



THE ZOOLOGICAL SOCIETY OF LONDON

Annual Report 1976

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. Research Laboratories and a modern veterinary hospital which is linked with a Pathology Department, 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 150 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 27 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 1965, with a bibliographical reference to the original description of each. The work contains approximately 280,000 entries and is published in 7 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 148th Annual Report to the Annual General Meeting of the Society to be held on 10th May 1977 at 4.00 pm in the Society's Meeting Room at Regent's Park.

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PATRON: HER MAJESTY THE QUEEN

COUNCIL 1976-1977

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

Treasurer : Aubrey Buxton, MC, DL

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

E. Michael Behrens

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The Lord Glenkinglas, PC

Professor Richard J. Harrison, MA, MD, DSc, FRS

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The Hon Ivor Montagu, *Vice-President*

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

Professor A. T. Phillipson, MA, PhD, DVSc, MRCVS, FRSE*

Professor R. V. Short, ScD, FRS

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

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Ronald G. Waterhouse, QC, JP, MA, LLB, *Vice-President*

The Duke of Wellington, MVO, OBE, MC

Sir Gordon Wolstenholme, OBE, FRCP, FIBiol

C. A. Wright, DSc, PhD, FIBiol

Woodrow L. Wyatt, *Vice-President*

*While this report was being prepared Professor A. T. Phillipson died very suddenly on 10th January 1977 and Council records his death with great sorrow.

HONORARY FELLOWS

Date of Election

- 1971 His Majesty Emperor Hirohito of Japan
- 1975 Professor Jean Anthony
Muséum National d'Histoire Naturelle, 55 rue de Buffon, Paris 53, France
- 1975 Professor L. D. Brongersma
Rijksmuseum van Natuurlijke Historie, 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
- 1975 Professor Jean Dorst
Muséum National d'Histoire Naturelle (Mammifères et Oiseaux),
55 rue de Buffon, Paris 53, France
- 1975 Dr Harry Hoogstraal
US Naval Medical Research Unit No. 3, c/o Embassy of the USA,
Cairo, Egypt
- 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 Dr Roger Tory Peterson
Route 4, Box 131 Neck Road, Old Lyme, Connecticut, USA
- 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

Review of the Year

Annual General Meeting

The President, HRH The Duke of Edinburgh, presided at the Annual General Meeting which was held on 4th May. In accordance with Article 10 of the Charter the Treasurer, Sir Terence Morrison-Scott, and the Secretary, Professor Lord Zuckerman, retired. Sir Terence, who had held office as Treasurer continuously since 1950, was thanked by the President on behalf of Council for the devoted services he had given the Society over 26 years. There had been many changes and improvements during this period and the control of financial policy had called for skill and courage. Mr Aubrey Buxton, a serving Member of Council, was elected Treasurer.

Professor Lord Zuckerman accepted nomination and re-election as Secretary on the understanding that he could not commit himself to complete the further statutory term of seven years, and that he wished to retire as soon as the Council felt able to accept his resignation.

The following Members of Council retired: Sir Dudley Forwood and Air Vice-Marshal G. Silyn Roberts (Ordinary Fellows); Professor E. J. W. Barrington, Professor J. M. Dodd and Dr J. Eric Smith (Scientific Fellows).

The Fellows elected to fill these vacancies and the casual vacancy caused by Mr Buxton's election as Treasurer, were: Mr E. Michael Behrens, Sir Terence Morrison-Scott, Lady Daphne Straight and Mr Ronald G. Waterhouse (Ordinary Fellows); Professor A. T. Phillipson and Sir Gordon Wolstenholme (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 *Lt-Col John Eliot*, for distinguished taxonomic work on Lepidoptera, particularly the family Lycaenidae. The award was a piece of silver designed by Mr Gerald Benney.

The Scientific Medal (awarded to persons under 40 years of age for distinguished work in zoology) to *Dr W. D. Hamilton*, Imperial College of Science and Technology, University of London, for his work on evolutionary biology; and to *Dr S. H. P. Maddrell*, ARC Unit of Invertebrate Chemistry and Physiology, University of Cambridge, for his work on secretory mechanisms in insects.

The Thomas Henry Huxley Award (for original work submitted as a doctoral thesis) to *Dr W. McA. Blaney*, Birkbeck College, University of London, for his thesis 'Studies on the structure and function of the maxillary palps of locusts'. The award was a sculpture, in bronze, by Miss Elisabeth Frink.

The Silver Medal (awarded for contributions to the understanding and appreciation of zoology) to *Mr Gerald H. Thompson*, for his work as pioneer and leader of the team at Oxford Scientific Films Ltd, producing zoological films of great educational value and high scientific quality.

The Prince Philip Medal (awarded 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 *G. P. E. Giglioli*, Loretto School, Musselburgh, for his essay 'South Sound, Grand Cayman, West Indies'.

The Zoological Society of London Frink Medal for British Zoologists (awarded to zoologists for significant and original contributions to zoology in its wider implications) to *Professor Alastair Graham*, University of Reading.

After the Meeting, His Royal Highness visited the new Zoo Study Centre and the Centre for Life Studies.

The Council records with pleasure that Dr L. G. Goodwin, the Director of Science, was elected a Fellow of the Royal Society and, in the New Year Honours List, was appointed CMG for his services to the study of tropical disease.

150th Anniversary
of the Foundation
of the Society

Following much discussion in scientific circles on the need to establish a living zoological collection in London, a public meeting of supporters of the proposal was held on Saturday, 29th April 1826. The Zoological Society of London was founded at that meeting, and this year we have celebrated our 150th anniversary.

New Lion Terraces
London Zoo

The highlight of the programme of functions which marked the occasion was the inauguration of the New Lion Terraces, on 3rd June, by Her Majesty The Queen, the Society's Patron. The Queen's arrival, accompanied by the President, was greeted with a Fanfare, composed for the occasion by Sir William Walton, OM, and played by the Trumpeters of the Royal Military School of Music, Kneller Hall. The invited audience included Ambassadors, Members of HM Government, the Opposition, Local Government, representatives of Government Departments, Research Councils, Foundations and Trusts, Societies, Zoos, other allied Institutions, Members of Council, Chairmen of the Society's Committees and senior members of the staff. Among the guests who had given financial support for the rebuilding of the Zoo was Sir Charles Clore, who had generously contributed to the cost of the Terraces and whose gift is marked by a plaque at the entrance to the complex.

Her Majesty toured the new enclosures and also visited other houses in the Gardens.

HRH The Duke of Edinburgh presided at the Reception and Banquet which followed. The toast to the Society was proposed by Sir Hugh Casson, President, Royal Academy of Arts; the Secretary responded and also proposed the toast to the guests. The Rt Hon. Harold Lever, Chancellor of the Duchy of Lancaster, took the place of Mr Denis Healey, Chancellor of the Exchequer, who was prevented at the last moment from attending, and replied on behalf of the guests. This Royal occasion was a significant landmark in the Society's history.

The other events which were arranged reflected the many aspects of the Society's activities, and are referred to in the departmental reports. The programme, which was compiled by the Promotion Committee, under the chairmanship of Mr Aubrey Buxton, was:

25/26 March

Symposium: 'The Zoological Society of London 1826-1976 and beyond'.

1 May

Children's Day at the London Zoo. Through the Social Services Departments in London and the Home Counties, over 5,000 under-privileged children were invited to spend the day in the Zoo.

21 June

Cocktail party for Fellows and others who served on Advisory Committees or were associated with the Society in other ways. The Gardens were open throughout the evening.

6/7/8 July

'Second World Conference on Breeding Endangered Species in Captivity' organized by the Society, in conjunction with the Fauna Preservation Society.

14 July

Visit of Their Royal Highnesses the Duke and Duchess of Kent, with the Earl of St Andrews and the Lady Helen Windsor, to Whipsnade Park.

July-November

Exhibition of Zoo photographs 1911-1930, in the Elephant and Rhino Pavilion, London Zoo.

30 September

Discussion Meeting at the Royal Society on 'Turning points in Zoological Science'.

1 October

Party for members of staff, pensioners and their guests.

6/7/8 October

Open Days at the Institute of Zoology, including the Hospital, and also the Zoo Study Centres.

November-January 1977

'Jumbo and other elephants': Exhibition at the Bethnal Green Museum of Childhood.

Books published

The Zoological Society of London 1826-1976 and beyond. Symposia Series No. 40.
The Bird Paintings of Henry Jones. Text by Bruce Campbell (Folio Society).
In 1921 a series of over 1,000 watercolours of birds was bequeathed to the Society by Major Henry Jones. Twenty-seven of these watercolours have been reproduced in this magnificent volume, which is published in a limited edition of 500.
The Ark in the Park (The Zoo in the 19th century) by Wilfrid Blunt (Hamish Hamilton).
London's Zoo compiled by Gwynne Vevers (Bodley Head).
The London Zoo Sally Holloway (Michael Joseph).
Life in the Zoo Michael Chinery (Collins).
Golden Days (Historical photographs of the London Zoo) compiled by T. B. Dennett, L. G. Goodwin and R. D. Martin (Duckworth).
Dear Zoo Joan Crammond (Studio Vista).
Jumbo Professor W. P. Jolly (Constable).

Films

The Zoo. A portrait of an Institution by David Attenborough, produced by Anthony de Lotbinière (BBC).
Whipsnade Story. Directed by Harry Aldous (Anglia Television).

The Council is most grateful to the press, representatives of all the media, and the photographers who cooperated so enthusiastically in preparing many articles on the Society's history, extensive reports of all the events, and other special features.

The Council is also very grateful to the members of the Society's staff for the unstinting help which they all gave in order to ensure the success of the anniversary functions.

Congratulatory messages and gifts of animals were received. The gifts of animals are acknowledged elsewhere in this Report, but the Council also records its thanks to Drummonds Branch, the Royal Bank of Scotland, who presented the Society with a silver Quaich (derived from the Gaelic word 'cuach', meaning cup). Drummonds have been the Society's Bankers since 1826 and successive members of the Drummond family held office as Treasurer between 1831 and 1932.

Roll of Members

At the end of the year there were 2,712 Fellows and 3,597 Associates.

Obituary

The Council records with deep regret the death of Lord Strathalmond, who had been a Member of Council and at the time of his death was a member of the Finance Committee; Professor Boschma an Honorary Fellow of the Society since 1951; Professor Sir James Gray, a Fellow since 1938; and of Sir Denys Lawson, a Life Fellow.

Finance

With the continuing high rate of inflation, ordinary expenditure rose by £245,000 (12 per cent) to £2,235,000. This figure would have been considerably higher if steps had not been taken, in the latter part of 1975, to make various economies and to obtain additional financial support for the Research Institute. Salary and wage awards granted during the year were within the Government's current pay policy, but the total salary and wages bill increased by £156,000 over the 1975 figure. Inevitably rising costs had to be reflected in higher admission prices.

Attendances at Regent's Park were lower than in 1975, but higher at Whipsnade. As shown in the Financial Accounts, which are included with this Report, the result for the year was a surplus of income over expenditure of £179,000, which enabled us to reduce the substantial deficits carried forward from 1974 and 1975.

Capital expenditure during the year was £255,000. This was met partially by the grant towards rebuilding made by the Government for the period 1970-1975, and which has now been spent; partially from the generous gift of £200,000 from Sir Charles Clore, which was announced in 1974 and is payable over five years 1976-1980. The remainder was found from the Society's own income. The main items were the completion of the New Lion Terraces and Zoo Study Centres at Regent's Park, and the African and Asian exhibits at Whipsnade.

The continued rebuilding of the London Zoo and the further development at Whipsnade remains the long-term purpose of the Council. A great deal has already been achieved, but in the present economic situation there is little prospect of maintaining the momentum and progress of the last decade.

Donations and Gifts

The Council gratefully acknowledges a number of donations, including £500 from Mr and Mrs D. Palmer-Hall; £100 from Miss Elizabeth A. Johnstone; a legacy of £1,593 from the late Mr Noel Cordery; and many grants, totalling £250,000, in support of the research projects.

The Council is most grateful for many other gifts to the Society. Miss Elisabeth Frink presented an edition of seven sculptures, in bronze, and Mr Michael Behrens an edition of eight sculptures, 'Magic Bird' by the Finnish designer, Mr Tapio Wirkkala, which will be presented, at the discretion of Council, as awards for contributions to zoology. Mr William Timym gave a sculpture, in bronze, of a Lion's Head, for exhibition in the New Lion Terraces, and also artists' proofs of four groups of animals; Dr D. Seth-Smith presented a collection of slides, which belonged to his late father who, until 1939, was the Curator of Birds; Mrs Sumner-Tait of Charlottenlund, Denmark, donated 4,000 feet of 16 mm original colour film of bird life around Lake Victoria.

The Council also records its gratitude to those who have presented books to the Library, in particular Mr A. W. Baker and Mr G. L. Wood who, over the years, have presented many invaluable books; Mr I. Orr for Chinese books and journals; the Council of the Fauna Preservation Society for a large collection of books on conservation; and the Hudson's Bay Company for zoological books from the Poland Collection.

Other gifts to the Library are recorded in Appendix 6, and the animals which have been given are recorded in Appendix 5. The Council very much appreciates the help and support given to the Society in this way.

The London Zoo

Visitors during the year 1,715,000

Visitors to the Children's Zoo 268,000

Visitors to the Aquarium 498,000

Development

The completion of the New Lion Terraces, which replaced the old Lion House and were opened on 3rd June, was a further important landmark in the almost continuous period of reconstruction which has now lasted for nearly twenty years. Some two-thirds of the buildings and installations have been replaced or renovated, and the Zoo has been given a radical face-lift.

The disappearance of the old Lion House and the open landscaped effect of the New Lion Terraces have given a totally new aspect to the south side of the Gardens, allowing an extensive view into the Park. The demolition of the Lion House and the restoration of the ground that had to be cleared was the last stage in an 18-month project carried out by the contractors J. Jarvis and Sons Ltd, with whom the Society has had a most successful partnership in the building of one of the most extensive and ambitious exhibits of recent years.

The natural look of the Terraces is enhanced by the planting both inside and outside the enclosures and in the barrier strips. The planting plan was prepared by the Architect's Department in association with Mrs Margaret Maxwell and the Society's landscape consultant, Mr Peter Shephard, the plants being supplied by Hilliers Ltd of Winchester.

As a result of favourable conditions during the winter and spring of 1975/76, there were well-established trees, shrubs, grass and ground cover when the animals were introduced to the enclosures, only a few days before the official opening of the Terraces. The hot, dry summer which followed was a more severe test of the planting than the worst depredations of the animals, but it was successfully dealt with through the skill and hard work of the staff of the Gardening Department.

There was no other major construction at Regent's Park, but much repair and painting work was done to produce the best effect possible for the Anniversary year. Buildings near the New Lion Terraces (the Penguin Pool, the Bird House, the South Pheasantry, the Birds of Prey Aviaries, the South Gate, near which a new Kiosk was built) were renovated to match, as far as possible, the fine new look given to this part of the Gardens. A new lawn was laid out on the site of the old Lion House, with a pony-cart riding track in the centre part. The Aquarium and the Regent Cafeteria were completely re-decorated internally, and the exterior of the Pavilion Building was painted.

The Works Department was kept busy during the autumn repairing the heating and water supply systems and, in one case, a gas main. The movement of soil after two dry summers may have been the cause of some of the water-pipe fractures, while the failures in the heating pipes were probably the result of corrosion through age. The need to replace some of these pipes as soon as funds allow was noted in the last Report.

