chief Accountant:</i> W. N. Pickford, MM, ACIS</p>	<p><i>Education Officer:</i> M. K. Boorer, BSc, DipEd  <i>Establishment Officer:</i> M. E. McInerney  <i>Catering Manager:</i> G. A. J. Perkins, MHCI  <i>Retail Manager:</i> J. F. Brown  <i>Public Relations Officer:</i> J. A. Dale, MIPR</p>
<b>Scientific</b>	<p><i>Director of Science:</i> L. G. Goodwin, MB, BS, FRCP, BPharm, FIBiol  <i>Assistant Director of Science:</i> H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol          (See also Publications Department and London Zoo)  <i>Nuffield Institute of Comparative Medicine:</i>          See page 18</p>	<p><i>Wellcome Institute of Comparative Physiology:</i>          See page 19  <i>Pathologist:</i> I. F. Keymer, PhD, FRCVS, FIBiol  <i>Veterinary Officer:</i> J. M. Hime, MRCVS, DVR  <i>Senior Hospital Technician:</i> A. K. Fitzgerald  <i>Librarian:</i> R. A. Fish, FLA  <i>Publications Department:</i> See page 16</p>
<b>London Zoo</b>	<p><i>Curator of Aquarium and Invertebrates,</i>  <i>Acting Curator of Reptiles:</i> H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol  <i>Curator of Birds:</i> P. J. S. Olney, BSc, DipEd, FLS  <i>Curator of Mammals:</i> M. R. Brambell, VetMB, PhD, MRCVS, FLS  <i>Gardens Executive:</i> J. McCorry</p>	<p><i>Head Gardener:</i> W. G. Gardner  <i>Maintenance Manager:</i> L. G. Taverner  <i>Overseer of Birds:</i> D. H. Newson  <i>Overseers of Mammals:</i> T. Sangster, J. Lambden  <i>Overseer of Reptiles:</i> D. Ball, AIAT  <i>Purchasing and Transport Manager:</i> H. J. Mason, MInstPS, MASMCM</p>



Head Keepers

*Aquarium*: R. Dumbelton  
*Aquatic Birds and Birds of Prey*: A. E. Scrivener, AIAT  
*Bears*: S. Morton  
*Bird House*: W. G. R. Daines  
*Children's Zoo*: P. Anscombe  
*Elephant Pavilion and Aquatics*: W. G. Crompton  
*Insects*: R. P. Humphreys, AIAT

*Lion House*: E. F. Swain  
*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

*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, RA, RDI, RIBA, FSIA  
*Consulting Landscape Architect*: Peter F. Shephard, CBE, BArch, PPRIBA, MRTPI, PPILA  
*Honorary Herpetologist*: Professor A. d'A. Bellairs, DSc, MRCS, FLS  
*Honorary Veterinary Consultant*: A. C. L. Brown, 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

APPENDIX 3

## Publications by Society's Staff and Research Workers

(including those published in collaboration)

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# List of animals received

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

## 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 Collections', the figures in brackets indicate the number which have died.

## REGENT'S PARK

		Total number acquired	Number born or hatched in the Collections
<b>Mammals</b>			
<b>MONOTREMATA</b>			
	<i>Zaglossus bruijni</i>	3	
<b>MARSUPIALIA</b>			
	<i>Dactylopsila trivirgata</i>	3	
G	<i>Echymipera rufescens</i> Lesson (Australia and New Guinea)	2	
	<i>Petaurus breviceps</i>	2	2
	<i>Protemnodon parma</i>	1	1
	<i>Protemnodon rufogrisea</i>	1	1 (1)
	<i>Macropus canguru</i>	1	1
<b>INSECTIVORA</b>			
	<i>Setifer setosus</i>	2	2
<b>CHIROPTERA</b>			
	<i>Desmodus rotundus</i>	1	1
<b>PRIMATES</b>			
	<i>Tupaia tana</i>	2	2 (1)
G	<i>Anathana ellioti</i> Waterhouse (India)	4	2
	<i>Lemur catta</i>	5	1
	<i>Lemur variegatus</i>	2	2
	<i>Lemur fulvus</i>	1	1
	<i>Loris tardigradus</i>	5	
	<i>Nycticebus coucang</i>	2	2 (1)
	<i>Galago crassicaudatus</i>	1	1
	<i>Galago senegalensis</i>	2	2
	<i>Aotus trivirgatus</i>	1	1
	<i>Cebus apella</i>	1	1
	<i>Ateles paniscus</i>	1	
	<i>Ateles belzebuth</i>	2	
	<i>Callithrix jacchus</i>	6	
	<i>Saguinus oedipus</i>	1	1 (1)
	<i>Saguinus illigeri</i>	6	1 (1)
	<i>Macaca nemestrina</i>	2	2
	<i>Mandrillus sphinx</i>	1	1
	<i>Theropithecus gelada</i>	1	1
	<i>Cercopithecus pygerythrus</i>	2	2
	<i>Pongo pygmaeus</i>	2	2
	<i>Pan troglodytes</i>	1	1
<b>RODENTIA</b>			
	Sp. inc.	2	
	<i>Ratufa bicolor</i>	1	
	<i>Funisciurus pyrropus</i>	1	1