An interesting technical innovation has been the installation of VHF radio alarm systems for use by the Keeper staff in two potentially dangerous exhibits, the Michael Sobell Pavilions for Apes and Monkeys and the New Lion Terraces. They consist of a central receiver sited in the main service building of each complex and connected to amplifiers in the other buildings, with individual transmitters carried by Keepers as they work, often alone, in the different sections. In the new open-plan exhibits, covering a relatively large area, staff are likely to be left much more on their own than they were in such single block exhibits as the now demolished old Lion and Monkey Houses.

General

With the rest of Southern England, London had an almost unbroken period of hot, dry weather from May until August. Rain fell on only 12 days, mostly at the beginning and end of the period. Apart from the statutory restrictions on the use of water from hose-pipes, the effect of the drought was that the Gardening staff, already fully occupied

with the special task of looking after the planting in the New Lion Terraces, had to pay much greater attention than usual to grass and to trees and shrubs, many of which, by the end of August, were in serious trouble. The rain in September saved the day, but only because of the work done by the staff during the dry period.

The Society continued to help in the planning and development of new zoos. The Architect, Mr J. Toovey, prepared a layout plan for a new national zoo in Khartoum, where he spent two weeks in November. The training of staff from foreign national zoos and from other institutions in a variety of aspects of zoo management continued.

There were even more official visitors than usual to the London Zoo, mainly due to the attendance at the World Conference on Breeding Endangered Species in Captivity which was held in July. Representatives of many of the world's leading zoos and associated scientific institutions were present.

HRH Prince Akihito, Crown Prince of Japan, visited the Zoo on 24th June to see the Aquarium.

A ceremony was held in the Bird House on 27th January at which a seat was presented to the Society by the Wildlife Sound Recording Society as a memorial to the ornithologist Ludwig Koch, who made many of his bird-song recordings in the House.

The Dangerous Wild Animals Act was passed in July and came into force on 22nd October. It is designed to control the keeping of dangerous wild animals as pets and was supported by the Society, whose staff advised on its terms.

The Collection *Mammal Section*

In the New Lion Terraces seven species (Lion, Tiger, Cheetah, Leopard, Northern Lynx, Jaguar and Serval) are exhibited. The first months of the year were taken up with settling them in their new quarters, first in the inside dens and later in the outside enclosures. A pair of Caracal Lynx was acquired to replace the Northern Lynx, but was still in quarantine at the end of the year. Several of the animals on exhibition were born at Regent's Park or Whipsnade. The animals look well in their enclosures, which have been landscaped to resemble their natural habitats, and they make good use of the larger areas now at their disposal.

The most exciting birth of the year was that of the female Lowland Gorilla 'Salome' on 16th July. Her mother 'Lomie' was sent to Bristol Zoo in the summer of 1975 to be mated, in November, with the male 'Samson', which had already fathered several infants. 'Lomie' returned to London in February 1976. The birth was normal, and for the first three weeks the mother looked after the baby. It then became apparent that she was becoming progressively less maternal and rough with her offspring, which at 3½ weeks was removed for hand-rearing. Most of this work was done by Senior Keeper R. R. Smith and his wife, for whose care and devotion the Council is most grateful. 'Salome' continues to grow satisfactorily, and her progress has been widely reported by the Press and photographers.

Other births in the Michael Sobell Pavilions for Apes and Monkeys included a Gelada Baboon, a Mandrill and a Lar Gibbon, the fifth to be born since this group was established.

The male Orang-utan 'Boy', the oldest of the group received from Hong Kong in 1967, died on 22nd March. Although he was still relatively young, he was the father of nine of the eleven Orangs born in the Zoo since 1970.

The Giant Pandas remain in the Sobell Pavilions since funds have not become available to build the special house which has been designed for them on the south canal bank. The Pandas have now probably reached their adult size.

On the Cotton Terraces the Scimitar-horned Oryx, Bactrian Camels, American Bison, Yaks, Giraffes, Onagers, Zebras, Timor Deer, Kudu and Blackbuck all continued to breed regularly. The Timor Deer herd, which is the only herd outside Indonesia, has been split, one group being sent to Knebworth Park. As a result both groups have shown an improvement in condition and breeding performance.

All the species on the Mappin Terraces hills, Barbary Sheep, Markhor, Mouflon and Bighorn Sheep bred, and Warthogs were again on exhibition at the foot of the Terraces. At present there are only two males, but it is hoped to acquire some females, bred in European zoos, as soon as they become available.

The only Californian Sealion born this year was not fed by its mother (which has had several previous pups but has never produced milk) and the pup died despite attempts at hand-rearing. The female Sealion, born last year, and a young male born in the Edinburgh Zoo, were successfully weaned and are now together. They will eventually join the main herd in the big pool.

The artificial insemination of the African Elephant 'Toto' carried out in 1975 and referred to in the report of the Wellcome Laboratories of Comparative Physiology should, if successful, lead to a birth during the first part of 1977. Appropriate preparations have been made, including the modification of the dens of the Elephant and Rhino Pavilion to contain a calf.

'Toto' made less distinguished news when, on the morning of 8th May, she was pushed into the moat by the Indian Elephant 'Lakshmi'. While being led back out of the moat by her Keeper she became frightened by the prospect of meeting 'Lakshmi' again and suddenly stepped over the gate at the head of the moat and moved away from the Elephant House. She was quickly controlled and then slowly urged back to her enclosure. The staff carried out the escaped animal emergency procedure in an exemplary manner, earning the respect of the public.

In the Children's Zoo farm animals continue to provide an interesting exhibit, and Douroucoulis and Thick-tailed Bushbabies bred in the nocturnal house there. The Victoria phaeton and pair of Cream Ponies won a first class award at the London Harness Horse Parade on the Inner Circle, Regent's Park, on Easter Monday.

The Charles Clore Pavilion for Small Mammals has again had a successful year. Margays and Malayan Giant Squirrels were bred, this being the first time these species have been bred in the United Kingdom. Other notable births included Blotched Genets (the first litter to be reared in the present house), Indian Fruit Bats, Slow Loris, Slender Loris (the first birth in the present group), Ruffed, Brown and Ring-tailed Lemurs, Common Marmosets, Red-mantled Tamarins, Bornean Small-toothed Palm Civets, Common Tree Shrews and many small rodents. The successful rearing of the Blotched Genets was due both to good record keeping and good management. A mating was observed and recorded on 29th June. Eight weeks later (gestation in Genets is about ten weeks) the male was removed as it was thought that his presence may have caused the loss of one or more previous litters. The female was then left undisturbed as much as possible for another five weeks when inspection revealed two well developed cubs, probably at least two weeks old.

A pair of Giant Anteaters, a Giant Armadillo and a Two-toed Sloth were deposited by HM The Queen, to whom they were presented by the President of Brazil during his State Visit in May. Unfortunately, one Anteater and the Sloth died during quarantine.

Other additions included a group of Dwarf Hamsters (*Phodopus sungorus*), a pair of Gemsbok from Marwell Park, and a female Pudu, given by Antwerp Zoo to replace the one which died early in the year. Cuban and Jamaican Hutias were loaned by Jersey Zoo, and four Maxwell's Duikers by Edinburgh Zoo.

Bird Section

The main event of the year was the completion and occupation of the new Aviary within the New Lion Terraces complex. Essentially the Aviary is a European marsh with European marsh plants and water birds enclosed by a mesh framework, and accurately displays a complete habitat. The birds living there now include Ruff (*Philomachus*

pugnax), Redshank (*Tringa totanus*), Oystercatcher (*Haematopus ostralegus*), Black-winged Stilt (*Himantopus himantopus*), Green-winged Teal (*Anas crecca*) and Garganey (*Anas querquedula*).

A smaller development was the conversion of part of the former King's College Unit laboratory into an incubation room, which came into operation in the spring. There have been good results and more species and individuals were successfully hatched than had been previously possible with the limited facilities in the Ostrich House.

Among the successful hatchings in the new incubation room were two eggs from the pair of Imperial Pheasants on loan from Antwerp Zoo. Fortunately the young, which were successfully reared, were a male and female and there are now five of this rare species in the Collection.

A pair of Rockhopper Penguins from the small group in the Southern Aviary hatched two young in May, though only one survived to be successfully fledged. Four Gentoo Penguins were presented by the Royal Zoological Society of Scotland to mark the Society's Anniversary.

For the first time in the Collection Chilean Flamingos bred and two were reared. This success is possibly a reflection, at least in part, of the recent policy of separating flamingo species and keeping them in larger flocks. The prolific pair of Jackson's Hornbills produced another young, their fifth, and the fourth female. A related species of the same genus, the Red-billed Hornbill, produced two young. This is the first time this species has bred in the Collection.

The pheasant collection has been reorganized to bring in more of those species thought to be endangered and in need of conservation. We were particularly pleased to receive from Dr K. Searle, Hong Kong, a gift of two pairs of Palawan Peacock Pheasants, in celebration of the Society's 150th Anniversary. Other new pheasant species have included Argus, White Eared, Vieillot's Fireback, and the replacement of much old stock.

There have been a number of notable arrivals this year, including, in particular, three pairs of Toucans, which were part of the gift of the President of Brazil to HM The Queen on the occasion of his State Visit. A pair of Burrowing Owls was presented by Washington Zoo, a pair of Dusky Lorries by Rotterdam Zoo and a group of captive-bred Abdim Storks and Black-winged Stilts by Professor Mendelssohn of Tel-Aviv University.

Over a period of three months in the spring, more than 20 small owls died suddenly and for no apparent reasons. Detailed investigations showed that they had absorbed Dieldrin. A note of the occurrence is included in the Veterinary Report (Page 21).

Perhaps the saddest loss of the year was the death of a great favourite 'Bumble', the Falkland Island Turkey Vulture which had been in the Collection for 27 years.

Aquarium

The staff have been on a number of fishing trips to collect fresh specimens for the Seawater Hall, and have also visited other aquaria to collect fishes. A large number of fishes have been bred, and include Dwarf and Three-spot Gourami, Rosy Barb, Leopard Danio, Black Widow, Jewel Cichlid, *Tilapia melanopleura*, Lesser Spotted Dogfish, Tench and *Amecca splendens*. The latter is the live-bearing fish which was reported last year as new to the Collection.

Insect House

Several invertebrates have again bred successfully during the year. In addition to various stick-insects, these included Tomato Hawk Moth (*Protoparce sexta*), Monarch Butterfly (*Danaus plexippus*), Great Egg Fly (*Hypolimnas bolina*) and the large Australian Swallowtail (*Papilio aegeus*) among the Lepidoptera, and Jockey Spider (*Latrodectus hasselti*) and Bird-eating Spider (*Avicularia avicularia*) among the Arachnida. Two desert scorpions from northern Africa have also bred, namely *Androctonus aeneas* and *Parabuthus* sp.

Reptile House

A new type of exhibition cage, which has been designed by the staff and constructed from plastic and fibreglass, is now in use. A number of these cages will eventually replace the small cages on the east side of the House.

A new transfer and catching box has also been designed by the staff which enables venomous snakes to be collected and restrained without the usual trauma accompanying such operations. Improved light fittings have been installed in several of the exhibition cages, which will allow the use of True-lite, a fluorescent light with a spectrum very close to daylight.

There were a number of births during the year. These included three Boa Constrictors and 11 Elliot's Two-banded Chameleons and, repeating the success of 1975 which earned an award from the Federation of British Zoos, 17 Boipevussu snakes.

A male Western Diamond-back Rattlesnake which died in April had been in the Collection since December 1958. It mated with a female in 1975 and she gave birth to one young.

Veterinary Report

A brief account of the veterinary work during the year is included in the report of the work of the Institute of Zoology (Page 21).

Whipsnade Park

Visitors during the year 482,000

Cars brought into the Park 53,000

Their Royal Highnesses the Duke and Duchess of Kent, with the Earl of St Andrews and the Lady Helen Windsor, visited Whipsnade on 14th July to mark the Society's 150th Anniversary. They were welcomed by the Lord Lieutenant of Bedfordshire and, before lunching with other guests who had been invited, they toured exhibits important to the conservation programme at Whipsnade.

On 6th August the High Commissioner of Zambia formally opened the David Shepherd Exhibition of railway rolling stock recovered from a logging railway in Zambia.

General

With the end, for the time being, of major construction at Whipsnade building work was concerned mainly with maintenance and renovation. Two projects which were started in 1975 were finished. Reinforced plastic domes were fitted as new roofs for the Elephant House stables, and the electrical installations in the Works area were modernized. An important maintenance item was the painting of the outside pool of the Water Mammals Exhibit, which had then been open for four years. The indoor pools will be painted early in 1977.

Improvements were carried out to some of the staff houses, and the roofs of some Keepers' rest-rooms were repaired. The indoor dens of the Chimpanzee exhibit were modified to allow better handling and management of the animals. A new heating boiler was installed in the Cloisters Cafeteria building and a new cold storage unit for fish supplies was installed in the Works area.

As at Regent's Park, the Gardening and Grounds staff had a particularly busy year not only with the effort needed for the Anniversary year but also in coping with the effects of the drought, although at Whipsnade this did at least have the positive result of reducing the amount of paddock grass-cutting to be done, which is normally a major summer task. However, serious extra work was caused at Whipsnade by exceptionally strong winds, affecting the whole of the north-west Europe, on the night of 2nd/3rd January. More than 40 large trees were blown down, the boundary fence was cut in four places, the elephant paddock fence was damaged in two places, and four Llamas were killed when a large beech tree fell on their stable. The small Gardening Department was occupied with clearing up the resultant mess until well into the spring.

The Council is grateful to the volunteers of the 18 Plus Youth Organization who weeded and cleared the White Lion carved into the Downs.

The Collection

The consistently good breeding results at Whipsnade year after year often over-shadow activities such as exchanging animals temporarily with other Zoos, a practice which may be just as important for the management and breeding success of the Collection.

In April the Amsterdam Zoo kindly agreed to transfer to Whipsnade their young captive-born male Indian Rhino as a mate for the Whipsnade female, itself born in Delhi Zoo in 1971. The Amsterdam animal is due to stay at Whipsnade long enough for the pair to breed. In return the female Indian Rhino at Regent's Park was sent to Amsterdam Zoo to make up for the temporary loss of the male.

When the Indian Rhino was transferred to Amsterdam, the opportunity was taken to send a White Rhino to Rotterdam Zoo. This is one of the several White Rhino transactions that occurred during the year, and a continuation of the process, started in 1975, of reducing the Whipsnade herd to its most efficient and economical size. Two males were sent to Gelsenkirchen Zoo in Germany, and a pair to Edinburgh Zoo, where the female later gave birth. At the end of the year, another female was loaned to Dublin

Zoo for a short period until a pair of the 1976 Whipsnade-born calves can be sent as a permanent exhibit in the summer of 1977.

The adult White Rhinos transferred to other zoos were made up for by more births in the Rhino herd during the last months of the year. Four females and one male were born, which helped to counter-balance the preponderance of males in the births in 1973 and 1974, although one female died within a few days.

Many other animals, such as wallabies, left Whipsnade during the year for other Collections, including some rare and endangered species. Père David's Deer went to Edinburgh, Munich and Pretoria Zoos, and Cheetahs to Gelsenkirchen, Edinburgh, Twycross and Dubai in the Persian Gulf. Munich also received a Barasingha.

As noted in the London Zoo report, Whipsnade made an important contribution to the stocking of the New Lion Terraces, providing two Sumatran Tigers, two Northern Lynx, one Cheetah and one Serval for the initial collection, and later a young lion.

There were two more litters of second-generation captive-born Cheetahs; three of the first litter of five cubs died after a month, but all four cubs of the succeeding litter survived.