		Total number acquired	Number born or hatched in the Collections
<i>Callosciurus bocourti</i>	Bocourt's Squirrel	2	
<i>Tamias sibiricus</i>	Siberian Chipmunk	5	5 (1)
<i>Peromyscus maniculatus</i>	White-footed Mouse	3	
<i>Phodopus roborovskii</i>	Dwarf Hamster	6	6 (3)
<i>Cricetulus barabensis</i>	Chinese Hamster	12	8
<i>Clethrionomys glareolus</i>	Bank Vole	28	28
<i>Meriones unguiculatus</i>	Clawed Jird	29	29
<i>Micromys minutus</i>	Harvest Mouse	17	
<i>Grammonys dolichurus</i>	Long-tailed Thicket Rat	8	8
<i>Arvicanthis niloticus</i>	Nile Rat	8	8
G <i>Pseudomys australis</i> Gray	Minnie Downs River Mouse	13	3
(Australia)			
<i>Mus musculoides</i>	Pygmy Mouse	2	
S <i>Notomys alexis</i> Thomas	Brown Hopping Mouse	11	
(Australia)			
<i>Acomys cahirinus</i>	Arabian Spiny Mouse	18	18
<i>Galea musteloides</i>	Cuis	22	22 (3)
<i>Dolichotis patagonum</i>	Patagonian Cavy	8	8 (4)
<i>Chinchilla laniger</i>	Chinchilla	6	6 (6)
<i>Octodon degus</i>	Degu	6	6 (5)
<i>Proechimys guairae</i>	Casiragua	6	6
CARNIVORA			
<i>Canis lupus</i>	Canadian Timber Wolf	1	1
<i>Chrysocyon brachyurus</i>	Maned Wolf	1	
<i>Selenarctos thibetanus</i>	Asiatic Black Bear	2	
<i>Ursus arctos</i>	Brown Bear	2	2
<i>Ailuropoda melanoleuca</i>	Giant Panda	2	
<i>Ictonyx striatus</i>	Zorilla	2	
<i>Suricata suricatta</i>	Meerkat	10	
<i>Acinonyx jubatus</i>	Cheetah	1 (1)	
PINNIPEDIA			
<i>Zalophus californianus</i>	Californian Sealion	2	2 (1)
PERISSODACTYLA			
<i>Equus przewalskii</i>	Przewalski's Wild Horse	1	1
<i>Rhinoceros unicornis</i>	Great Indian Rhinoceros	1 (1)	
<i>Diceros bicornis</i>	Black Rhinoceros	1 (1)	
ARTIODACTYLA			
<i>Sus scrofa</i>	Wild Boar	12	12
<i>Tayassu tajacu</i>	Collared Peccary	3	3 (2)
<i>Lama guanicoe</i>	Guanaco	2	2
<i>Camelus bactrianus</i>	Bactrian Camel	2	2
<i>Dama dama</i>	Fallow Deer	4	4
<i>Axis axis</i>	Spotted Deer	1	1
<i>Cervus timorensis</i>	Timor Deer	5	5 (2)
<i>Giraffa camelopardalis</i>	Giraffe	1	1
<i>Tragelaphus strepsiceros</i>	Greater Kudu	1	1
<i>Bos grunniens</i>	Yak	3	3
<i>Bison bison</i>	North American Bison	1	1
<i>Kobus ellipsiprymnus</i>	Common Waterbuck	1	
<i>Oryx tao</i>	Scimitar-horned Oryx	5	
<i>Damaliscus dorcas</i>	Blesbok	1	1 (1)
<i>Antilope cervicapra</i>	Blackbuck	12	11 (3)
<i>Capra falconeri</i>	Markhor	9	4 (3)
<i>Ammotragus lervia</i>	Barbary Sheep	28	27 (7)
<i>Ovis musimon</i>	Mouflon	6	6 (2)
<i>Ovis canadensis</i>	Bighorn Sheep	1	1



		Total number acquired	Number born or hatched in the Collections
DOMESTIC	Dorset Down Sheep	1	
	Goat	14	14
	Wessex Saddle-backed Pigs	6	
<b>Birds</b>			
RHEIFORMES			
	<i>Rhea americana</i>	1 (1)	
SPHENISCIFORMES			
	<i>Eudyptes crestatus</i>	9	
PELECANIFORMES			
	<i>Sula bassanus</i>	1	
	<i>Phalacrocorax aristotelis</i>	2	
	<i>Phalacrocorax albiventer</i>	1	
CICONIIFORMES			
	<i>Butorides striatus</i>	2	
	<i>Cochlearius cochlearius</i>	1	
	<i>Threskiornis aethiopica</i>	2	2
G	<i>Pseudibis papillosa</i> Temminck (S.E. Asia)	3	
	<i>Phoenicopterus ruber chilensis</i>	3	
ANSERIFORMES			
	<i>Dendrocygna bicolor</i>	3	
	<i>Dendrocygna autumnalis</i>	4	
	<i>Anser caerulescens</i>	1	1
	<i>Anser canagicus</i>	2	
	<i>Branta leucopsis</i>	1	1
	<i>Branta canadensis</i>	1	1
	<i>Branta sandvicensis</i>	7	7 (3)
	<i>Aix galericulata</i>	3	3 (1)
FALCONIFORMES			
	<i>Heterospizias meridionalis</i>	1	
GALLIFORMES			
	<i>Tetrao urogallus</i>	3	
	<i>Lagopus lagopus</i>	6	
	<i>Lophortyx californica</i>	1	
	<i>Coturnix chinensis</i>	2	2 (1)
	<i>Lophura nycthemerus</i>	7	7
	<i>Lophura swinhoii</i>	3	3
	<i>Lophura imperialis</i>	1	1
	<i>Syrnaticus ellioti</i>	1	1
	<i>Syrnaticus reevesii</i>	5	4
	<i>Chrysolophus pictus</i>	7	6
	<i>Chrysolophus amherstiae</i>	7	7
	<i>Pavo cristatus</i>	3	3
	<i>Numida meleagris</i>	2 (2)	
GRUIFORMES			
	<i>Anthropoides paradisea</i>	3	
S	<i>Rallus philippensis</i> Linné (Australasia)	4	
CHARADRIIFORMES			
	<i>Recurvirostra avosetta</i>	6	
	<i>Haematopus ostralegus</i>	1	1
	<i>Vanellus tricolor</i>	4	
	<i>Charadrius hiaticula</i>	2	
	<i>Philomachus pugnax</i>	3	
	<i>Calidris canutus</i>	2	



		Total number acquired	Number born or hatched in the Collections
<i>Burhinus magirostris</i>	Southern Stone Curlew	2	
<i>Burhinus oedicnemus</i>	Stone Curlew	2	
<i>Glareola pratincola</i>	Collared Pratincole	2	
<i>Larus cirrocephalus poiocephalus</i>	Grey-headed Gull	3	3 (1)
s <i>Sterna bergii</i> Lichtenstein (African Coasts to S.E. Asia, Japan and Australasia)	Crested Tern	2	
<i>Uria aalge</i>	Guillemot	1	
COLUMBIFORMES			
<i>Ducula bicolor</i>	Pied Imperial Pigeon	1	
<i>Ducula badia cuprea</i>	Jerdon's Imperial Pigeon	2	2
<i>Columba picazuro</i>	Picazuro Pigeon	2	2
<i>Streptopelia vinacea</i>	Vinaceous Dove	1	1 (1)
<i>Streptopelia chinensis</i>	Chinese Necklace Dove	2	2
<i>Geotrygon versicolor</i>	Mountain Witch Dove	2	
PSITTACIFORMES			
<i>Ara ararauna</i>	Blue and Yellow Macaw	1	
<i>Ara macao</i>	Scarlet Macaw	1	
<i>Ara chloroptera</i>	Green-winged Macaw	1	
<i>Myiopsitta monachus</i>	Quaker Parrakeet	1	
<i>Brotogeris versicolorus chiriri</i>	Canary-winged Parrakeet	1	
<i>Brotogeris pyrrhopterus</i>	Orange-flanked Parrakeet	2	
<i>Psittacus erithacus</i>	African Grey Parrot	2	
<i>Eclectus roratus</i>	Eclectus Parrot	1	
<i>Agapornis fischeri</i>	Fischer's Lovebird	10	8
<i>Platycercus eximius</i>	Eastern Rosella	1	
<i>Nymphicus hollandicus</i>	Cockatiel	9	9
CUCULIFORMES			
<i>Tauraco corythaix</i>	Knysna Touraco	5	5 (4)
STRIGIFORMES			
<i>Tyto alba</i>	Barn Owl	2	
<i>Otus scops</i>	Scops Owl	6	3
<i>Otus bakkamoena</i>	Collared Scops Owl	3	
<i>Bubo bubo ascalaphus</i>	Savigny's Eagle Owl	1	1
<i>Bubo capensis mackinderi</i>	Kenya Eagle Owl	3	3
<i>Bubo africanus africanus</i>	Spotted Eagle Owl	1	1
<i>Pulsatrix perspicillata</i>	Spectacled Owl	1	
<i>Nyctea scandiaca</i>	Snowy Owl	4	4
<i>Athene noctua</i>	Little Owl	1	
<i>Ciccaba woodfordii nuchalis</i>	West African Wood Owl	1	1
<i>Strix aluco</i>	Tawny Owl	1	
APODIFORMES			
s <i>Urosticte benjamini</i> Bourcier (South America)	Whitetip	2	
CORACIIFORMES			
<i>Momotus subrufescens</i>	Rufous-bellied Motmot	2	
<i>Melittophagus bullockoides</i>	White-fronted Bee-eater	4	
<i>Coracias caudata</i>	Lilac-breasted Roller	3	
<i>Phoeniculus purpureus</i>	Green Wood Hoopoe	2	
<i>Tockus birostris</i>	Indian Grey Hornbill	3	
<i>Tockus erythrorhynchus</i>	Red-billed Hornbill	2	
<i>Tockus deckeni jacksoni</i>	Jackson's Hornbill	1	1
<i>Anthracoceros malayanus</i>	Black Hornbill	2	
<i>Bucorvus abyssinicus</i>	Northern Ground Hornbill	1	
PICIFORMES			
<i>Eubucco bourcierii</i>	Red-headed Barbet	2	