Two Pygmy Hippopotamuses, also second generation, were born, one of which died soon after birth. Two more Common Hippopotamuses were born from the prolific trio called 'Henry', 'Wendy', and 'Belinda', which have produced 20 calves over the past 25 years.

Among other notable breeding successes were two male Musk Oxen calves. They were the last of eleven fathered by the bull 'Thor', which died on 6th September after nearly ten years at Whipsnade. Other species which breed regularly at Whipsnade include Père David's Deer, Sitatunga, Thomson's Gazelle, Serval, Hog Deer, Sumatran Tiger, Reindeer, Przewalski's Horse, Barasingha, Red Panda, Brindled Gnu. 1976 was the best year for some time for the Barasingha or Indian Swamp Deer herd, with three young being born and successfully reared. During the year a new male was acquired from the East Berlin Zoo, which is the first addition from outside the herd for 17 years.

A Polar Bear cub was born on 29th November and survived the initial period, which is often the most difficult time in the rearing of this species.

A group of Patas Monkeys was put into the former Gibbon Island enclosure, which has not been fully used since it was necessary to remove the Gibbons, for security reasons, in 1971.

The Onager herd was moved during the year to the Asian Exhibit in Spicer's Field and completes, for the time being, the proposed composition of this Exhibit. Later some of the Formosan Sika Deer herd will be moved to this area.

Veterinary Report

An account of the Veterinary work is included in the report of the Institute of Zoology (Page 22).

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

London Zoo

	<i>In the Collection on 1 January 1976</i>	<i>Received in 1976 by presentation, exchange, deposit, purchase and transfer from Whipsnade</i>	<i>Born and hatched in the Collection in 1976</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Whipsnade</i>	<i>In the Collection on 31 December 1976</i>
Mammals	825	77	544	464	982
Birds	1,167	175	153	356	1,139
Reptiles and Amphibians	559	300	87	350	596
	2,551	552	784	1,170	2,717
<i>Estimated number of fishes and invertebrates in the Collection at 31 December 1976</i>					
Fishes	3,091	Invertebrates (excluding locusts, ants and bees) 2,938			

Whipsnade Park

	<i>In the Collection on 1 January 1976</i>	<i>Received in 1976 by presentation, exchange, deposit, purchase and transfer from Regent's Park</i>	<i>Born and hatched in the Park in 1976</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Regent's Park</i>	<i>In the Collection on 31 December 1976</i>
Mammals	934	21	436	323	1,068
Birds	1,088	54	133	191	1,084
Reptiles	12	—	—	—	12
	2,034	75	569	514	2,164

Scientific and Educational Activities

Scientific Meetings

Eight meetings were held during the year and many of the papers given were based on work published in the *Journal of Zoology*. Other contributions included: Administrative difficulties in protecting wildlife in some third world countries, by Mr P. G. Riley; The scientific rôle of The British Library of Wildlife Sounds by Mr P. J. Sellar; a description of a new Australian zoo by Dr Peter Crowcroft; the Hon. Ivor Montagu introduced slides of birds of prey of Orkney taken by the late Mr Eddie Balfour, and Dr E. Clarkson discussed the eyes of trilobites, the oldest known visual system. A programme on the biology of the Green Sea Turtle was given by Professor Sir Alan Parkes, Dr I. W. Rowlands, Dr J. Wood, Dr Sally Solomon, Mr R. N. C. Aitken and Dr T. Baird; Dr Michael Brambell and Mr R. Smith gave an account of the birth and progress of 'Salome', the first Gorilla born at London Zoo and Dr R. Martin spoke on laboratory aids for rearing Great Apes in captivity. Members were most fortunate in having the opportunity to see the film 'The Giant Panda', which was produced by The Shanghai Scientific and Educational Studio and made available to us by kind permission of His Excellency The Ambassador of the People's Republic of China.

Symposia

The following Symposia were held: 25/26th March 'The Zoological Society of London 1826-1976 and beyond'. This symposium commemorated the 150th anniversary of the Society and reviewed many aspects of its contribution to the development of zoology. The papers, edited by Lord Zuckerman and the staff of the Publications Department, were published in December as Number 40 in the Society's Symposia series.

11/12th November 'Comparative aspects of lactation' organized by Dr M. Peaker and the late Dr J. L. Linzell.

An additional meeting, 'Turning points in zoological science' organized by a committee under the chairmanship of Professor R. J. Harrison, was held at The Royal Society on 30th September as part of the sesquicentennial celebrations of The Zoological Society.

'The Second World Conference on Breeding Endangered Species in Captivity' was held at the Society on 6th-8th July. This well attended meeting was organized by the Society and The Fauna Preservation Society, the Conference Secretary being Dr Michael Brambell, Curator of Mammals.

Publications

Journal of Zoology

Transactions of the Zoological Society of London

Symposia of the Zoological Society of London

Zoological Record. Nomenclator Zoologicus

Editor: H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol

Assistant Editor: Marcia A. Edwards, PhD, FLS

Editorial Assistant: L. G. Ellis

Administrative Assistant: Unity M. M. McDonnell, MA

Journal of Zoology Volumes 178, 179 and 180 were published and together contain 108 papers. The number of papers submitted for publication continues to increase, and Council is most grateful to the referees who assess the many manuscripts received.

Transactions Two parts were published. Volume 33 part 2 'Chi-Chi'. The Giant Panda *Ailuropoda melanoleuca* at the London Zoo 1958-1972: A scientific study' edited by L. G. Goodwin. Volume 33 part 3 'A structural and functional interpretation of the cranial anatomy in relation to the feeding of osteoglossoid fishes and a consideration of their phylogeny' by D. R. Kershaw.

Zoological Record

Managing Recorder : Michael N. Dadd, BSc, FLS, AIIInfSci

Systems Analyst : Stuart J. Rammell, BSc

Senior Recorder : Judith M. Howcroft, BSc

Volume 108 (1971 literature): the publication of Section 20 (List of New Genera and Subgenera) completed this volume.

Volume 109 (1972 literature): Fifteen sections of this volume were published and the remaining five are expected early in 1977. Due to the considerable increase in recent years in the size of the outstanding section, *Insecta*, it has been divided into six parts from this volume onwards.

Volume 110 (1973 literature): Nine sections of this volume were published; six are at the final stages of computer-processing and the remaining five are now being processed.

Volume 111 (1974 literature): indexing of this volume was completed, and the 'keying' of the data prior to computer-processing was started.

Volume 112 (1975 literature): half of the indexing of this volume was complete at the end of the year.

Volume 113 (1976 literature): A small number of items for this volume were indexed.

During the year the majority of the staff, who had been based temporarily at the British Library Lending Division, Boston Spa, moved into permanent accommodation, near the Library, which had been purchased by the Society. The data preparation staff previously based at the British Museum (Natural History) then moved to the Yorkshire office. The Council is grateful to the Director and staff of the British Museum (Natural History) and to the Board of the British Library and the Director-General of its Lending Division, for the provision of accommodation and other assistance. The Council is also grateful to the staff of the United Kingdom Chemical Information Service (a Directorate of the Chemical Society) for much valuable advice and for their assistance in the operation of the computer-assisted system; to the zoologists who continue to assist in the compilation of the *Record*, and to the Institutions (listed in Appendix 7) whose donations help to defray the very heavy expenses involved.

International Zoo Yearbook

Editor : P. J. S. Olney, BSc, DipEd, FLS

Advisory Editor : H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol

Section 1 of Volume 17 of the *International Zoo Yearbook*, which will be published in the spring, 1977, contains the papers read at the Second World Conference on Breeding Endangered Species in Captivity. The Consultant Editor for the section is Dr Michael Brambell, who was the Conference Secretary.

The 23 papers cover many aspects of captive breeding and the problems of re-introduction of captive-bred animals into the wild. They reflect the twin recurring themes of the Conference: the practical problems encountered in re-introduction schemes, and the necessity for urgent research on the many and complex factors influencing propagation of good stock and the maintenance of adequate gene pools. As well as a number of papers dealing with general principles, varying from economic to genetic and behavioural management, several species are dealt with in more depth. These range from species whose breeding is well established in zoos, such as the Przewalski's Horse and the Snow Leopard, to those less frequently discussed such as manatees and butterflies. The latter represent an unusual departure for the *Yearbook* where invertebrates are more often considered as food species.

There are 50 papers in Section 2, 'New developments in the zoo world' which, following the usual pattern, is sub-divided into Breeding, Husbandry, Hand-rearing, Buildings and Exhibits, Education and Conservation. Continuing the theme of Section 1, there is strong emphasis on breeding management, including two reproductive studies on primates and a group of papers on sex determination, a subject often of paramount importance in attempts to breed monomorphic species.

The reference section includes, as usual, lists of numbers and species of vertebrates bred, noting births to captive-born parents; the census of rare animals in captivity in 1975; and the list of studbooks for rare or endangered species in captivity.

Library

The celebration of the 150th Anniversary of the Society has led to searches and use of the Society's archives, which are in the care of the Library. The books, journal articles, films and many other accounts of the Society's achievements published during the year, all relied on information and pictorial material from the archives.

The year has also been marked by a dramatic increase in the price of books and journals, particularly those from overseas. Every effort has been made to extend the Library's exchanges with similar institutions abroad, and in every other way to keep down costs without affecting the standard of the Library's services. We are more than ever grateful to those who have presented books to the Library.

Education Department

Programme for Schools

As a result of rising costs it was once again necessary to raise the charge made to school pupils. No doubt partly as a result of this, at a time when educational budgets generally are more rigorously controlled, attendances tended to fall slightly, although there had been an increase early in the year. In fact the total for the spring term was a record, but it became noticeable during the autumn term that fewer schools than in the past made bookings for pupils to attend two sessions during the same day. The numbers of pupils attending were:

Regent's Park:	Spring Term (Secondary Schools)	23,368
	Summer Term (Primary Schools)	9,257
	Autumn Term (Secondary Schools)	16,787
Whipsnade Park:	Summer Term (Secondary Schools)	3,598
		<u>53,010</u>

During the year several new tape-slide lectures were prepared by the Society's education staff. The use of this material permitted the introduction of new and more varied programmes, especially those for 11 to 13 year-old pupils.

Other Courses and events

A short course for university students of zoology was held during the Easter vacation. The Council is grateful to the distinguished zoologists who conduct these courses. Special lectures and demonstrations were organized for a number of universities, colleges of education and technical colleges. Fruitful co-operation was maintained with the staff of the Inner London Education Authority's Centre for Life Studies.

The staff of the Society's Education Department played an important part in the organization of Children's Day, held on 1st May 1976, as part of the Society's celebrations. The Council is grateful to Mr Johnny Morris for presenting the prizes on this occasion and to the many staff who volunteered to work on Saturday to help to make a successful day for the children.

In June, the biennial conference of the International Association of Zoo Educators was held in the Zoo Centre, and was attended by zoo education officers from all parts of the United Kingdom, Western Europe, the United States and Australia.

Christmas Lectures

Immediately after Christmas three meetings were held for the children and young friends of members of the Society. Mr David Jones, the Society's Senior Veterinary Officer spoke on Veterinary work at the Zoo, Mr Michael Boorer, the Society's Education Officer gave an illustrated talk on Rhinoceroses, and Walt Disney's film 'Jungle Cat' was shown. All three meetings were well attended.

Young Zoologists' Club

During the year three editions of 'Zoo Magazine' were published, containing a variety of articles on animals, and on the latest developments at the London Zoo and Whipsnade Park. Club meetings were well attended and included visits to Chester Zoo and the Norfolk Wildlife Park at Great Witchingham. 'Zoo Quest' competitions were held at Regent's Park and Whipsnade, and indoor meetings were also held.

Research

Institute of Zoology

In 1975, Council appointed a Committee under the Chairmanship of Dr C. E. Gordon Smith to survey the work and organization of research in the Zoo. The Council accepted the Committee's recommendations that the Nuffield Institute of Comparative Medicine, the Wellcome Institute of Comparative Physiology, the Animal Hospital and the Pathology Laboratory should be integrated to form a comprehensive Institute of Zoology. The Curators at Regent's Park and Whipsnade would also be members of the Institute. In March 1976, the Pathologist, Dr I. F. Keymer, resigned to take up an appointment at the Veterinary Investigation Centre of the Ministry of Agriculture, Fisheries and Food in Norwich, and the Hospital and Pathology Laboratory were then united under the Senior Veterinary Officer, Mr D. M. Jones, into a new Department of Veterinary Science within the Institute of Zoology.

During 1976, a Steering Committee (Dr R. F. Crampton, Dr C. E. Gordon Smith (Chairman), Sir William Henderson, Dr K. Mellanby, Mr H. V. Thompson and Dr C. A. Wright) has been considering the problem of obtaining funds to strengthen the permanent scientific staff of the Institute, both in numbers and in tenure so that longer-term research programmes are less frequently interrupted by the termination of project grants.

Meanwhile, the Society's staff has been exploring the ways in which scientific effort might be concentrated to make the most effective contribution towards solving current problems. The Society is ideally placed to become an international centre for the scientific study of problems of conservation. Experience, skilful management and husbandry have already put the Society in the forefront of the movement to breed endangered species of animals in captivity. The facilities available, especially at Whipsnade, and the scientific support and expertise of the Institute in reproductive physiology, biochemistry, immunology, parasitology, cytology and genetics can put real knowledge behind attempts to breed good stocks of rare animals. It is intended to make this one of the Institute's main projects.

To celebrate the 150th Anniversary of the Society, Open Days were held on the 6th, 7th and 8th October 1976, and demonstrations of current work were shown in the research laboratories, the Department of Veterinary Science and the Zoo Study Centres. Ordinary and Scientific Fellows of the Society, members of the staffs of University departments and other scientific institutions, including those who collaborate in research projects, and members of the press, radio and television, were invited; about 1,000 people attended.

A comprehensive Scientific Report, covering the years 1973-75 was published in the *Journal of Zoology* (1976), 178, 443-550, and therefore only a brief outline of the work is given here. The papers published during the year are listed in Appendix 3.

Department of Veterinary Science

Regent's Park

During the year 349 animals from the Collection received attention. A further 175 were referred for treatment by Veterinary Surgeons in practice or research institutes.

The only serious occurrence during the year was the loss of the large number of owls from Dieldrin poisoning. The pesticide was found in mice supplied from a commercial laboratory as food for the owls. Sawdust, used in the laboratory as bedding in the mouse cages, contained high levels of Dieldrin. The sawdust had been obtained from a manufacturer of door and window frames who used Dieldrin to protect the wood against woodworm.

In compliance with the new regulations on their importation, all birds coming into the Collection from abroad are quarantined in the Hospital. During this period the presence of parasites can be determined and dealt with. The smaller birds and the reptile collection present a considerable problem in parasite control, and investigations are proceeding into methods by which this problem can be reduced.

During the year 808 necropsies were carried out including 224 from outside sources, in particular birds from the many parks in the London area.

Mr D. McGregor completed his studies of phagocytosis in fish. The Fish Pathology Unit has now been closed because no further funds are available.

Whipsnade Park

The general standard of health in the Collection is good and there have been no serious outbreaks of disease. Infectious diseases are seen only sporadically, the most common disease being avian tuberculosis in birds.

The level of parasitism found at post-mortem in both mammals and birds is low, and undoubtedly, routine monitoring of faecal helminth egg counts, together with in-feed treatment with anthelmintic drugs when indicated, is responsible for this satisfactory situation.