		Total number acquired	Number born or hatched in the Collections
	<i>Megalaima chrysopogon</i>	1	
	<i>Megalaima mystacophanos</i>	1	
s	<i>Tricholaema diadematum</i> (Heuglin) (Central Africa)	2	
	<i>Lybius bidentatus</i>	2	
	<i>Trachyphonus erythrocephalus</i>	1	
	<i>Trachyphonus darnaudii</i>	2	
	<i>Ramphastos sulfuratus</i>	2	
PASSERIFORMES			
	<i>Chiroxiphia pareola</i>	1	1
	<i>Calyptomena viridis</i>	1	
s	<i>Chloropsis cyanopogon</i> (Temminck) (South-east Asia)	2	
	<i>Irena puella</i>	2	
	<i>Telophorus dohertyi</i>	2	
	<i>Copsychus malabaricus</i>	1	
	<i>Garrulax leucolophus</i>	2	
	<i>Garrulax poecilorhynchus</i>	3	
s	<i>Malurus splendens</i> Quoy & Gaimard (South-west Australia)	7	
	<i>Sitta castaneiventris</i>	1	
	<i>Phylidonyris novaehollandiae</i>	2	
	<i>Gubernatrix cristata</i>	1	
	<i>Passerina caerulea</i>	2	
	<i>Cyanerpes cyaneus</i>	1	
	<i>Lonchura maja</i>	2	
	<i>Poephila acuticauda</i>	2	
	<i>Emblema guttata</i>	2	
	<i>Ploceus cucullatus</i>	1	
	<i>Euplectes progne delamerei</i>	2	
	<i>Lamprotornis purpureus</i>	1	
	<i>Spreo superbus</i>	3	3
	<i>Garrulus glandarius</i>	1	
	<i>Pyrrhocorax graculus</i>	1	1
<b>Reptiles</b>			
TESTUDINES			
	<i>Chrysemys scripta elegans</i>	12	1
	<i>Graptemys</i> sp. inc.	1	
	<i>Mauremys caspica leprosa</i>	4	
	<i>Emys orbicularis</i>	1	
	<i>Cyclemys dentata</i>	1	
	<i>Cuora trifasciata</i>	1	
	<i>Testudo graeca</i>	3	
CROCODILIA			
	<i>Caiman crocodilus</i>	2	
	<i>Paleosuchus palpebrosus</i>	5	
SAURIA			
	Sp. inc.	1	
	<i>Phyllodactylus tuberculosus</i>	1	
	<i>Hemidactylus brooki</i>	1	
	<i>Tarentola mauritanica</i>	2	
	<i>Tarentola delalandii</i>	15	
	<i>Phelsuma</i> sp.	4	
	<i>Iguana iguana</i>	1	
	<i>Sceloporus orcutti</i>	3	
	<i>Agama agama</i>	1	



		Total number acquired	Number born or hatched in the Collections
<i>Physignathus concinnus</i>	Thailand Water Dragon	2	2
<i>Hydrosaurus amboinensis</i>	Fin-tailed Lizard	1	
<i>Uromastyx acanthinurus</i>	Bell's Dabb Lizard	1	
<i>Chamaeleo dilepis</i>	Flap-necked Chameleon	2	
<i>Chamaeleo hoehnelii</i>	Hoehnel's Two-banded Chameleon	2	
<i>Chamaeleo jacksoni</i>	Jackson's Chameleon	8	
Sp. inc.	Skink	6	
<i>Lacerta viridis</i>	Green Lizard	1	
<i>Gallotia galloti</i>	Gallot's Lizard	6	
<i>Tupinambis nigropunctatus</i>	Black-pointed Tegu	2	
<i>Varanus exanthematicus</i>	Bosc's Monitor	5	
s <i>Gerrhonotus liocephalus infernalis</i> Baird (Texas)	Texas Alligator Lizard	1	
s <i>Gerrhonotus multicarinatus webbiai</i> Baird (Nevada and California)	San Diego Alligator Lizard	1	
<i>Cordylus warreni breyeri</i>	Warren's Armoured Lizard	2	
<i>Platysaurus guttatus</i>	Rhodesian Rock Lizard	2	
SERPENTES			
<i>Python regius</i>	Royal Python	5	
<i>Eunectes murinus</i>	Anaconda	18	17
<i>Boa constrictor</i>	Boa Constrictor	2	
<i>Natrix natrix</i>	Grass Snake	2	
<i>Thamnophis sirtalis</i>	Common Garter Snake	1	
<i>Thamnophis sauritus</i>	Ribbon Snake	1	
<i>Boaedon fuliginosus</i>	African House Snake	3	
<i>Lycophidion capensis</i>	Cape Wolf Snake	1	
<i>Pseudaspis cana</i>	Mole Snake	1	
<i>Elaphe guttata</i>	Corn Snake	1	
<i>Philothamnus irregularis</i>	Spotted Leaf-snake	1	
<i>Leiophis gigas</i>	Boipevussu Snake	12	12
<i>Grayia smythii</i>	Smyth's Snake	1	
<i>Malpolon moilensis</i>	Moila Snake	1	
<i>Dispholidus typus</i>	Boomslang	1	
<i>Bitis arietans</i>	Puff Adder	1	
<i>Bitis gabonica</i>	Gaboon Viper	15	
<i>Cerastes cerastes</i>	Horned Cerastes Viper	1	
<i>Echis carinatus</i>	Saw-scaled Viper	1	
<i>Agkistrodon contortrix mokeson</i>	Copperhead	2	
<i>Bothrops lanceolatus</i>	Fer-de-lance	1	
AMPHIBIA			
<i>Ambystoma maculatum</i>	American Spotted Salamander	2	
<i>Pipa pipa</i>	Surinam Toad	9	4
<i>Alytes obstetricans</i>	Midwife Toad	1	
<i>Bufo viridis arabicus</i>	Green Toad	2	
<i>Bufo bufo</i>	Common European Toad	2	
<i>Bufo americanus</i>	American Toad	1	
<i>Bufo blombergi</i>	Blomberg's Toad	2	
<i>Bufo granulatus</i>	Granulated Toad	1	
<i>Bufo valliceps</i>	Gulf Coast Toad	1	
Sp. inc.	Tree-frog	1	
<i>Hyla cinerea</i>	Carolina Tree-frog	1	
<i>Hyla albopunctata</i>	Spix's Hyla	1	
<i>Hyla rubra</i>	Daudin's Hyla	7	
s <i>Hyla marmorata</i> (Laurenti) (South America)		1	
s <i>Hyla minuta</i> (W. Peters) (Northern South America)		1	