Grass sickness, a disease of unknown cause, was confirmed in a Przewalski's Horse and a Common Zebra. Two other Whipsnade-bred Przewalski's Horses in Scotland, also died with symptoms suggestive of acute grass sickness, but this has not yet been confirmed histologically.

Work with immobilizing drugs continues, and trials with the steroid anaesthetic 'Saffan' suggest that the non-domestic cats require very much lower dose rates than do domestic cats. The advantages of this drug compared to others which are routinely used, is low toxicity, good relaxation, a faster recovery rate and the elimination of possible convulsive side effects.

During the year 354 necropsies were carried out.

Nuffield Laboratories of Comparative Medicine

Haematology

The Haematology Department continued to provide a diagnostic service for the Hospital, Whipsnade Park and the research laboratories. Some contract work was carried out and a screening service was set up for detection of congenital coagulation defects in dogs. Dr Christine Hawkey has also collaborated with Dr E. Cooke of the Postgraduate Medical Centre, Hackney Hospital, in a study of the effect of various treatments on blood coagulation and the incidence of post-operative deep vein thrombosis.

Mr P. D. Butcher has examined blood from 30 species of mammals and has shown that at least five distinct types of haemoglobin are associated with the reversible red cell 'sickling' phenomenon found in ten species of deer, and in goats and Mouflon. It is hoped that the study of the relationship between the molecular structure and polymerization properties of these haemoglobins will lead to a better understanding of sickle-cell anaemia in man.

Genetic Studies

Dr Hawkey has set up a new unit to study the genetics of zoo animals. Karyotyping from blood lymphocyte cultures and tests for the detection of genetic markers are being carried out so that chromosome abnormalities that could affect breeding may be identified.

Cytological techniques are also being used as an aid to sex determination in species that show no obvious sexual dimorphism. Eventually, it is hoped to offer these services to other zoos and animal collections.

Nutrition

Dr M. A. Crawford and his team have continued their studies of essential fatty acids in nutrition. All vertebrates need long-chain polyunsaturated fatty acids, derived from linoleic and linolenic acids, for their cell membranes and as a source of prostaglandins – substances that play an important part in the physiology of reproduction and in the maintenance of health of the blood vessels. Mr J. P. W. Rivers and Dr A. G. Hassam have provided further evidence of the dependence of carnivores on preformed long-chain unsaturated acids. Mrs Janet Oxberry has shown that the glial cells of the cerebral cortex of the young are seriously affected when there is a dietary deficiency of essential fats. Mrs Barbara Hall, continuing her study of human milk lipids, has found the composition in well-nourished mothers from six countries to be uniform. Changes that occur during the feed, during the day and during the lactation appear to be physio-

logically significant for the development of taste perception, the regulation of water intake and for meeting the demands of growing tissues for essential fats.

Dr A. W. M. Hay has continued his studies on the transport in the body of vitamin D and its active metabolites. A survey of 63 species of vertebrates gave some insight into the reasons why vitamin D₂ (calciferol) is less effective than vitamin D₃ (cholecalciferol) in preventing rickets in birds, whereas in most mammals D₂ and D₃ are of equal activity. Dr Hay finds that fish, reptile, bird and monotreme plasma proteins bind vitamin D₃ and its active 25-hydroxy derivative more efficiently than vitamin D₂ and its metabolite, but marsupial and placental mammals transport both vitamins with equal efficiency. A change in the properties of plasma transport proteins in mammals may thus have taken place about 150 million years ago, when egg-laying ended and some mammals took up the nocturnal habit. Nocturnal animals are denied the opportunity of converting skin steroids to vitamin D in the sunshine; it would be an advantage to them to utilize all available molecules with the general properties of the vitamin.

Infectious Diseases

A survey carried out by Dr G. R. Smith in 1975 showed that more than 70% of the lakes and waterways of London contain mud contaminated with *Clostridium botulinum*. Extension of the survey to many parts of Britain shows an overall prevalence of type B, types C and E appearing in some locations, and type D being relatively uncommon. In the Norfolk Broads, all but one of 45 samples contained *C. botulinum* and 26 of them contained more than one type.

On the Ile de la Camargue, only 2 of the 44 samples were positive, and contained type E alone. Migrant birds are likely to bring *C. botulinum* from elsewhere and it seems possible that the Camargue mud prevents its growth. Dr Jennifer Graham has isolated colonies of bacteria from the mud that antagonize the growth of *C. botulinum* and the role of these organisms in the natural environment is being investigated.

Mrs Vija Dent has isolated more than 300 strains of streptococci from the teeth of 15 species of captive animals, and the organisms are now being classified. *Streptococcus mutans*, an organism associated with human dental caries, was found only in Patas monkeys but *S. sanguis*, *S. milleri*, *S. mitior* and *S. salivarius* were present on the teeth of most primates.

Dr A. Voller, with Dr Ann Bartlett and Dr D. E. Bidwell, have extended the use of the enzyme-linked immunosorbent assay (ELISA) to detect antibodies to rubella, cytomegalovirus, Epstein Barr virus, *Aspergillus fumigatus* and *Candida* in human serum. The technique has also been used to titrate antibodies to respiratory syncytial virus, Newcastle disease virus, babesiosis and East Coast Fever; an indirect test, using a double antibody 'sandwich' will estimate circulating antigens such as anti-thrombin III, Factor VIII related antigens and plant viruses.

Dr L. G. Goodwin has devised an *in vitro* technique to measure the effective circulating concentrations of drugs used for the treatment of human and animal trypanosomiasis. The test can also be used to measure the contribution made by the host's immune response to the cure of the infection.

Mr P. K. C. Austwick investigated 24 cases of suspected fungal disease in zoo animals. Two Mississippi alligators were found to have severe respiratory mycosis caused by *Paecilomyces farinosus* and *Metarhizium anisopliae* respectively. These fungi have been widely used for the biological control of insects.

Radiology

Apparatus for magnification angiography has been installed and Professor du Boulay and his colleagues from the National Hospital, Queen Square, together with Dr D. J. Boullin (MRC Clinical Pharmacology Unit, Radcliffe Infirmary, Oxford) have studied the causes of spasm in the cerebral arterial system. Notable progress has been made towards the treatment of spasm following subarachnoid haemorrhage in human patients.

Wellcome
Laboratories of
Comparative
Physiology

*Artificial insemination
and hormone assays*

The female African Elephant 'Toto' was artificially inseminated in 1975. At the time of writing it is not certain whether this was successful but cell patterns in buccal smears are examined regularly by Mrs Frances D'Souza and hormones have been determined in the urine by Dr B. Seaton. Preliminary determinations of urinary FSH and LH have been made by Dr A. McNeilly, and attempts to detect a foetal heart by electrocardiography have been made by Miss L. Epztejn and Dr J. Hare of the Royal Free Hospital. Specimens of urine obtained by Dr R. D. Martin from pregnant elephants in South Africa showed no significant elevation of oestrogen levels.

Radioimmunoassay of urinary steroids was used to monitor the course of pregnancy of 'Lomie', the female Lowland Gorilla sent from Regent's Park to the Bristol Zoo for mating. Professor K. Bagshawe and his colleagues at Charing Cross Hospital Medical School carried out chorionic gonadotrophin assays and the results have provided a basis for regular pregnancy tests for all apes in the Collection. Mr P. F. McMullin has started work on the artificial insemination of chimpanzees. Close analysis of the patterns of hormone excretion suggest that cyclic changes occur throughout pregnancy in some mammals and the significance of this is under investigation. Dr Seaton has used the steroid radioimmunoassay technique to study the breeding cycles of the Casiragua (*Proechimys guairae*) and, in collaboration with Dr P. G. B. Johnston of the Royal Bristol Hospital for Sick Children, to investigate the effect of drug treatment on patterns of hormone excretion in a girl with Cushing's syndrome.

Mr W. V. Holt has studied the cytochemistry of the surface coats of ram and bull spermatozoa and is developing a technique in which the viability of sperms is assessed by their ability to fuse with avian red blood cells.

Breeding Colonies

The colony of Owl Monkeys (*Aotus trivirgatus*) now numbers 60 and several young have been born. Dr A. F. Dixson and Dr R. D. Martin are determining the characteristics of the ovarian cycle and gestation period in females and pituitary-gonadal function in males by observation and by hormone assays. Urinary steroid hormone levels are considerably higher in *Aotus* than in other primates studied.

Mrs D'Souza has continued her studies of Tree Shrews (*Tupaia minor*, *T. glis* and *Lyonogale tana*). Although induced ovulators, female Tree Shrews show a 7-day vaginal cellular cycle that continues during pregnancy. The unusually long interval of 48 hours between suckling times can be changed by altering the mother's calorie intake.

Miss Angela Glatston has continued her study of two colonies of the Lesser Mouse Lemur (*Microcebus murinus*) obtaining information on oestrous cycles, gestation and maternal care.

Mr B. Rudder is working on the interrelationships of reproductive variables among the primates, using the accumulated records of the Society. The results should be of use in predicting, for example, gestation periods in species not previously bred in captivity.

Field work

Dr R. D. Martin and Dr S. K. Bearder have begun an 18-month project in the N. Transvaal in which social organization, range, locomotion, feeding and reproduction in a localized population of 40 Bushbabies (*Galago senegalensis*) are studied with the help of radio-tracking techniques. These animals do not live in family groups, they have two breeding seasons each year and the infant mortality is high.

Miss K. M. Homewood has finished her study of the hard-pressed Tana River Mangabey in Kenya; only about 500 of these now survive in the wild.

Curators'
Departments

Dr H. G. Vevers has been re-examining the microflora living in the grit of the Aquarium sea-water circulation. These organisms play an important part in the breakdown of waste matter produced by the fishes.

In collaboration with Dr G. Y. Kennedy of the Cancer Research Laboratory, University of Sheffield, he has continued to work on animal pigments.

The first volume of the *Birds of the Western Palearctic* for which Mr P. J. S. Olney acts as an Honorary Editor, being responsible for the collection of information and the writing of the food and feeding sections, is now with the publisher. This volume covers the Orders Struthioniformes to Anseriformes and includes extensive data on 122 species. Work is now in hand for the next volume which covers the Orders Falconiformes to Gruiformes and includes some 95 species.

All the studies on reproduction carried out by the Wellcome Laboratories of Comparative Physiology on animals in the Collection were facilitated by Dr M. R. Brambell and the Keeper staff. Dr Brambell also gave facilities to Dr Karen Hiemae and her colleagues from Guy's Hospital Dental School for filming the process of mastication in camels and other ungulates. Students from Bedford, Queen Mary and University Colleges were helped to undertake observational projects in the Gardens.

Staff

Institute of Zoology

Director of Science: L. G. Goodwin, CMG, FRCP, FRS.

Department of Veterinary Science:

Senior Veterinary Officer: D. M. Jones, BSc, BVetMed, MRCVS; *Veterinary Officer (Whipsnade)*: D. G. Ashton, BA, VetMB, MRCVS; *Research Fellow (Fish Pathology)*: D. McGregor, MPhil; *Senior Technician*: A. K. Fitzgerald, RANA.

Nuffield Laboratories of Comparative Medicine:

Heads of Departments: *Biochemistry*: M. A. Crawford, PhD; *Infectious Diseases*: G. R. Smith, PhD, MRCVS, DVSM, DipBact; *Haematology Section*: Christine M. Hawkey, PhD; *Radiology*: G. H. du Boulay, MB, BS, FRCP, FFR; *Research Assistants, Infectious Diseases*: Ann Bartlett, PhD; D. E. Bidwell, PhD; *Haematology*: P. D. Butcher, MIBiol; *Laboratory Superintendent*: P. R. E. Wallace, FIST.

Administrative Assistant: Patricia E. Wright. *Research Fellows*: P. K. C. Austwick, BSc; C. D. V. Black, SRN, BSc; Vija E. Dent, BSc; Jennifer M. Graham, PhD; Barbara Hall, BSc(Warsaw); A. G. Hassam, PhD; A. W. M. Hay, PhD; Janet M. Oxberry, MPhil; J. P. W. Rivers, BSc; A. Voller, PhD, DSc. *Research Student*: Theresa L. Frankel, BVetSci(Sydney), Dip.Nutr(Cambridge).

Wellcome Laboratories of Comparative Physiology:

Senior Research Fellow: R. D. Martin, DPhil. *Research Fellows*: A. F. Dixon, PhD; Frances D'Souza, BSc; B. Seaton, PhD. *Research Assistant*: P. F. McMullin, MVB, MRCVS. *Research Students*: Heather Brand, BA; Angela Glatston, BSc; Katherine Homewood, PhD; Susan Kingsley, BSc; B. Rudder, BSc. *Chief Technician*: G. F. Nevill, HNC. *Histologist*: W. V. Holt, MIBiol, AIMLS.

Mr D. McGregor obtained the MPhil degree and left to join the staff of the Fish Diseases Laboratory (MAFF) in Weymouth. Dr B. Seaton left the Wellcome Laboratories. Mr C. D. V. Black joined the Nuffield Laboratories to work on liposomes and Dr. A. F. Dixon joined the Wellcome Laboratories to begin a project on Owl Monkey reproduction. Dr P. F. Watson (Royal Veterinary College) continued to collaborate with the artificial insemination project.

Dr A. Voller received the MRCPath qualification, and Miss Katherine Homewood and A. G. Hassam were awarded the PhD(London) degree. Professor du Boulay was elected President of the British Institute of Radiology.

Visitors who worked at the Institute of Zoology during the year included:

Department of Veterinary Science: Captain Lwin (Burma), Mr H. Wong (Hong Kong), Dr K. Takaishi (Japan), Dr C. Machado (California), Dr W. De Meurichy (Belgium) and Miss A. Merkel-Gottlieb (West Germany).

Nuffield Laboratories of Comparative Medicine: Miss Marion Hetson (USA), Dr K. M. Dormandy, Dr P. Stableforth and Miss J. Bernie (UK), Dr M. Trehella (Australia), Mme Marie France Lavoué (France), Dr A. Wheeler (UK), Dr F. Vaezzadeh (Iran), and Dr R. Warren (UK). Visitors from many countries came to learn the ELISA technique.

A special Chinese Study Mission from the Institute of Parasitic Diseases in Shanghai (Dr Fu Shu-chiao, Dr Mao Shou-pai, Dr Liu Teh-chuan and Dr Liu Shu-hsien) spent a week in the laboratories; this visit was arranged through the World Health Organization.

Wellcome Laboratories of Comparative Physiology: Dr Gillian Crowcroft (UK), Mr P. Condy (South Africa), Miss Maya Stavy (Israel) and Mr J. F. Dahl (USA).