		Total number acquired	Number born or hatched in the Collections
G	<i>Microhyla pulchra</i> (Hallowell) (China and Hongkong)	6	
s	<i>Eleutherodactylus johnstonei</i> Barbour (The Lesser Antilles)	1	
	<i>Ceratophrys ornata</i> Painted Escuerzo	1	
s	<i>Leptodactylus fuscus</i> (Schneider) (Northern South America)	2	
	<i>Pyxicephalus adspersus</i> African Bull Frog	5	
	<i>Hyperolius</i> sp.	20	
	<i>Leptopelis bocagei</i> Bocage's Frog	1	

## WHIPSNADE PARK

### Mammals

#### MARSUPIALIA

<i>Protemnodon rufogrisea</i>	Red-necked Wallaby	55	55 (4)
<i>Macropus kanguru</i>	Grey Kangaroo	1	1 (1)

#### PRIMATES

<i>Galago crassicaudatus</i>	Thick-tailed Bushbaby	2	2
<i>Macaca mulatta</i>	Rhesus Macaque	1	1

#### RODENTIA

<i>Dolichotis patagonum</i>	Mara	9	9 (4)
<i>Dasyprocta punctata</i>	Central American Agouti	2	2

#### CARNIVORA

<i>Canis lupus</i>	Canadian Timber Wolf	7	7
<i>Lycaon pictus</i>	Cape Hunting Dog	1	
<i>Tremarctos ornatus</i>	Spectacled Bear	Number Unknown	Number Unknown
<i>Thalarctos maritimus</i>	Polar Bear	2	2 (2)
<i>Ailurus fulgens</i>	Red Panda	2	2
<i>Felis lynx</i>	Northern Lynx	1	1
<i>Felis serval</i>	Serval	8	8 (4)
<i>Panthera leo</i>	Lion	3	3 (3)
<i>Panthera tigris</i>	Tiger (Sumatran form)	8	8 (2)
<i>Acinonyx jubatus</i>	Cheetah	6	6 (3)

#### PINNIPEDIA

<i>Otaria byronia</i>	Southern Sealion	2	
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#### PERISSODACTYLA

<i>Equus przewalskii</i>	Przewalski's Horse	4	3 (1)
<i>Equus zebra</i>	Mountain Zebra	2	
<i>Equus burchelli</i>	Common Zebra	4	
<i>Asinus hemionus</i>	Persian Onager	4 (1)	3 (1)
<i>Diceros simus</i>	White Rhinoceros	8 (1)	6 (3)

#### ARTIODACTYLA

<i>Sus scrofa</i>	Wild Boar	7	7 (7)
<i>Tayassu tajacu</i>	Collared Peccary	1	1 (1)
<i>Hippopotamus amphibius</i>	Hippopotamus	2	2
<i>Lama glama</i>	Llama	13	13 (3)
<i>Lama guanicoe</i>	Guanaco	7	7 (1)
<i>Camelus dromedarius</i>	Arabian Camel	3	2 (1)
<i>Dama dama</i>	Fallow Deer	16	16
<i>Axis axis</i>	Axis Deer	11	11 (7)
<i>Axis porcinus</i>	Hog Deer	12	12 (2)
<i>Cervus duvauceli</i>	Barasingha	6	6 (4)
<i>Cervus nippon</i>	Japanese Sika Deer	3	3
	Formosan Sika Deer	9	9 (5)



		Total number acquired	Number born or hatched in the Collection
<i>Cervus elaphus</i>	Red Deer	12	12 (4)
	Wapiti	4	4 (3)
<i>Elaphurus davidianus</i>	Pere David's Deer	11 (1)	10 (2)
<i>Alces alces</i>	Moose	3	3 (3)
<i>Rangifer tarandus</i>	Reindeer	3	3 (3)
<i>Hydropotes inermis</i>	Chinese Water Deer	21	20
<i>Tragelaphus spekei</i>	Sitatunga	5	5 (2)
<i>Boselaphus tragocamelus</i>	Nilgai	4	4 (3)
<i>Bos grunniens</i>	Yak	7	1 (1)
<i>Syncerus caffer</i>	Cape Buffalo	1	1
<i>Bison bonasus</i>	European Bison	5	3 (1)
<i>Bison bison</i>	American Bison	1	1
<i>Damaliscus dorcas</i>	Blesbok	4 (2)	2
<i>Connochaetes taurinus</i>	Brindled Gnu	5	5 (5)
<i>Gazella thomsoni</i>	Thomson's Gazelle	2	2 (1)
<i>Ovibos moschatus</i>	Musk Ox	1	1 (1)
<i>Ovis musimon</i>	Mouflon	14	14 (4)
DOMESTIC			
	Ponies	1	1
	Vietnam Pot-Bellied Pig	10	9 (5)
	Ankole Ox	1	1
	Windsor White Goat	9	9 (3)
	Four-horned Sheep	19	19 (5)
<b>Birds</b>			
RHEIFORMES			
<i>Rhea americana</i>	Common Rhea	7	7 (5)
CASUARIIFORMES			
<i>Casuarius casuarius</i>	Australian Cassowary	1	
SPHENISCIFORMES			
<i>Aptenodytes patagonica</i>	King Penguin	1	1
<i>Spheniscus humboldti</i>	Humboldt's Penguin	3	3 (2)
CICONIIFORMES			
<i>Ciconia ciconia</i>	White Stork	3	
<i>Phoenicopterus ruber ruber</i>	Rosy Flamingo	4	4
ANSERIFORMES			
<i>Cygnus atratus</i>	Black Swan	2	2 (1)
<i>Cereopsis novae-hollandiae</i>	Cereopsis Goose	3	3 (1)
<i>Anser caerulescens</i>	Lesser Snow Goose	6	6
<i>Anser albifrons flavirostris</i>	Greenland White-fronted Goose	1 (1)	
<i>Anser indicus</i>	Bar-headed Goose	4	4
<i>Branta sandvicensis</i>	Hawaiian Goose	4 (4)	
<i>Anser canagicus</i>	Emperor Goose	6	6 (2)
<i>Branta canadensis</i>	Canada Goose	2 (2)	
<i>Branta ruficollis</i>	Red-breasted Goose	9	9
<i>Anas strepera</i>	Gadwall	4	
<i>Anas falcata</i>	Falcated Teal	3	3
<i>Anas sibilatrix</i>	Chiloe Wigeon	4	4
<i>Aix sponsa</i>	Carolina Duck	8	8 (1)
<i>Aix galericulata</i>	Mandarin Duck	8	8
GRUIFORMES			
<i>Grus vipio</i>	White-naped Crane	1 (1)	
<i>Bucconas carunculatus</i>	Wattled Crane	1	
<i>Balearica pavonina pavonina</i>	West African Crowned Crane	7	
<i>Ardeotis kori struthiunculus</i>	Kori Bustard	4 (1)	



## COLUMBIFORMES

*Goura victoria*

Victoria Crowned Pigeon

2

## PSITTACIFORMES

*Nymphicus hollandicus*

Cockatiel

2

2

*Ara ararauna*

Blue and Yellow Macaw

2

*Amazona aestiva aestiva*

Blue-fronted Parrot

1

*Amazona ochrocephala ochrocephala*

Yellow-headed Parrot

1

*Psephotus haematonotus*

Red-rumped Parrakeet

9

4 (1)

*Melopsittacus undulatus*

Budgerigar

3

3

## STRIGIFORMES

*Bubo capensis mackinderi*

Kenya Eagle Owl

2

2

## PASSERIFORMES

*Uraeginthus bengalus*

Cordon Bleu

2

*Estrilda caerulescens*

Lavender Finch

2

*Estrilda astrild astrild*

St Helena Waxbill

2

*Estrilda subflava*

Golden-breasted Waxbill

4

*Amandava amandava*

Avadavat Finch

2

## APPENDIX 5

# List of Donors of Animals to the Society

## REGENT'S PARK

Albany Street Police Station, 1 Garter Snake,  
1 Grass Snake

Allen, Mr E., 2 Desert Scorpions

American Institute for Foreign Study, 1 Puff  
Adder, 1 Mole Snake, 1 Cape Wolf Snake,

4 African House Snakes, 4 Skinks,

6 Jackson's Chameleons, 1 Flap-necked

Chameleon, 2 Hoehneli's Two-banded

Chameleons

Anscombe, Mrs, 2 White-crested Laughing  
Thrushes

Bartram, Messrs G. &amp; T., 1 Crab-spider

BBC TV, 2 Rhodesian Rock Lizards

Berman, Mr John, 1 Harvestman

Bird, Mr D., 6 Cichlids, 1 Diving Beetle

Booth, Dr B., 1 Fer-de-lance, 6 Gallot's

Lizards, 6 Delalande's Geckos, 1 Frog,

5 Bird-eating Spiders, 1 Whip Scorpion

Border, Mr B., 17 Harvest Mice

Bourke, Mr D., 2 Centipedes

Brook, Mr J. H., 1 Horned Cerastes Viper,  
1 Moila Snake, 1 GeckoBroughton, Mr F. B., Cultures of field  
crickets and tropical crickets

Broyles, Mr W., 1 Spectacled Cayman

Bruce, Mr D., 1 Scarlet Macaw

Burr, Chief Inspector, 1 European Pond  
Tortoise

Campbell, Mr P., 1 Red-eared Terrapin

Carey, Mr Paul, Stick Insects

Chalk, Miss G., 2 Red-eared Terrapins

Chandler, Miss, 1 Spanish Terrapin

China, Government of the People's Republic  
of, 2 Giant PandasClark, Mrs K., 1 Red-legged Honey  
CreeperClarke, Dr K., Butterfly larvae (*Papilio  
polites*)