Margay, 5 weeks old, London Zoo



Burrowing Owls, born at Washington Zoo, and presented to the Society



Ring-tailed Coati, 4 months old, London Zoo



Lowland Gorilla, 'Salome', a few hours old, London Zoo



The New Lion Terraces, London Zoo



The Opening of the New Lion Terraces, June 3rd

Animals in the
New Lion Terraces



The Lion Paddock



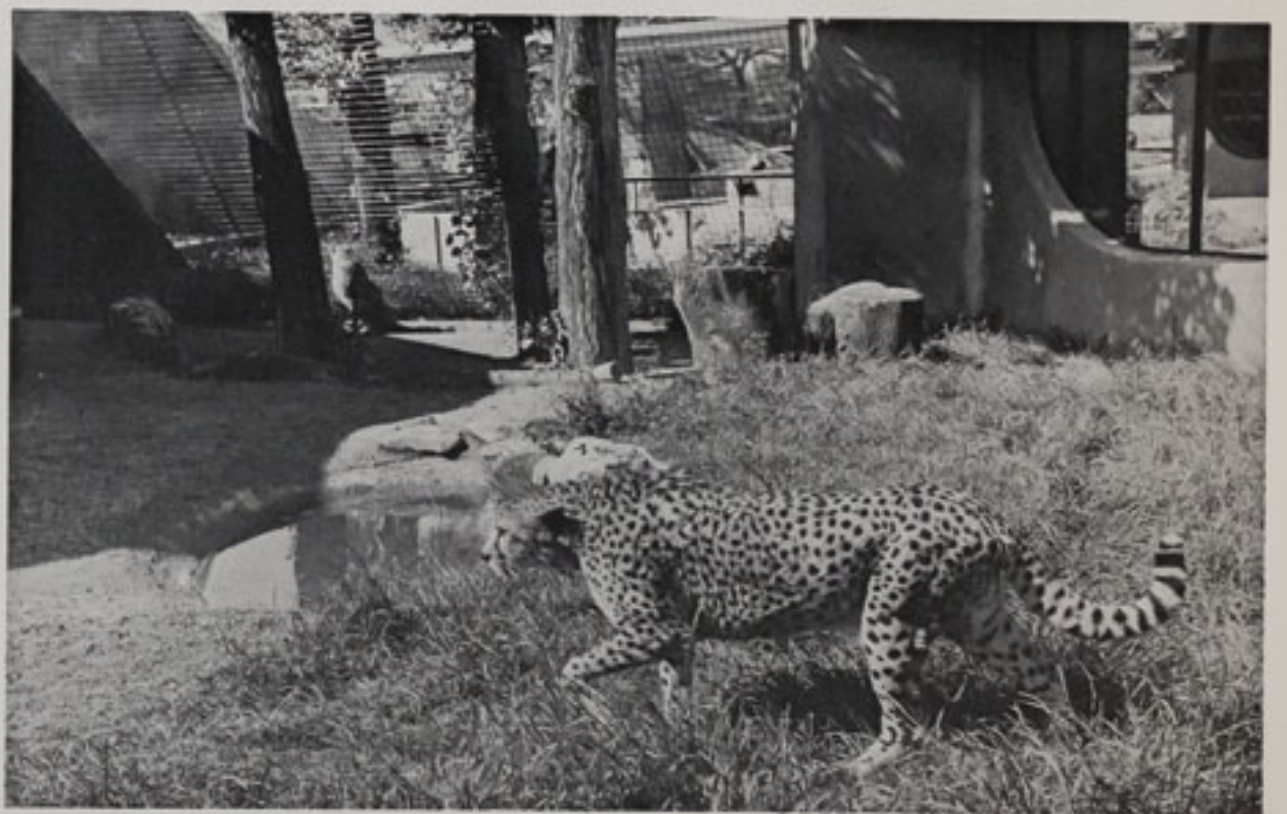
The Tiger Paddock



Northern Lynx



Servals



The Cheetah Paddock

Their Royal Highnesses The Duke and Duchess of Kent, at Whipsnade, July 14th



Johnny Morris at the London Zoo, 'Children's Day', May 1st



Photographs:
The Zoological
Society of London

General Matters

Catering Department

The Catering Department has had a busy and successful year, and were heavily involved with the functions, both at Regent's Park and Whipsnade, organized to mark the Anniversary celebrations.

Mr George Perkins, the General Manager Catering, retired at the end of September, but agreed to continue in a part-time capacity as Consultant to Zoo Restaurants Ltd. He was succeeded by Mr Colin Garland, who had been appointed Catering Manager (London and Whipsnade) in 1975.

In the light of rapidly increasing costs, various measures to improve efficiency and the financial viability of the Department were put in hand. These included the restructuring of the management into administrative and functional sections, and also the transfer of the management of Gate Kiosks to Zoo Enterprises Ltd.

The integration of the Members' and Public Restaurants on weekdays since January has resulted in relatively little disruption to Members. This measure was introduced in order to reduce costs.

Zoo Restaurants Ltd

Regent's Park The continued inflationary climate resulted in a reduction in banqueting enquiries and the cancellation of several functions which had been booked. The number of functions fell to 103, compared with 125 in 1975, and 162 in the peak year of 1974. This was not entirely unexpected, as entertainment is clearly an early casualty in recessionary times, but every effort is being made to make the facilities known to potential customers.

The Late Evening Openings of the Gardens for Members were well attended and about 350 Members and their guests dined on each of the four evenings.

Whipsnade Park Twenty-one functions were catered for during the year, as against 19 in 1975 when evening functions began at Whipsnade Park. This was considerably below our expectation and may be due to the same factors as those affecting Regent's Park.

Another Late Evening Opening of the Park for Members was held in June when 160 Members and their guests enjoyed a buffet supper.

Zoo Enterprises Ltd

Zoo Enterprises Ltd, which was formed in 1974 to undertake the sale of toys, souvenirs, etc. had successful trading results.

Staff

At the end of the year the Society's permanent full-time staff totalled 500. A list of senior members is given in Appendix 2.

The recognition already given to ASTMS as the representative body for the majority of the non-manual staff was further extended to cover the scientific technicians.

In accordance with the provisions of the Health and Safety at Work Act 1974 a statement of the Council's policy on health and safety was issued, together with general safety rules for all staff. More detailed safety rules were codified for the Keepers, the Gardeners and Laboratory staff.

In common with other employers the Society found that considerable additional work was generated by the implementation of recent legislation governing terms of employment. These developments have also added to the administrative costs, but no additional staff have been employed.

A party for the staff at Regent's Park and Whipsnade was held in October to celebrate the Society's Anniversary, and it was a pleasure to welcome a number of pensioners who attended.

Awards

Bronze Medals were awarded to Mr W. Dixon, Foreman, Works Department, Whipsnade; Miss D. Fitzgibbon, Supervisor, Regent Cafeteria, and Mr R. Humphrys, Headkeeper, Insect House, for long and meritorious service.

The following staff who had completed 25 years' service received gold watches: Mr O. Chamberlain, Park Manager, Whipsnade; Mr W. Dixon, Senior Keeper, Whipsnade; and Mr O. Mills, Head Gatekeeper, Regent's Park.

Appointments and Promotions

Mr R. R. G. Abbotts, *Finance Officer*
Mr D. Ashton, *Veterinary Officer, Whipsnade*
Mrs H. Bennell, *Assistant Senior Recorder, Zoological Record*
Mrs S. Bevis, *Assistant Librarian*
Miss J. Jupp, *Senior Accountancy Assistant*
Mr D. Lack, *Senior Cashier*
Miss V. Lawes, *Senior Supervisor, Catering Department*
Mr M. Magnier, *Head Gatekeeper, Regent's Park*
Mr D. Masey, *Superintendent, Retail Department*
Mr V. Nathen, *Main Office Housekeeper*
Miss R. Pey, *Supervisor, Regent Cafeteria*
Mr R. Raft, *Foreman Plant Engineer, Whipsnade*
Mr G. Rose, *Senior Assistant Manager (Catering), Catering Department*
Mr J. Secrett, *Senior Assistant Manager (Admin), Catering Department*

Retirements and Resignations

Retirements during the year included Mr G. J. Perkins, General Manager Catering, after 30 years' service; Mr W. N. Pickford, Chief Accountant, Miss D. Fitzgibbon, Supervisor, Regent Cafeteria and Mr W. Gilbert, Chef, Whipsnade, after 29 years' service; Mr O. Mills, Head Gatekeeper, Regent's Park, after 25 years' service; Miss H. Tompkins and Miss E. Tompkins, of Catering Department, Whipsnade after 19 and 17 years' service respectively; Mrs A. D. Jones, Supervisor, Catering Department, Regent's Park, after 18 years' service and Mr M. Othonos, Chargehand, Catering Department, Regent's Park, and Mr H. Weber, Gatekeeper, Regent's Park, both after 17 years' service.

Resignations included Dr I. F. Keymer, Pathologist and Miss F. J. Hamilton, Assistant Librarian, who took up the post of Information Officer for the Library Association.

Obituary

It is with great regret that we record the deaths of Miss E. Schmitz, Mr A. F. Shambrook, Mr A. Turvey, Mrs M. Whitmill and Mr G. Wright, all pensioned members of the Society's staff.

Acknowledgments

The Council records its gratitude to the members who serve on the committees; their expert advice and assistance is extremely 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.

The Council also gratefully acknowledges the assistance of many scientists, veterinarians, departments, organizations and firms for their cooperation. We constantly receive help from the British Museum (Natural History) and are most grateful to all the staff, including Miss A. Grandison, Dr N. Arnold, Mr Andrew S. Stimson 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; Kew Gardens for the many exotic plants that decorate our tropical houses; the Paddington Technical College, in particular Mr S. F. Everiss and his colleagues of the Biological Sciences Department, for their cooperation in organizing the Keepers' training courses; the Commanding Officer, Training Battalion, RAOC, for providing facilities for staff to practise the use of the emergency weapons; and St John Ambulance Brigade for their constant help at the First Aid Centre, Regent's Park.

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

The Veterinary Science Department by Dr W. H. Allan, Dr E. S. Anderson, Dr E. C. Appleby, Professor N. Ashton, Dr J. R. Baker, Mr H. A. McC. Calder, Dr P. Cavanagh, Mr J. E. Cooper, Dr G. A. Cullen, Dr E. Elkan, Dr R. Finlayson, Dr D. A. Gardner, Dr S. D. Gardner, Dr E. J. G. Glencross, Dr J. Grant, Dr H. Hoogstraal, Mr J. B. Kerry, Dr L. F. Khalil, Dr P. H. Lamont, Dr B. R. Laurence, Miss G. Lewis, Professor W. H. R. Lumsden, Dr M. J. Mitchinson, Mr C. Moreby, Mr D. Prentice, Dr J. Riley, Dr J. Robinson, Dr B. Rowe, Mr P. G. Sargeant, Professor G. B. D. Scott, Mr H. H. Skinner, Dr L. H. Turner, Mr P. F. Wadsworth, Dr S. Willmott and Professor A. Zuckerman.

The Nuffield Laboratories of Comparative Medicine and The Wellcome Laboratories of Comparative Physiology for financial support provided by Action Research on Multiple Sclerosis, The Boise Fund, Cadbury Schweppes Ltd, the John S. Cohen Foundation, the Ford Foundation, The International Olive Oil Council (Madrid), the Leverhulme Trust Fund, the Medical Research Council, the Medical Research Council of Nigeria, Merck Sharp and Dohme, the Ministry of Overseas Development, the Natural Environment Research Council, Pedigree Petfoods Ltd, The Pilgrim Trust, Reckitt and Colman, the Royal Society, Unilever NV (Vlaadingen), the Wellcome Trust, the Wolfson Foundation and the World Health Organization. Donations have been received from Mr Michael Dillon, Mitchell Beazley Publishers Ltd, Miles Yeda Ltd and Pye Research, and many colleagues and friends have provided research material.

Supplies, Shipping and Transport Section by the Department of Trade and Industry, Ministry of Agriculture, Fisheries and Food, HM Customs and Excise, Anglia Laboratory Animals, the Forestry Commission, Penllergaer, Swansea, the many people who have offered and sent Bamboo for the Giant Pandas and also Evergreen Oak for other animals, British Rail, British Airways, British Caledonian Airways, Brentport Ltd, RL Dobbs Transport, Industrial Freight Ltd, KLM Royal Dutch Airlines, Lufthansa German Airways, Pan American World Airlines, Qantas Airways and the Union-Castle Mail Steamship Company.

Whipsnade Park by Dr B. G. Bagnall, Dr W. R. Cook, Messrs C. M. Colles, J. G. Matthews, A. M. Scott and Miss K. Whitwell of the Animal Health Trust, the Agricultural Research Council's Institute of Animal Physiology, Aston Clinton Haulage, Bayer Ltd, British Rail, Dr W. H. Dudok van Heel, Dr E. P. J. Gibbs, Mr J. S. Gilmour, Dr G. M. Hall, Hoechst UK Ltd, KLM Royal Dutch Airlines, Mr P. A. Kingsbury, Ministry of Agriculture, Fisheries and Food, North of England Zoological Society, Reckitt and Colman, Mr E. T. Rees-Evans, Dr C. P. Royall, Mr L. R. Thomsett, United Counties Omnibus Company Ltd and the members of the British Red Cross Society who help to staff the First Aid Post.

Zuckerman

Secretary

Committees 1976-1977

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
Lady Casson, RIBA, FSIA

R. Romilly Fedden, CBE
Sir Dudley Forwood, Bt
A. M. Hassell, MA
Christopher Marler
The Hon. Ivor Montagu, *Chairman*
Geoffrey Schomberg, FLS
Nigel Sitwell
Lady Daphne Straight
The Duke of Wellington, MVO, OBE, MC
C. A. Wright, DSc, PhD, FIBiol
Woodrow L. Wyatt
Secretary: C. G. C. Rawlins, OBE, DFC

Finance Committee

Terms of Reference: To approve the annual estimates and annual accounts before presentation to Council; to examine the financial aspects of major projects; to receive reports on investments; and to advise Council on financial policy generally.

E. Michael Behrens
Aubrey Buxton, MC, DL, *Chairman*
The Earl of Cranbrook, CBE, MA, FLS

Lord Donaldson, OBE
Sir Terence Morrison-Scott, DSC, DSc
Sir Michael Perrin, CBE, FRIC
C. E. Gordon Smith, CB, MD, FRCP, FRCPath
Ronald G. Waterhouse, QC, JP, MA, LLB
The Duke of Wellington, MVO, OBE, MC
Woodrow L. Wyatt
Frank Yates, CBE, ScD, FRS
Secretary: R. R. G. Abbotts, ACMA, ACIS

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.

Professor G. H. Arthur, DVSc, FRCVS
Professor R. J. Berry, MA, PhD
Peter Cavanagh, MA, MD, FIBiol, DipBact
Miss Marie E. Coates, PhD

J. M. Knowles
Professor J. A. Laing, BSc, PhD, MRCVS
W. Lane-Petter, MA, MB, BChir, FIBiol
Chairman
N. W. Pirie, MA, FRS
A. J. Stevens, MA, BVSc, MRCVS, DipBact
A. D. Walker, PhD
W. L. Whitehouse, RD, MB, FRCS, FRCOG
A. N. Worden, PhD, DVetMed, DrMedVet,
FRCPath, FRCVS, FRIC, FIBiol
Secretary: D. M. Jones, BSc, BVetMed, MRCVS

The Institute
of Zoology
Steering Committee

Terms of Reference: To advise Council on matters relating to research, including the scientific programme, appointments and the acquisition and allocation of resources; to receive and approve the Director's Report to Council and the Statement of Accounts.