Clarke, Mrs, 1 Tortoise

Cody, Mr Gary, 1 Stag Beetle

Cox, Mr, 1 Boa Constrictor

Dreezer, Mr, 1 Giant Land Snail

Duplaix-Hall, Mrs N., 4 Red-billed

Whistling Ducks, 3 Fulvous Whistling  
Ducks

Elliott, Mr J. C. H., 1 Skink

Ellis, Mr F., 1 Porcupine Fish

England, Mr D., 1 Chestnut-bellied  
Nuthatch

Eyre, Mr N., 7 Landcrabs

Felton, Mr J. L., 1 Giant Cockroach

Frederick, Mr M., 1 Royal Python

Fulmar, Mr C., 2 Moorish Geckos

Gould, Miss, 2 Orange-flanked Parrakeets

Grange, Mrs V., 2 White-headed Mannakins

Gray, Mrs, 1 Spectacled Cayman

Gripper, Mr A. S., Frog spawn

Harman, Mr A., 1 Scorpion, 1 Bird-eating  
Spider, 7 Orb-web Spider cocoons,

24 Stick Insect Ova, 1 Mantis ootheca

Harmsworth, Mr G., 1 Green Cardinal

Hartley, Dr, 12 Bush Crickets

Heath, Mr E., 1 Tortoise



- Heath, Mr G., 2 Mantids  
 Henwood, Mr G. A., 1 Desert Beetle,  
 4 Click Beetles, 14 Chafer Beetles,  
 1 Longhorn Beetle, 2 Hunting Beetles,  
 1 Carabid Beetle, 6 Ground Beetles,  
 7 Scarab Beetles, 2 Rove Beetles,  
 15 Desert Scorpions, 7 Imperial Scorpions,  
 4 Jungle Scorpions, 5 Butterfly pupae,  
 5 Moth pupae, 3 Centipedes,  
 47 Millipedes, 1 Assassin Bug, 1 Mantid  
 1 Ant Lion, 1 King Cricket, 1 Ichneumon  
 Wasp  
 Holnes, Mr H. J., 1 Catfish  
 Honour, Mrs, 2 Mozambique Mouth-  
 brooding Cichlids  
 Hucks, Mr, 1 Iguana  
 Irwin, Karen, Stick Insects  
 James, Mr C., 1 Remora  
 Jenkinson, Mrs D., 1 Flap-necked  
 Chameleon  
 Jersey Zoological Park, 2 Common  
 Marmosets  
 Jones, Mrs A., 2 African Grey Parrots  
 Keeling, Mr J. A., 14 Crayfish  
 King, Mrs M., 1 Black-pointed Tegu Lizard  
 Kirkaldie, Mrs, 1 Bell's Dabb Lizard  
 Kobenhavns Zoologiske Have, 4 Ring-  
 tailed Lemurs  
 Koenig, Frau L., 3 Scops Owls  
 Kudrna, Mr D., Plant Bugs, Assassin Bugs  
 Lang, Mr M. A., 1 Red-eared Terrapin,  
 1 Map Terrapin  
 Lawrence, Mr M., 2 Warren's Armoured  
 Lizards  
 Livett, Miss J., 1 Tawny Owl  
 Lowe, Mr R. T., 1 Crab Spider, 1 Chafer  
 Beetle, Stick Insects  
 Macfarlane, Mrs, 1 Tortoise  
 Mander, Mr W., 1 Red-eared Terrapin,  
 1 Axolotl  
 Marcuson, Mr A., 1 Grass Snake  
 Martins Aquaria, 1 Giant Gourami  
 Massey, Mr W., 2 American Catfish,  
 5 Goldfish  
 McGee, Mrs, 1 Rufous-necked Weaver  
 Mellor, Mr D., 1 Fairy Bluebird  
 Milne, Mr P. L., Stag Beetle Larvae  
 Minden, Mr L., 1 Jackson's Chameleon  
 Moon, Mr D., Moth Ova  
 Moore, Mr W. J., 1 Oscar's Cichlid  
 Newman, Mr J., 2 Millipedes, 1 Centipede,  
 1 Spider  
 Newmark, Messrs J. & G., 8 Tree-frogs,  
 2 Frogs, 1 Granulated Toad,  
 12 Millipedes, 1 Centipede, 7 Bird-eating  
 Spiders, 1 Jungle Scorpion, 1 Orb-web  
 Spider, 1 Hunting Spider, 3 Praying  
 Mantis, 10 Singing Beetles, 1 Click  
 Beetle, 1 Ground Beetle, 2 Chafer Beetles,  
 1 Buprestid Beetle, 3 Long-horn Beetles,  
 8 Rhinoceros Beetles  
 Nolan, Mr M., 2 Orb-web Spiders, 1 Bird-  
 eating Spider  
 Olsen, Mrs D., 1 Red-eared Terrapin,  
 1 Three-banded Terrapin  
 Patrick, Mr J., 1 Rosella Parrakeet  
 Perth Zoo, 7 Splendid Fairy Wrens,  
 2 Crested Terns, 4 Banded Rails,  
 2 Southern Stone Curlews, 4 Banded  
 Plovers, 2 Yellow-winged Honeyeaters  
 Peters, Mrs, 1 Eel  
 Philipps, The Hon. C., 1 Blue and Yellow  
 Macaw, 1 Eclectus Parrot  
 Pinder, Mr C., 1 Rhinoceros Beetle,  
 1 Cockchafer, 5 Spiders  
 Platt, Mr S., 1 American Toad, 1 Gulf  
 Coast Toad  
 Pollock, Mr M. K., 2 Carp  
 Pugh, Mr, 2 Daudin's Tree-frogs  
 Reynolds, Mr, 1 Corn Snake  
 Richardson, Mr A., 1 Black-pointed Tegu  
 Lizard, 1 Mirror Carp  
 Riley, Mr A., 1 Agama  
 Rodway, Mr P., 4 Chinese Hamsters  
 Romer, Mr J., 6 Tree-frogs  
 RSPCA, 1 Savannah Hawk, 1 Shag,  
 1 Spanish Terrapin, 2 Red-eared  
 Terrapins, 1 Skink, 1 Green Lizard,  
 60 Eels  
 Sawyer, Mrs F., 1 Red-eared Terrapin  
 Searle, Dr K., 1 Indian Giant Squirrel  
 Southon, Mr M., 1 Oldham's Terrapin  
 Stevens, Mrs, 1 Eel  
 Symondson, Mr R., 1 Bird-eating Spider  
 Taylor, Mrs J., 1 Crab-spider Cocoon  
 Trevillion, Mr P., 1 Crayfish  
 Triss, Mrs P., 1 Quaker Parrakeet  
 Trollope, Mr G., 1 Barn Owl  
 Vanner, Mr J., 2 Ringed Plovers  
 Wadworth, Mrs B., 2 Spanish Terrapins  
 Warr, Mr T., 3 Silver Dollar Fish  
 Warrell, Dr, 1 Smyth's Snake, 1 Spotted  
 Leaf-snake  
 Weaver, Mr N., 2 Red-eared Terrapins  
 Webster, Mr G., 1 Brook's Gecko  
 White, Mr I., 2 Fischer's Lovebirds  
 Whiteley, Mrs B., 1 Purple Glossy Starling  
 Whitman, Miss J., 1 Ribbon Snake  
 Working Men's Club, Enfield, 1 Batfish  
 Young, Mrs J. D., 1 Gannet, 1 Guillemot
- WHIPSNADDE PARK  
 Ammetts, Mr G. C., 1 Blue-fronted Parrot  
 Brewster, Mr M., 2 Blue and Yellow  
 Macaws  
 Penn, Miss S., 1 Black Rabbit, 2 Guinea  
 Pigs



## Books presented to the library

- BOORER, M.  
BOYLE, C. L.  
BRITISH MUSEUM  
(NATURAL HISTORY),  
TRUSTEES OF
- CLOUDSLEY-THOMPSON,  
PROFESSOR J. L.  
COCKRILL, W. R.  
COUNCIL FOR NATURE
- DU BOULAY, G. H.  
HIROHITO, HIS MAJESTY  
EMPEROR OF JAPAN  
INGRAMS, MRS H.
- KUWAIT INSTITUTE FOR  
SCIENTIFIC RESEARCH  
LANE, F. W.  
MACDONALD, J. D.  
MITCHELL BEAZLEY LTD
- PERRETT, R.  
PRIORY PRESS
- RYDER-DAVIES, P.  
SILYN ROBERTS,  
AIR VICE-MARSHAL G.  
SPEARMAN, R. I. C.  
STATE CENTRAL SCIENTIFIC  
MEDICAL LIBRARY,  
MOSCOW
- WARD, ROWLAND, LTD
- WOOD, G.
- List of the animals mentioned in the Bible. Compiled by A. Shulov. [N.d.]  
Britannica book of the year, 1973.  
Bulletin of the British Museum (Natural History). Entomology: Vol. 28, nos. 1, 3-7; Vol. 29, nos. 1-8; Vol. 30, nos. 1-8; Vol. 31, nos. 1-3, 5; Suppl. 20-21, 23. Geology: Vol. 23, nos. 3-7; Vol. 24, nos. 1-7; Vol. 25, nos. 1-3; Suppl. 10. History: Vol. 3, no. 8; Vol. 4, nos. 1-5. Zoology: Vol. 25, nos. 2, 8-9; Vol. 26, nos. 1-6; Vol. 27, nos. 1-4; Suppl. 6.  
Insects and other arthropods of medical importance. Ed. by K. G. V. Smith. 1973.  
Type-specimens of birds in the British Museum (Natural History). Vol. 3: Systematic index. By R. L. M. Warren & C. J. O. Harrison. 1973  
The ecology of oases. By J. L. Cloudsley-Thompson. 1974.  
Spiders and scorpions. By J. L. Cloudsley-Thompson. 1973.  
The husbandry and health of the domestic buffalo. Ed. by W. R. Cockrill. 1974.  
Predatory birds in Britain. By the Avian Predators Working Party. (N.d.).  
Predatory mammals in Britain; a code of practice for their management. 1973.  
The cranial arteries of mammals. By G. H. du Boulay & P. M. Verity. 1973.  
The sea-stars of Sagami Bay, collected by His Majesty the Emperor of Japan; described by Ryoji Hayashi. 1973.  
Proceedings of the Zoological Society of London 1921-38.  
Reports of the Zoological Society of London 1912-51.  
Transactions of the Zoological Society of London. Vol. 21-24, 1924-38.  
Fishes of Kuwait. By K. Kuronuma & Y. Abe. 1972.
- The African ark. By R. J. Prickett. 1974.  
Birds of Australia: a summary of information. By J. D. Macdonald. 1973.  
Carotenoids. Ed. by O. Isler. 1971.  
The Mitchell Beazley atlas of world wildlife. 1973.  
The Mitchell Beazley world atlas of birds. 1974.  
Die zoologische Buchillustration: ihre Bibliographie und Geschichte. By C. Nissen. 1969-.  
Collecting exotic fish. By R. B. Perrett. 1973.  
Badgers. By A. Bartram. 1974. (Young naturalist books.)  
Bats. By E. & O. Turner. 1974. (Young naturalist books.)  
Bees and wasps. By J. Reynolds. 1974. (Young naturalist books.)  
Birds of prey. By J. Reynolds. 1974. (Young naturalist books.)  
Deer. By R. Whitlock. 1974. (Young naturalist books.)  
Foxes. By A. Bartram. 1974. (Young naturalist books.)  
Frogs and toads. By E. & C. Turner. 1974. (Young naturalist books.)  
Hedgehogs. By A. Bartram. 1974. (Young naturalist books.)  
Otters. By R. Whitlock. 1974. (Young naturalist books.)  
Rabbits and hares. By R. Whitlock. 1974. (Young naturalist books.)  
Rats and mice. By R. Whitlock. 1974. (Young naturalist books.)  
Snakes and lizards. By E. & C. Turner. 1974. (Young naturalist books.)  
Squirrels. By R. Whitlock. 1974. (Young naturalist books.)  
Stoats and weasels. By J. Reynolds. 1974. (Young naturalist books.)  
Whipsnade. By P. Street. 1953.  
A dictionary of natural history. 1815.
- The integument: a textbook of skin biology. By R. I. C. Spearman. 1973.  
Fiziologiya v'ysheĭ nervnoi deyatel'nosti. Chast'2: Uslovn'ye refleksy i adaptivnoe povedenie. 1971.  
Modelirovanie nevrogennykh zabolevaniĭ cheloveka v ěksperimente na obez'yanakh. By V. G. Startsev. 1971.  
Rowland Ward's records of big game. 15th ed. (Africa). Comp. & ed. by A. A. Best & W. G. Raw. 1973.  
The Guinness book of records. 21st ed. Ed. by N. & R. McWhirter. 1974.  
In search of the red ape. By J. MacKinnon. 1974.



# Donations to The Zoological Record Fund

	£
American Museum of Natural History	204.56
Benbow, C. H.	10.00
British Museum (Natural History)	1,450.00
Conchological Society of Great Britain and Ireland	2.00
Entomological Society of America	85.45
Malacological Society of London	2.10
Michigan, University of	41.87
Paleontological Society	20.66
Royal Entomological Society (Vol 107)	2.50
(Vol 108)	10.00
	1,829.14

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## Meetings during 1975

### Scientific Meetings at 5.00 pm

Tuesday, 11th February  
 Tuesday, 11th March  
 Tuesday, 8th April  
 Tuesday, 13th May  
 Tuesday, 10th June  
 Tuesday, 14th October  
 Tuesday, 11th November  
 Tuesday, 9th December

### Symposia

Thursday and Friday, 10th-11th April: 'The biology of cephalopods'.  
 Thursday and Friday, 30th-31st October: 'Comparative biology of skin'.



# Financial Accounts

## Balance Sheet at 31st December 1974

1973			
£	£		£
	205,436	Sundry creditors and receipts in advance	222,840
	87,126	Bank overdraft	181,215
	91	Heer Bequest	91
	5,582	Fantham Bequest (note 1)	6,372
	14,576	Nuffield Institute Fund (note 2)	16,004
	22,080	Special Scientific Fund	22,080
	12,131	Wolfson Donation Fund (note 3)	—
	27,086	Publications Funds (note 4)	—
	16,383	Composition Fund	16,103
	1,091	Staff Benevolent Fund (note 5)	1,414
		Reserves	
129,536		General Reserve (note 6)	152,055
287,001		Buildings Replacement Fund (note 7)	133,259
100,000		Pensions Contributions Reserve	100,000
50,000		Depreciation of Investments Reserve (note 8)	149,204
	566,537		534,518
	128,263	General Purposes Account	106,179
	<u>£1,086,382</u>		<u>£1,106,816</u>

For the notes which form part of these accounts see pages 47 and 48.

## 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 1974, 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  
14th February 1975



1973			
£	£		£
		<i>Freehold Property at Cost</i>	
	128,263	Whipsnade Park (note 9)	106,179
		<i>Stocks (note 10)</i>	
1,000		Scientific publications (nominal valuation)	1,000
56,359		Guides, books, etc.	7,671
19,727		Catering Departments—provisions, etc.	20,858
	77,086		29,529
	128,890	Sundry debtors and payments in advance	198,458
	630,775	Investments and deposits at cost (market value £310,876)	574,526
	13,658	Cash in hand	8,694
	107,710	Rebuilding Account (note 11)	110,888
	—	Publications Funds deficit (note 4)	19,588
	—	Income and Expenditure Account deficit	58,954
	<hr/>		<hr/>
	£1,086,382		£1,106,816
	<hr/>		<hr/>

TERENCE C. S. MORRISON-SCOTT  
*Treasurer*



# Income and Expenditure Account for the year ended 31st December 1974

1973	INCOME			
£	£		£	£
31,430		Members' subscriptions and entrance fees	32,651	
5,018		<i>Less</i> transferred to publications	6,103	
—	26,412		—	26,548
		Interest and dividends		
21,144		General	34,956	
5,715		Net income from De Arroyave Fund (note 12)	6,003	
57		Income from Davis Fund (note 13)	57	
—	26,916		—	41,016
		<i>Scientific</i>		
27,213		Sale of scientific publications	32,813	
13,273		Education scheme – visits	14,565	
2,463		Young Zoologists' Club	3,104	
16,522		International Zoo Yearbook	18,605	
—	59,471		—	69,087
		<i>Regent's Park</i>		
889,858		Admission of visitors to Gardens	1,036,005	
48,648		Admission of visitors to Aquarium	54,345	
21,071		Admission of visitors to Children's Zoo	22,055	
5,120		Riding receipts	6,187	
3,755		Push chairs, hire of	3,380	
81,870		Catering and other services, net income	52,249	
24,450		Zoo Restaurants Ltd.	28,857	
2,024		Television and film permits	1,925	
2,567		Animals	1,947	
9,048		Miscellaneous receipts	9,034	
—	1,088,411		—	1,215,984
		<i>Whipsnade</i>		
232,049		Admission of visitors to Park	236,553	
11,412		Admission of visitors to Children's Zoo	10,191	
10,534		Admission of visitors to Water Mammals Exhibit	10,308	
48,076		Admission of cars to Park	44,663	
2,961		Train receipts	65	
3,724		Riding receipts	3,439	
633		Push chairs, hire of	463	
12,271		Car parks – parking fees	11,050	
11,774		Animals	9,236	
26,300		Catering and other services, net income	3,287	
2,930		Miscellaneous receipts	2,860	
—	362,664		—	332,115
	—	Deficit carried to Balance Sheet		58,954

£1,563,874

£1,743,704

For the notes which form part of these accounts see pages 47 and 48.