R. F. Crampton, PhD, MB, MRCP, FIBiol

Sir William Henderson, DSc, FRCVS, FIBiol, FRS
K. Mellanby, CBE, ScD, FIBiol
C. E. Gordon Smith, CB, MD, FRCP, FRCPath
Chairman
H. V. Thompson, BSc, FIBiol
C. A. Wright, DSc, PhD, FIBiol
Secretary: L. G. Goodwin, CMG, FRCP, FRS

Education Committee

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*
R. J. Court, BSc

S. F. Everiss, MBE, MA, MSc, FIBiol
J. S. Everton, MA
Miss Barbara Gilchrist, PhD
J. E. Spice, MA, DPhil
C. J. M. Trehwella, BSc
Peter Ward, BSc, MIBiol
C. H. Selby, HMI
Secretary: M. K. Boorer, BSc, DipEd

Publications Committee	<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</i> of the Society; and to make recommendations on Library policy.	Professor A. J. E. Cave, MD, DSc, FRCS, FLS Professor J. L. Cloudsley-Thompson, MA, PhD, DSc P. H. Greenwood, DSc, PLS J. P. Harding, PhD, FLS Professor J. D. Pye, PhD H. N. Southern, MA, DSc V. R. Southgate, PhD Professor J. E. Webb, DSc, PhD <i>Secretary:</i> H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol
Professor E. H. Ashton, PhD, DSc Professor E. J. W. Barrington, MA, DSc, FRS, <i>Chairman</i> Professor A. d'A. Bellairs, DSc, MRCS, FLS		
Zoological Record Committee	<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.	Professor J. Green, DSc, 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
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		
International Zoo Yearbook Editorial Board	<i>Terms of Reference:</i> To advise on the content, form and production of the <i>Yearbook</i> .	J. M. Knowles Christopher Marler Lord Medway, MA, PhD The late Professor A. T. Phillipson, MA, PhD, DVSc, MRCVS, FRSE Walter Van den bergh <i>Secretary:</i> P. J. S. Olney, BSc, DipEd, FLS
Miss Molly Badham Lord Craigton, PC, CBE Professor P. A. Jewell, MA, PhD <i>Chairman</i> Miss Janet Kear, PhD		
Awards Committee	<i>Terms of Reference:</i> The Council presents the following awards for contributions to zoology: The Stamford Raffles Award, the Scientific Medal, The Thomas Henry Huxley Award, the Silver Medal, The Zoological Society of London Frink Medal for British Zoologists and the Prince Philip Prize. The Committee advise Council on all matters relating to these awards.	Professor E. J. W. Barrington, MA, DSc, FRS <i>Chairman</i> The Earl of Cranbrook, CBE, MA, FLS Professor J. M. Dodd, PhD, DSc, FIBiol, FRSE, FRS. Miss Vera Fretter, DSc Miss Barbara Gilchrist, PhD H. N. Southern, MA, DSc Professor J. E. Webb, DSc, PhD C. A. Wright, DSc, PhD, FIBiol <i>Secretary:</i> H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol
E. Michael Behrens Aubrey Buxton, MC, DL, <i>Chairman</i> Lord Donaldson, OBE The Hon. Ivor Montagu Sir Michael Perrin, CBE, FRIC <i>Secretary:</i> Miss E. M. Owen, CBE		
Promotion Committee	<i>Terms of Reference:</i> To consider and advise Council on all measures relating to the promotion of the Society's aims and activities in order to ensure the long term stability of the Society.	

Staff

Directors:

Administration: Miss E. M. Owen, CBE
Science: L. G. Goodwin, CMG, FRCP, FRS*
Zoos: C. G. C. Rawlins, OBE, DFC
Architect: J. W. Toovey, AADipl(Hons), FRIBA
Assistant Director of Science, Curator of Aquarium and Invertebrates, Acting Curator of Reptiles: H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol*
Curator of Birds, Editor International Zoo Yearbook: P. J. S. Olney, BSc, DipEd, FLS*
Curator of Mammals: M. R. Brambell, VetMB, PhD, MRCVS, FLS*
Curator, Whipsnade Park: V. J. A. Manton, MRCVS*
Catering Manager (London and Whipsnade): C. J. Garland

Education Officer: M. K. Boorer, BSc, DipEd
Establishment Officer: M. E. McInerney
Finance Officer: R. R. G. Abbotts, ACMA, ACIS
Institute of Zoology:
Department of Veterinary Science:
 See page 25
Nuffield Laboratories of Comparative Medicine: See page 25
Wellcome Laboratories of Comparative Physiology: See page 25
Librarian: R. A. Fish, FLA
Publications Department: See pages 18 & 19
Public Relations Officer: J. A. Dale, MIPR
Retail Manager (London and Whipsnade): J. F. Brown
Senior Veterinary Officer: D. M. Jones, BSc, BVetMed, MRCVS*

London Zoo

Gardens Executive: J. McCorty
Head Gardener: T. Law
Maintenance Manager: L. G. Taverner
Overseer of Birds: D. H. Newson
Overseers of Mammals: T. Sangster, J. Lambden
Overseer of Reptiles: D. Ball, AIAT
Purchasing and Transport Manager: H. J. Mason, MInstPS, MASM
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. Humphrys, 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: R. B. Willis
Ungulates: T. B. Kitchenside

Whipsnade Park

Park Manager: O. C. Chamberlain
Veterinary Officer: D. G. Ashton, MA, VetMB, 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, PRA, RDI, RIBA
Consulting Landscape Architect: Professor 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

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

* Also members of the Institute of Zoology

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

		Total number acquired	Number born or hatched in the Collection			Total number acquired	Number born or hatched in the Collection
REGENT'S PARK							
Mammals							
MARSUPIALIA							
<i>Petaurus breviceps</i>	Shortheaded Flying Phalanger	2	2	<i>Clethrionomys glareolus</i>	Bank Vole	19	19 (1)
<i>Macropus rufogriseus</i>	Red-necked Wallaby	2 (1)	1	<i>Lagurus lagurus</i>	Steppe Lemming	2	
<i>Macropus giganteus</i>	Eastern Grey Kangaroo	1	1	<i>Gerbillus pyramidum</i>	Greater Egyptian Gerbil	14	14
<i>Macropus parma</i>	White-throated Wallaby	1	1	<i>Meriones shawi</i>	Shaw's Jird	5	5
<i>Potorous tridactylus</i>	Long-nosed Potoroo	6	6 (4)	<i>Micromys minutus</i>	Harvest Mouse	2	
<i>Trichosurus vulpecula</i>	Brush-tailed Possum	3		<i>Apodemus sylvaticus</i>	Field Mouse	1	
				<i>Mastomys natalensis</i>	Multimammate Mouse	41	37 (16)
				<i>Grammomys dolichurus</i>	Long-tailed Thicket Rat	32	32 (3)
CHIROPTERA							
<i>Pteropus giganteus</i>	Indian Fruit Bat	6	6 (1)	<i>Arvicanthus niloticus</i>	Nile Rat	5	5
				<i>Acomys cahirinus</i>	Arabian Spiny Mouse	3	3
				<i>Glis glis</i>	Fat Dormouse	8	6 (2)
				<i>Atherurus africanus</i>	African Brush-tailed Porcupine	2	2 (1)
					Brazilian Tree Porcupine	1	
PRIMATES							
<i>Tupaia glis</i>	Tree Shrew	5	5	<i>Coendou prehensilis</i>	Cuis	3	3
<i>Tupaia minor</i>	Gunther's Tree Shrew	2		<i>Galea musteloides</i>	Mara	8	8 (3)
<i>Tupaia tana</i>	Large Tree Shrew	1		<i>Dolichotis patagonum</i>	Cuban Hutia	2	
<i>Lemur catta</i>	Ring-tailed Lemur	1	1	<i>Capromys pilorides</i>	Jamaican Hutia	2	
<i>Lemur variegatus</i>	Ruffed Lemur	2	2	<i>Geocapromys brownii</i>	Degu	3	3
<i>Lemur fulvus</i>	Brown Lemur	3	3	<i>Octodon degus</i>	Casiragua	12	12 (3)
<i>Loris tardigradus</i>	Slender Loris	1	1				
<i>Nycticebus coucang</i>	Slow Loris	1	1	CARNIVORA			
<i>Galago crassicaudatus</i>	Thick-tailed Bushbaby	1	1	<i>Nasua nasua</i>	Ring-tailed Coati	5	5 (3)
<i>Galago senegalensis</i>	Senegal Bushbaby	2	2	<i>Ailurus fulgens</i>	Red Panda	1 (1)	
<i>Aotus trivirgatus</i>	Douroucouli	1	1	<i>Genetta tigrina</i>	Blotched Genet	2	2
<i>Cebus apella</i>	Brown Capuchin	2	2	<i>Arctogalidia trivirgata</i>	Small-toothed Palm Civet	4	4
<i>Callithrix jacchus</i>	Common Marmoset	6	6 (2)				
<i>Callithrix argentata</i>	Silvery Marmoset	4		<i>Suricata suricatta</i>	Suricate Meerkat	1 (1)	
<i>Saguinus oedipus</i>	Cotton-headed Tamarin	2	2 (2)	<i>Felis bengalensis</i>	Leopard Cat	1	
<i>Saguinus illigeri</i>	Red-mantled Tamarin	4	4 (1)	<i>Felis caracal</i>	Caracal Lynx	2	
<i>Macaca nemestrina</i>	Pig-tailed Macaque	3	3	<i>Felis lynx</i>	Northern Lynx	2 (2)	
<i>Mandrillus sphinx</i>	Mandrill	1	1	<i>Felis serval</i>	Serval	1	1 (1)
<i>Theropithecus gelada</i>	Gelada Baboon	1	1	<i>Felis wiedi</i>	Margay	2	1
<i>Cercopithecus pygerythrus</i>	Vervet Monkey	1	1	<i>Panthera leo</i>	Lion	1 (1)	
<i>Hylobates lar</i>	Lar Gibbon	1	1	<i>Panthera tigris</i>	Tiger (Sumatran form)	1 (1)	
<i>Gorilla gorilla</i>	Gorilla (Lowland form)	2	1	<i>Panthera pardus</i>	Leopard (Chinese form)	1	1 (1)
				<i>Acinonyx jubatus</i>	Cheetah	1 (1)	
EDENTATA							
<i>Myrmecophaga tridactyla</i>	Giant Anteater	2		PINNIPEDIA			
<i>Choloepus didactylus</i>	Two-toed Sloth	1		<i>Zalophus californianus</i>	Californian Sealion	2	1 (1)
<i>Priodontes giganteus</i>	Giant Armadillo	1					
RODENTIA							
<i>Ratufa bicolor</i>	Malayan Giant Squirrel	2	2 (1)	PERISSODACTYLA			
<i>Funisciurus pyrrhopus</i>	Fire-footed Squirrel	2	2 (2)	<i>Asinus hemionus</i>	Onager (Turkmen form)	1	1
<i>Tamias sibiricus</i>	Siberian Chipmunk	4	4 (2)	<i>Equus burchelli</i>	Common Zebra	2	2 (1)
<i>Peromyscus maniculatus</i>	Deer Mouse	15	15				
<i>Phodopus sungorus</i>	Dwarf Hamster	199	190 (12)	ARTIODACTYLA			
<i>Cricetulus barabensis</i>	Chinese Hamster	26	22 (2)	<i>Sus scrofa</i>	Wild Boar	5	5

		Total number acquired	Number born or hatched in the Collection			Total number acquired	Number born or hatched in the Collection
<i>Phacochoerus aethiopicus</i>	Wart Hog	2		GALLIFORMES			
<i>Lama glama</i>	Llama	2 (2)		<i>Alectoris rufa</i>	Red-legged Partridge	3	
<i>Lama guanicoe</i>	Guanaco	2 (2)		<i>Tragopan satyra</i>	Satyr Tragopan	2	
<i>Camelus bactrianus</i>	Bactrian Camel	2	2	<i>Lophophorus impeyanus</i>	Impeyan Pheasant	2(2)	
<i>Camelus dromedarius</i>	Arabian Camel	1 (1)		<i>Lophura leucomelana</i>	Nepal Kalij Pheasant	1	1
<i>Cervus timorensis</i>	Timor Deer	5	3	<i>Lophura nycthemera</i>	Silver Pheasant	11	11
<i>Pudu pudu</i>	Pudu	1		<i>Lophura imperialis</i>	Imperial Pheasant	2	2
<i>Rangifer tarandus</i>	Reindeer	1 (1)		<i>Lophura swinhoii</i>	Swinhoe's Pheasant	2	2
<i>Giraffa camelopardalis</i>	Giraffe	2	2	<i>Lophura ignita rufa</i>	Vieillot's Fireback	2	
<i>Tragelaphus angasi</i>	Nyala	1		<i>Crossoptilon crossoptilon</i>	White Eared Pheasant	2	
<i>Tragelaphus strepsiceros</i>	Greater Kudu	1	1	<i>Crossoptilon mantchuricum</i>	Brown Eared Pheasant	1	
<i>Bos grunniens</i>	Yak	2	2	<i>Crossoptilon auritum</i>	Blue Eared Pheasant	1	
<i>Bison bison</i>	American Bison	3	3	<i>Catreus wallichi</i>	Cheer Pheasant	3	3
<i>Cephalophus monticola</i>	Blue Duiker (Maxwell's Duiker)	4		<i>Syrmaticus mikado</i>	Mikado Pheasant	8 (1)	7
<i>Oryx gazella</i>	Gemsbok	2		<i>Syrmaticus soemmerringi</i>	Copper Pheasant	1	
<i>Oryx tao</i>	Scimitar-horned Oryx	2	2	<i>Syrmaticus reevesi</i>	Reeves's Pheasant	8	8
<i>Addax nasomaculatus</i>	Addax	2		<i>Phasianus colchicus</i>	Common Pheasant	7	6
<i>Connochaetes taurinus</i>	Brindled Gnu	1	1	<i>Chrysolophus pictus</i>	Golden Pheasant	5	5
<i>Antilope cervicapra</i>	Blackbuck	12	12 (2)	<i>Polyplectron emphanum</i>	Palawan Peacock Pheasant	4	
<i>Capra falconeri</i>	Markhor	3	3	<i>Argusianus argus</i>	Argus Pheasant	2	
<i>Ammotragus lervia</i>	Barbary Sheep	10	10 (3)	<i>Pavo cristatus</i>	Common Peafowl	1	1
<i>Ovis musimon</i>	Mouflon	8	8 (5)	<i>Pavo muticus</i>	Green Peafowl	2	
<i>Ovis canadensis</i>	Bighorn Sheep	1	1	<i>Numida meleagris</i>	Helmeted Guineafowl	11	11
DOMESTIC				GRUIFORMES			
	Goat	16	16 (1)	<i>Grus antigone</i>	Sarus Crane	1	1
	Dorset Down Sheep	13	13	<i>Grus monacha</i>	Hooded Crane	1	
	Cattle	2	2 (1)	CHARADRIIFORMES			
Birds				<i>Haematopus ostralegus</i>	Oystercatcher	4	2 (2)
SPHENISCIFORMES				<i>Himantopus himantopus</i>	Black-winged Stilt	10	
<i>Pygoscelis papua</i>	Gentoo Penguin	4		<i>Vanellus vanellus</i>	Lapwing	1	
<i>Eudyptes crestatus</i>	Rockhopper Penguin	2	2 (1)	<i>Calidris alpina</i>	Dunlin	2	
PELECANIFORMES				<i>Philomachus pugnax</i>	Ruff	1	1 (1)
<i>Pelecanus onocrotalus</i>	Eastern White Pelican	2 (2)		<i>Larus cirrocephalus</i>	Grey-headed Gull	5	5
<i>Pelecanus crispus</i>	Crested Pelican	1 (1)		<i>Larus poiocephalus</i>			
CICONIFORMES				<i>Larus novaehollandiae</i>	Silver Gull	1	1
<i>Ardeola ibis</i>	Cattle Egret	3	3	COLUMBIFORMES			
<i>Ciconia abdimii</i>	Abdim's Stork	12		<i>Columba guinea</i>	Speckled Pigeon	5	5
<i>Threskiornis aethiopicus</i>	Sacred Ibis	5	5 (2)	<i>Streptopelia chinensis</i>	Chinese Necklace Dove	6	6
<i>Eudocimus ruber</i>	Scarlet Ibis	1		<i>Streptopelia chinensis</i>			
<i>Phoenicopterus chilensis</i>	Chilean Flamingo	2	2	<i>Phaps elegans</i>	Brush Bronze-winged Pigeon	4	4
ANSERIFORMES				<i>Geotrygon versicolor</i>	Mountain Witch Dove	8	8
<i>Anser fabalis</i>	Pink-footed Goose	1		<i>Dacula badia cuprea</i>	Jerdon's Imperial Pigeon	1	1 (1)
<i>Anser brachyrhynchus</i>				PSITTACIFORMES			
<i>Anser caerulescens</i>	Snow Goose	6	6 (2)	<i>Pseudeos fuscata</i>	Dusky Lory	2	
<i>Branta sandvicensis</i>	Hawaiian Goose	1	1 (1)	<i>Nymphicus hollandicus</i>	Cockatiel	3	
<i>Branta bernicla orientalis</i>	Pacific Brent Goose	4		<i>Psephotus haematonotus</i>	Red-rumped Parrakeet	4	4 (1)
<i>Aix galericulata</i>	Mandarin Duck	7 (7)		<i>Loriculus vernalis</i>	Vernal Hanging Parrot	1	
<i>Anas sibilatrix</i>	Chiloe Wigeon	7 (5)	2	<i>Psittacula krameri</i>	Indian Ring-necked Parrakeet	1	
<i>Anas falcata</i>	Falcated Teal	4 (4)		<i>Psittacula manillensis</i>			
<i>Anas crecca crecca</i>	Green-winged Teal	2		<i>Psittacula cyanocephala</i>	Plum-headed Parrakeet	1	
<i>Anas querquedula</i>	Garganey Teal	2		<i>Nandayus nenday</i>	Black-headed Conure	2	
<i>Netta peposaca</i>	Rosy-billed Duck	1	1	<i>Enicognathus</i>	Slender-billed Parrakeet	1	
<i>Somateria mollissima</i>	Eider Duck	2		<i>Enicognathus leptorhynchus</i>			
FALCONIFORMES				<i>Myopsitta monachus</i>	Quaker Parrakeet	1	
<i>Torgos tracheliotus</i>	Lappet-faced Vulture	1		<i>Amazona amazonica</i>	Orange-winged Parrot	1	

		Total number acquired	Number born or hatched in the Collection			Total number acquired	Number born or hatched in the Collection
CUCULIFORMES							
<i>Tauraco hartlaubi</i>	Hartlaub's Touraco	1		<i>Quelea quelea</i>	Red-billed Quelea	4	
<i>Tauraco leucotis</i>	White-cheeked Touraco	2	2	<i>Pycnonotus leucogenys leucotis</i>	White-eared Bulbul	1	
<i>Tauraco corythaix persa</i>	West African Touraco	1		<i>Spreo superbus</i>	Superb Glossy Starling	1	1
STRIGIFORMES							
<i>Tyto alba</i>	Barn Owl	3		<i>Garrulus glandarius</i>	Jay	1	
<i>Otus leucotis</i>	White-faced Scops Owl	2		<i>Cyanopica cyana</i>	Azure-winged Magpie	2	
<i>Bubo bubo bubo</i>	Great Eagle Owl	3	3	<i>Pyrhacorax graculus</i>	Alpine Chough	2	
<i>Bubo africanus</i>	Abyssinian Spotted Eagle Owl	1		<i>Corvus corone</i>	Carrion Crow	1	
<i>Bubo poensis</i>	Fraser's Eagle Owl	2		Reptiles			
<i>Ketupa ketupu</i>	Javan Fish Owl	1		TESTUDINES			
<i>Pulsatrix perspicillata</i>	Spectacled Owl	1		<i>Kinosternon subrubum</i>	Pennsylvanian Mud Terrapin	1	
<i>Nyctea scandiaca</i>	Snowy Owl	4	4 (1)	<i>Chrysemys scripta scripta</i>	Yellow-bellied Terrapin	3	
<i>Glaucidium brodiei</i>	Collared Pygmy Owl	2		<i>Chrysemys scripta elegans</i>	Red-eared Terrapin	8	
<i>Athene noctua</i>	Little Owl	1		<i>Mauremys caspica leprosa</i>	Spanish Terrapin	1	
<i>Speotyto cucularia</i>	Burrowing Owl	2		<i>Testudo graeca</i>	Mediterranean Spur-thighed Tortoise	2	
APODIFORMES							
<i>Colibri coruscans</i>	Sparkling Violet-eared Humming Bird	4		<i>Testudo hermanni</i>	Hermann's Tortoise	1	
<i>s Metallura tyriantina</i> (Loddiges) Northern S. America	Tyrian Metal-tailed Humming Bird	2		<i>Testudo marginata</i>	Marginated Tortoise	1	
CORACIIFORMES							
<i>Dacelo novaeguineae</i>	Laughing Kingfisher	1	1	<i>Testudo horsfieldii</i>	Horsfield's Tortoise	1	
<i>Tockus birostris</i>	Indian Grey Hornbill	1		<i>Geochelone elegans</i>	Starred Tortoise	4	
<i>Tockus alboterminatus</i>	Crowned Hornbill	2		<i>Malacochersus tornieri</i>	Pancake Tortoise	1	
<i>Tockus erythrorhynchus</i>	Red-billed Hornbill	2	2 (1)	<i>Geochelone pardalis</i>	Leopard Tortoise	2	
<i>Tockus deckeni jacksoni</i>	Jackson's Hornbill	1	1	<i>Pelomedusa subrufa subrufa</i>	Helmeted Terrapin	1	
<i>Buceros hydrocorax</i>	Luzon Hornbill	1		<i>Chelodina longicollis</i>	Eastern Snake-necked Turtle	2	
PICIFORMES							
<i>Tricholaema lacrymosum</i>	Spotted-flanked Barbet	4		<i>Trionyx cartilagineus</i>	Phayre's Soft-shelled Turtle	1	
<i>Lybius bidentatus</i>	Double-toothed Barbet	2		CROCODYLIA			
<i>Ramphastos vitellinus ariel</i>	Ariel Toucan	2		<i>Crocodylus siamensis</i>	Siamese Crocodile	2	
<i>Ramphastos toco</i>	Toco Toucan	2		SAURIA			
<i>Ramphastos tucanus</i>	Red-billed Toucan	2		<i>Gehyra mutilata</i>	Peron's House Gecko	1	
PASSERIFORMES							
<i>Anthus pratensis</i>	Meadow Pipit	2		<i>Gekko gekko</i>	Tokay Gecko	1	
<i>Turdus merula</i>	Blackbird	1		<i>Tarentola mauritanica</i>	Moorish Gecko	1	
<i>Turdus iliacus</i>	Redwing	1		<i>Phelsuma abbottii abbottii</i>	Abbott's Day Gecko	2	
<i>Paroaria coronata</i>	Red Crested Cardinal	2		<i>Phelsuma sp.</i>	Jewel Gecko	1	
<i>Cardinalis cardinalis</i>	Virginia Cardinal	1		<i>Eublepharis macularius</i>	Leopard Ground Gecko	4	
<i>Carduelis chloris</i>	Greenfinch	5	2	<i>Chalcides sp.</i>	Skink	7	7(7)
<i>Carduelis carduelis</i>	Goldfinch	1		<i>Iguana iguana</i>	Common Iguana	1	
<i>Pyrhula pyrhhula</i>	Bullfinch	1		<i>Sauromalus obesus</i>	Chuckwalla	1	
<i>Estrilda melpoda</i>	Orange-cheeked Waxbill	3		<i>Ceratophora stoddarti</i>	Stoddart's Lizard	5	
<i>Estrilda troglodytes</i>	Common Waxbill	1		<i>Cophotis ceylanica</i>	Deaf Agamid	5	
<i>Emblema guttata</i>	Diamond Sparrow	1		<i>Calotes versicolor</i>	Harlequin Lizard or Bloodsucker	8	
<i>Poephila guttata castanotis</i>	Zebra Finch	20	20	<i>Calotes nigrilabris</i>	Black-lipped Agama	4	
<i>Poephila acuticauda</i>	Long-tailed Grass Finch	2		<i>Agama agama</i>	Margouillat Lizard	1	
<i>Lonchura malacca</i>	Tri-coloured Mannikin	1		<i>Agama caucasica</i>	Caucasian Agama	1	
<i>Padda fuscata</i>	Cut-throat Finch	1		<i>Physignathus concinnus</i>	Cochin China Water Dragon	1	
<i>Padda oryzivora</i>	Java Sparrow	2		<i>Leiolepis belliana</i>	Bell's Agama	7	
<i>Ploceus velatus vitellensis</i>	Masked Weaver	1		<i>Chamaeleo chamaeleon</i>	Common Chameleon	1	

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<i>Chamaeleo bitaeniatus</i>	Montane Side-striped Chameleon	1		<i>Pipa pipa</i>	Surinam Frog	4	
<i>elliotti</i>				<i>Bombina orientalis</i>	Eastern Fire-bellied Toad	8	
<i>Egernia cunninghami</i>	Cunningham's Skink	3		<i>Bufo mauritanicus</i>	Moroccan Toad	2	
<i>Trachydosaurus rugosus</i>	Shingleback	1		<i>Bufo regularis</i>	Common African Square-marked Toad	2	
<i>Tiliqua scincoides</i>	Eastern Blue-tongued Skink	1		<i>Bufo bufo</i>	Common Toad	11	
<i>Gerrhosaurus vallisus</i>	Robust Plated-lizard	1		<i>Bufo americanus</i>	American Toad	2	
<i>Gerrhosaurus major</i>	Greater Plated-lizard	2		<i>Bufo woodhousei fowleri</i>	Fowler's Toad	2	
<i>Lacerta lepida</i>	Eyed Lizard	2		<i>Hyla arborea</i>	European Tree Frog	12	
<i>Podarcis pityusensis</i>	Ibiza Wall-lizard	2		<i>Hyla crucifer</i>	Spring Peeper	5	
<i>Tupinambis teguixin</i>	Great Tegu	1		<i>Hyla chrysoscelis</i>	Gray Tree Frog	2	
<i>Varanus niloticus</i>	Nile Monitor	2		<i>Hyla regilla</i>	Pacific Tree Frog	3	
<i>Ophisaurus apodus</i>	Scheltopusik	1		<i>Hyla rubra rubra</i>	Daudin's Hyla	1	
<i>Cordylus giganteus</i>	Sungazer	2		<i>s Pseudacris clarkii</i>	Spotted Chorus Frog	2	
<i>Cordylus warreni breyeri</i>	Breyer's Armoured Lizard	1			(Baird) (Southern USA)		
SERPENTES				<i>Rana ridibunda</i>	Marsh Frog	21	
<i>Liasis amethystinus</i>	Amethystine Python	1		<i>Rana temporaria</i>	Common Frog	31	
<i>Python reticulatus</i>	Reticulated Python	1		<i>Rana fuscigula</i>	Dusky-throated Frog	1	
<i>Python regius</i>	Royal Python	4		<i>Rana catesbeiana</i>	American Bull-frog	2	
<i>Chondropython viridis</i>	Papuan Tree Python	2		<i>Rana pipiens</i>	Leopard Frog	2	
<i>Boa constrictor</i>	Boa Constrictor	4	2	<i>Rana erythraea</i>	Gold-lined Frog	3	
<i>Natrix natrix</i>	Grass Snake	1		<i>Rana limnocharis</i>	Rice Paddy Frog	1	
<i>Natrix tessellata</i>	Diced Water Snake	1		<i>g Oeidozyga lima</i>	Frog	3	
<i>Natrix maura</i>	Viperine Snake	1			Kuhl & Van Hasselt (SE Asia)		
<i>Coluber jugularis</i>	Large Whip Snake	1		<i>Polypedetes leucomystax</i>	Common Malaysia Tree Frog	2	
<i>Elaphe radiata</i>	Eastern Copperhead Rat Snake	1		<i>Hyperolius sp.</i>	African Reed Frog	4	
<i>Hydrodynastes gigas</i>	Boipevussu Snake	17	17	<i>Dendrobates tinctorius</i>	Poison Arrow Frog	4	
<i>Rhamphiophis oxyrhynchus rostratus</i>	Rufous-beaked Snake	3		<i>histrionicus</i>			
<i>Psammophis sibilans</i>	African Beauty Snake	2		<i>Kaloula pulchra</i>	Common Malaysia Narrow-mouthed Frog	3	
<i>Ahaetulla prasina</i>	Emerald Whip Snake	1		WHIPNADE PARK			
<i>Chrysopelea ornata</i>	Flying Snake	2		Mammals			
<i>Naje haje</i>	Egyptian Cobra	1		MARSUPIALIA			
<i>Dendroaspis jamesoni jamesoni</i>	Jameson's Mamba	2		<i>Macropus rufogriseus</i>	Red-necked Wallaby	131	131 (2)
<i>Vipera berus</i>	Adder	1		PRIMATES			
<i>Vipera lebetina</i>	Levantine Viper	1		<i>Erythrocebus patas</i>	Patas Monkey	5	
<i>Bitis arietans</i>	Puff Adder	1		<i>Pan troglodytes</i>	Chimpanzee	1	1 (1)
<i>Cerastes cerastes</i>	Horned Cerastes Viper	1		RODENTIA			
<i>Agkistrodon piscivorus</i>	Cottonmouth	1		<i>Cynomys ludovicianus</i>	Prairie Marmot	30	30
<i>Agkistrodon contortrix mokasen</i>	Northern Copperhead	3		<i>Dolichotis patagonum</i>	Mara	11	11 (5)
<i>Agkistrodon contortrix contortrix</i>	Southern Copperhead	1		CARNIVORA			
<i>Agkistrodon rhodostoma</i>	Malaysian Pit Viper	2		<i>Lycaon pictus</i>	Cape Hunting Dog	1	1 (1)
<i>Trimeresurus popeorum</i>	Pope's Pit Viper	1		<i>Thalarctos maritimus</i>	Polar Bear	1	1
<i>Crotalus atrox</i>	Western Diamond-back Rattlesnake	3		<i>Nasua nasua</i>	Coati	6	6 (3)
AMPHIBIA				<i>Ailurus fulgens</i>	Red Panda	2	2 (1)
<i>Triturus vulgaris</i>	Smooth Newt	7		<i>Suricata suricatta</i>	Suricate Meerkat	5	5 (4)
<i>Salamandra salamandra</i>	European Spotted Salamander	1		<i>Felis lynx</i>	Northern Lynx	1	1 (1)
<i>Ambystoma mexicanum</i>	Axolotl	73	61	<i>Felis serval</i>	Serval	1+	1+
<i>Xenopus laevis</i>	Clawed Frog	4			No.	No.	
<i>Xenopus borealis</i>	Clawed Frog	6			Un-known	Un-known	