1973	EXPENDITURE		£	£	£
£	£		£	£	£
	105,318	General administration			120,227
	26,000	Contribution to Buildings Replacement Fund			—
	4,894	Interest on overdraft			12,393
		<i>Pensions</i>			
7,642		Payments to pensioners		7,125	
46,049		Contribution to Trustees of Pension Fund		45,847	
<hr/>	53,691			<hr/>	52,972
		<i>Scientific</i>			
28,226		General scientific	33,717		
20,156		Wellcome Institute	31,472		
78,936		Nuffield Institute	98,483		
			<hr/>	163,672	
22,922		Library		27,343	
21,867		Scientific publications		31,222	
15,209		Education scheme		19,457	
5,292		Young Zoologists' Club		6,318	
16,298		International Zoo Yearbook		25,947	
<hr/>	208,906			<hr/>	273,959
		<i>Regent's Park</i>			
		<i>Menagerie</i>			
9,634		Rates and insurance	11,882		
349,110		Salaries	419,915		
83,821		Provisions	93,641		
62,905		Fuel, light, water, transport	95,342		
33,480		Miscellaneous	47,470		
			<hr/>	668,250	
		<i>Works</i>			
129,925		General maintenance	131,391		
4,883		Alterations	7,475		
			<hr/>	138,866	
26,420		Gardening		32,005	
40,246		Advertising		23,938	
7,500		Purchase of animals		22,567	
<hr/>	747,924			<hr/>	885,626
		<i>Whipsnade</i>			
		<i>Menagerie</i>			
6,631		Rates and insurance	8,599		
149,257		Salaries	175,652		
50,486		Provisions	73,025		
43,715		Fuel, light, water, transport	27,849		
19,493		Miscellaneous	23,011		
			<hr/>	308,136	
		<i>Works</i>			
40,020		General maintenance	52,614		
5,622		Alterations	7,356		
			<hr/>	59,970	
15,407		Farm, gardens and forestry		15,898	
23,321		Advertising		7,659	
7,775		Purchase of animals		6,864	
<hr/>	361,727			<hr/>	398,527
	55,414	Surplus for the year			—
<hr/>	<u>£1,563,874</u>			<hr/>	<u>£1,743,704</u>



# Wellcome Institute of Comparative Physiology

## INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER 1974

Ford Research Fund - interest and dividends	£	£	Salaries (including pension contributions)	£	£
Research funds transferred from Birmingham University		17,672	Laboratory and other scientific expenses		44,201
Society's contribution		10,573	Administrative charges		7,631
Miscellaneous income		31,472	Heating, lighting and miscellaneous		2,630
		960	Transfer - Equipment Fund		5,415
		<u>60,677</u>			800
			Expenditure from project grants:		<u>60,677</u>
Project grants		2,969	Salaries	1,627	
		<u>£63,646</u>	Scientific expenses	1,342	
					<u>2,969</u>
					<u>£63,646</u>

## BALANCE SHEET AT 31st DECEMBER 1974

Sundry creditors and receipts in advance		2,692	Sundry debtors and payments in advance		3,219
Capital Account (Ford Research Fund):			Investments at cost (market value £137,010)		242,073
Balance 1st Jan. 1974	257,337				
Less Loss on investments	15,219				
	<u>242,118</u>				
Equipment Fund:					
Balance 1st Jan. 1974	2,093				
Add Transfer	800				
	<u>2,893</u>				
Less Maintenance and renewals	2,411				
	<u>482</u>				
		<u>£245,292</u>			<u>£245,292</u>



# Notes on the Accounts

## 31st December 1974

1. Fantham Bequest	Balance at 1st January		£	£
	Investment Income			5,582
				790
	Balance at 31st December			<u>£6,372</u>
<hr/>				
2. Nuffield Institute Fund	Balance at 1st January			14,576
	Donations and Grants			101,291
	Society's contribution			98,483
				<u>214,350</u>
	Less: Salaries (including pension contributions)	134,131		
	Scientific expenses	44,028		
	Other expenses	20,187		
		<u></u>		198,346
	Balance at 31st December			<u>£16,004</u>
<hr/>				
3. Wolfson Donation Fund	Balance at 1st January			12,131
	Less: Expenditure			12,131
				<u>—</u>
	Balance at 31st December			<u>—</u>
<hr/>				
4. Publications Funds	Balances at 1st January:			
	Zoological Record Fund	15,593		
	Neave Lloyd Fund	11,493		
		<u></u>		27,086
	Sales and donations			102,624
				<u>129,710</u>
	Less: Publication and distribution costs			149,298
			<u>£19,588Dr</u>	
<hr/>				
5. Staff Benevolent Fund	Balance at 1st January			1,091
	Donations—G. J. Ashby Memorial Fund			295
	Interest			73
				<u>1,459</u>
	Less: Grants			45
	Balance at 31st December			<u>£1,414</u>
<hr/>				
6. General Reserve Fund	Balance at 1st January			129,536
	Fees of deceased compounders (from Composition Fund)			430
	Transfer from General Purposes Account			22,084
	Miscellaneous			5
				<u>£152,055</u>



		£	£
7. Buildings	Balance at 1st January		287,001
Replacement Fund	Investment income (no allocation 1974)		—
			<u>287,001</u>
	Less: Expenditure	53,742	
	Transfer—Depreciation of Investments Reserve	100,000	
		<u>153,742</u>	
	Balance at 31st December		<u>£133,259</u>
<hr/>			
8. Depreciation of	Balance at 1st January		50,000
Investments Reserve	Transfer—Buildings Replacement Fund		100,000
			<u>150,000</u>
	Less: Net loss on sale of investments		796
			<u>£149,204</u>
<hr/>			
9. Freehold Property	Balance at 1st January		128,263
at Cost	Less: Whipsnade staff houses sold		22,084
			<u>£106,179</u>
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10. 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	
	Most of the stocks of souvenirs, etc. were taken over on 1st November 1974 by Zoo Enterprises Ltd., a subsidiary company of Zoo Restaurants Ltd.		
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11. Rebuilding Account	Balance at 1st January		107,710Dr
	New Works		226,022
			<u>333,732Dr</u>
	Less: Donations and Grants (received or due)		
	H.M. Government	221,522	
	Miscellaneous	1,322	
		<u>222,844</u>	
	Balance at 31st December		<u>£110,888Dr</u>
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12. De Arroyave Fund	The capital of the De Arroyave Fund is held by the Official Custodian for Charities. The income from the Fund was £6,013, of which £10 was spent on the upkeep of the Lopes grave and mausoleum, in accordance with the terms of the Trust.		
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13. Davis Fund	The capital of the Davis Fund is held in trust by the Society, but is not included in the Balance Sheet.		