		Total number acquired	Number born or hatched in the Collection			Total number acquired	Number born or hatched in the Collection
<i>Panthera leo</i>	Lion	8	8 (5)	Birds			
<i>Panthera tigris</i>	Tiger (Sumatran form)	4	4 (2)	RHEIFORMES			
<i>Acinonyx jubatus</i>	Cheetah	10	9 (3)	<i>Rhea americana</i>	Common Rhea	26	26 (24)
PERISSODACTYLA				CASUARIIFORMES			
<i>Equus przewalskii</i>	Przewalski's Horse	4	4 (1)	<i>Dromaius novaehollandiae</i>	Emu	8	8 (4)
<i>Equus burchelli</i>	Common Zebra	2 (1)	1 (1)	SPHENISCIFORMES			
<i>Rhinoceros unicornis</i>	Indian Rhinoceros	1		<i>Spheniscus humboldti</i>	Humboldt's Penguin	9	9 (2)
<i>Ceratotherium simum</i>	White Rhinoceros	5	5 (1)	CICONIIFORMES			
ARTIODACTYLA				<i>Ciconia ciconia</i>	White Stork	1 (1)	
<i>Sus scrofa</i>	Wild Boar	No. Un-known	No. Un-known	<i>Phoenicopterus ruber ruber</i>	Rosy Flamingo	6	6
<i>Tayassu tajacu</i>	Collared Peccary	4	4 (1)	<i>Phoenicopterus chilensis</i>	Chilean Flamingo	4	4
<i>Hippopotamus amphibius</i>	Hippopotamus	2	2	ANSERIFORMES			
<i>Choeropsis liberiensis</i>	Pygmy Hippopotamus	2	2 (1)	<i>Anser indicus</i>	Bar-headed Goose	3	3
<i>Lama glama</i>	Llama	14 (1)	13 (4)	<i>Branta sandvicensis</i>	Hawaiian Goose	3	3
<i>Lama guanicoe</i>	Guanaco	10 (1)	9 (1)	<i>Branta ruficollis</i>	Red-breasted Goose	1	1
<i>Camelus bactrianus</i>	Bactrian Camel	4	4 (1)	<i>Cereopsis novaehollandiae</i>	Cereopsis Goose	8	6 (4)
<i>Camelus dromedarius</i>	Arabian Camel	1 (1)		<i>Tadorna variegata</i>	New Zealand Shelduck	2	
<i>Muntiacus reevesi</i>	Reeves' Muntjac	1	1	<i>Anas falcata</i>	Falcated Teal	11	11 (2)
<i>Dama dama</i>	Fallow Deer	13	13	<i>Lophonetta specularioides</i>	Crested Duck	9	9
<i>Axis axis</i>	Axis Deer	11	11 (4)	<i>Somateria mollissima</i>	Eider Duck	2	
<i>Axis porcinus</i>	Hog Deer	11	11 (5)	GALLIFORMES			
<i>Cervus duvauceli</i>	Barasingha	5	4 (1)	<i>Meleagris gallopavo</i>	North American Turkey	20	20 (1)
<i>Cervus nippon</i>	Sika Deer (Ryukyu × Japanese form)	4	4	<i>Lophophorus impeyanus</i>	Impeyan Pheasant	12	12 (4)
	Sika Deer (Formosan form)	10	10 (5)	<i>Crossoptilon mantchuricum</i>	Brown Eared Pheasant	4	
<i>Cervus elaphus</i>	Red Deer	9	9 (2)	<i>Syrnaticus soemmerringi scintillans</i>	Scintillating Copper Pheasant	1	
<i>Elaphurus davidianus</i>	Pere David's Deer	10	10 (2)	<i>Phasianus colchicus</i>	Common Pheasant	7 (7)	
<i>Alces alces</i>	Moose	3	3 (3)	<i>Chrysolophus amherstiae</i>	Lady Amherst's Pheasant	3	
<i>Rangifer tarandus</i>	Reindeer	4	4 (2)	<i>Pavo cristatus</i>	Common Peafowl	11 (1)	10 (2)
<i>Hydropotes inermis</i>	Chinese Water Deer	50	50 (1)	<i>Numida meleagris</i>	Helmeted Guineafowl	11 (11)	
<i>Giraffa camelopardalis</i>	Giraffe	1	1 (1)	GRUIFORMES			
<i>Tragelaphus spekei</i>	Sitatunga	3	3	<i>Balearica regulorum regulorum</i>	South African Crowned Crane	12	
<i>Boselaphus tragocamelus</i>	Nilgai	6	6 (1)	PSITTACIFORMES			
<i>Bos grunniens</i>	Yak	2	2	<i>Cacatua sulphurea</i>	Lesser Sulphur-crested Cockatoo	1	
<i>Syncerus caffer</i>	Cape Buffalo	2 (2)		<i>Platycercus eximius</i>	Eastern Rosella	1	
<i>Bison bonasus</i>	European Bison	1		<i>Platycercus eximius ceciliae</i>	Golden-mantled Rosella	2	2 (1)
<i>Bison bison</i>	American Bison	4	4	<i>Forpus xanthopterygius</i>	Blue-winged Parrotlet	1	
<i>Oryx tao</i>	Scimitar-horned Oryx	2 (2)		STRIGIFORMES			
<i>Connochaetes taurinus</i>	Brindled Gnu	3	3	<i>Bubo capensis mackinderi</i>	Kenya Eagle Owl	1	1 (1)
<i>Antilope cervicapra</i>	Blackbuck	1 (1)		<i>Nyctea scandiaca</i>	Snowy Owl	2	2
<i>Gazella thomsoni</i>	Thomson's Gazelle	11	11 (4)	PASSERIFORMES			
<i>Ovibos moschatus</i>	Musk Ox	2	2	<i>Serinus mozambicus</i>	Green Singing Finch	2	
<i>Ovis musimon</i>	Mouflon	13	13 (3)	<i>Estrilda astrild</i>	St. Helena Waxbill	2	
DOMESTIC				<i>Gracula religiosa</i>	Southern Hill Myna	1	
	Windsor White Goat	7	7 (6)				
	Dorset Down Sheep	2 (2)					

List of Donors of Animals to the Society

HM The Queen deposited the following animals received as a gift from the President of Brazil: 2 Giant Anteaters, 1 Giant Armadillo, 1 Two-toed Sloth, 2 Toco Toucan, 2 Ariel Toucan, 2 Red-billed Toucan.

REGENT'S PARK

- Abrahall, Mr R. G., 1 Batfish
 Antwerp, Royal Zoological Society, 1 Pudu
 Aistrop, Mr J., 4 *Pelmatochromis kribensis*
 Atkinson, Miss A., 1 European Spotted Salamander
 Basset, Mrs M., 1 Boa Constrictor
 Bennett, Mrs L., 1 Little Owl
 Benson, Mrs J., 1 Black-headed Conure
 Biddulph, Dr, 1 Royal Python
 Bird, Mr D., 1 Scheltopusik
 Bird, Mr P., 5 Silver Dollar Fish
 Boulenger, Miss C., 1 Rufous-beaked Snake
 Bristol, Clifton and West of England Zoological Society, 1 Luzon Hornbill (Deposit)
 British Railways, Euston Station, 1 Diced Water Snake
 Brooke, Mrs D., 1 Spur-thighed Tortoise
 Bunclark, Master K. & Miss L., 1 Daudin's Hyla
 Butler, Master P., 1 Praying Mantis, 2 Orb-web Spiders, 1 Gecko *Phelsuma* sp., 1 Peron's House Gecko
 Campbell, Mr G., 3 Yellow-bellied Terrapin, 1 Pennsylvanian Mud Terrapin
 Chessington Zoo Ltd, 1 Leopard Cat
 Chester, Mr, 1 European Salamander
 Chester, North of England Zoological Society, 4 Leopard Ground Gecko
 Coe, Mr A. V., 1 Tree Snail
 Cripps, Mrs F., 1 Hermann's Tortoise
 Curry, Mr H., 3 Orange-cheeked Waxbill
 Davies, Mrs R., 1 Blackbird
 de Vries, Mrs E., 240 Goldfish
 Dunne, Mrs C., 2 Axolotl
 Edinburgh, Royal Zoological Society of Scotland, 4 Maxwell's Duiker (deposit), 4 Gentoo Penguin
 English, Mr P. J. G., 1 Spanish Terrapin
 Fiddimore, Mr D. J., 1 Common Agama
 Finn, Mr E., 2 *Heteropneustes fossilis*
 Fisheries Laboratory, Lowestoft, 11 Coley, 9 Whiting, 2 Pout, 1 Rockling, 1 Dragonet, 9 Eel Pout, 1 Grey Mullet, 3 Plaice, 6 Sole, 4 Pogge, 1 Father Lasher, 4 Sun Starfish, 4 Sea Urchin, 2 Common Starfish, 5 Hermit Crab, 1 Prawn, 1 Swimming Crab, 3 Masked Crab, 2 Common Whelk, 18 Beadlet Anemone
 Fulmar, Master C., 1 Moorish Gecko, 2 Balearic Island Wall-lizard
 Garnham, Professor P. C. C., 1 Great Tegu
 Gasperetti, Mr J., 1 Horned Cerastes Viper
 Gladstone, Miss A., 3 Red-eared Terrapin
 Glasgow, Zoological Society of Glasgow and West of Scotland, 1 Brazilian Tree Porcupine
 Green, Mr A. E., 1 Orange-winged Amazon Parrot
 Hamlyn, Mrs P., 1 West African Turaco, 1 Virginian Cardinal, 1 Java Sparrow, 1 Greenfinch, 3 Cockatiel, 1 Vernal Hanging Parrot, 1 Plum-headed Parrakeet, 1 Indian Ring-necked Parrakeet, 1 Tri-coloured Mannikin
 Harwich, Mrs M., 1 Common Iguana
 Hawkins, Mr P. A., 1 Elephant Hawk Moth larva
 Heath, Mr G., 3 Praying Mantis
 Hebblethwaite, Master D., 1 Praying Mantis
 Hesselworth, Mr R., 3 Albino Clarias
 Hoogstraal, Dr H., 1 Lappet-faced Vulture
 Howman, Mr K., 1 Common Pheasant, 2 Vieillot's Fireback Pheasants (presented) 1 Brown Eared Pheasant, 2 White Eared Pheasant, 1 Blue Eared Pheasant (deposit)
 Hurley, Mr D., 1 Dunlin
 Imperial Chemical Industries, Ltd, 72 Channel Catfish
 Inetti, Mrs M., 1 Mediterranean Spur-thighed Tortoise
 Jackson, Mrs S., 4 Cichlid
 Jersey Zoological Park, 2 Cuban Hutia, 2 Jamaican Hutia (deposit)
 Jones, Mr I. J., 1 *Astronotus ocellatus* (Velvet Cichlid)
 Lawrey Zoological Supplies, 1 Montane Side-striped Chameleon
 Lee, Mr E., 1 Adder
 Legal & General Assurance Society (Southgate), 1 Jay
 Lynch, Mrs E. M., 1 Boa Constrictor
 Makin, Mr B., 4 *Xenopus borealis*
 Mann, Mr S., Stick Insects
 Martin, Mr T. F., 2 Red-crested Cardinal, 1 Java Sparrow, 1 Half-masked Weaver, 4 Red-beaked Weaver, 1 Cut-throat Finch
 Martins Aquaria, 1 Nurse Shark
 Mead-Holder, Mr C. J., 2 Fat Dormouse

- Mendelssohn, Professor H., 12 Abdim Stork,
10 Black-winged Stilt
- Mills, Mr P. & Mr N. Hill, 7 Common Frog,
7 Common Smooth Newt, 1 Sun Bass,
1 Tench, 2 Golden Orfe, Goldfish,
1 Blue Shubunkin, 1 Fantail Goldfish
- Millwood, Dr A., 8 Eastern Bell Toad
- Ministry of Agriculture, Fisheries and Food,
9 Dwarf Hamster
- Mysson, Mrs, 1 Red-eared Terrapin
- Newmark, Messrs J. & G., &
Mr C. Fitzsimmons, 1 Cigar Wrasse,
1 Silver Fish, 1 Yellow Damsel fish,
1 Emerald Whip Snake, 1 Eastern
Copperhead, 2 Ornate Tree Snake,
1 Black & Gold Tree Snake, 1 Soft-
shelled Turtle, 1 Phayre's Soft-shelled
Turtle, 3 Gold-lined Frog, 3 Malayan
Bull Frog, 3 Frog (*Ooeidozyga lima*),
1 Rice Paddy Frog, 1 Centipede, 1 Jungle
Scorpion, 1 Orb-web Spider, 7 Millipede,
1 Rhinoceros Beetle, 3 Praying Mantis,
1 Assasin Bug, 5 Jewel Beetle, 3 Leaf
Beetle, 1 Ground Beetle, 1 Blue Damsel
Fish, 1 Damsel Fish
- Norris-Wood, Mr J., 20 Dragonfly Larvae
- Paddington Technical College, 4 Multi-
mammate Mice
- Peltz, Mr S. P., 2 Gecko
- Radwell, Mr A. P., 1 American Catfish
- Reid, Mrs H., 1 Redwing
- Riley, Mr A. E., 2 Long-tailed Grassfinch
- Roessink, Master R., 1 Edible Snail
- Romer, Mr J. D., 2 Green Tree Python,
1 Amethystine Python, 2 Tree Frog
- Rotterdam, Royal Zoological Society,
2 Dusky Lory
- Royal Parks (Regent's Park), 1 Pink-footed
Goose
- RSPCA, 21 Marsh Frog, 5 Smooth-clawed
Toad, 1 Praying Mantis, 1 Red-eared
Terrapin, 1 Reticulated Python,
1 Chuck-walla Lizard
- Sargent, Mr R. K., 1 Barn Owl
- Schulze, Mr E. B., 5 Discus
- Searle, Dr K. C., 4 Palawan Peacock
Pheasant
- Shepherd, Mrs M., 2 Leopard Tortoise
- Shuttleworth, Mrs, Scorpions
- Silver, Dr P. 1 Brush-tailed Possum
- Southern Area British Bird & Hybrid
Club, 1 Goldfinch, 1 Bullfinch, 2 Green-
finch
- Stanbridge, Mr G., 3 Red-legged Partridge
- Sugden, Dr E. C., 1 Common Blue-tongued
Skink, 1 Sungazer, 2 Greater Plated-
Lizard, 1 Cochin China Water Dragon,
3 Cunningham's Skink, 1 Shingle-Back,
2 Long-necked Terrapin, 1 Helmeted
Terrapin, 1 Robust Plated-Lizard,
1 Warren's Armoured Lizard
- Sutton, Mr W. F., 1 Catfish
- Swanborough, Mr A. G. C., 2 Popular
Hawk Moth Caterpillar
- Thompson, Mrs A., 1 Slender-billed
Parrakeet
- Trollope, Mr J., 2 Barn Owl
- Verstraete, Mrs, 4 Chinese Hamster
- Wade, Mr E., 1 Southern Copperhead
- Ward, Master S., 1 Chameleon
- Warr, Mr, 1 Black Angel Fish, 1 Bronze
Catfish, 1 Leopard Catfish, 1 Scissortail,
1 Tiger Barb
- Washington, National Zoological Park,
2 Burrowing Owl
- Wellcome Institute of Comparative
Physiology, 2 Gunther's Tree Shrew
- Willis, Mr R. B., 1 Field Mouse
- Wilsher, Mr J., 2 Red-eared Terrapin,
14 Common Frog
- Wood, Mr & Mrs G. S., 1 Red-eared
Terrapin
- Yates, Miss E., 1 White-eared Terrapin
- Yates, M/s E., 1 White-eared Bulbul
- Young, Mr & Mrs D., 1 Dunlin,
2 Oystercatcher, 1 Lapwing, 2 Meadow
Pipit
- Zawadska, Mr W., 1 Viperine Snake
- WHIPSNADDE PARK**
- Bagnall, Mrs M., 2 Tortoises
- Marwell Zoological Park, 12 Silkie Bantams,
1 European Bison
- McKay, Mrs L. C., 1 Eastern Rosella
- Mitchell, Mr G., 1 Southern Hill Myna
- Probyn, Mrs M., 1 Blue-winged Parrotlet
- Royal Botanical Gardens, Kew, 2 New
Zealand Shelducks
- Waller, Mr S., 3 Millefeur Barbu D'Anvers
Bantams
- Wright, Mr & Mrs F. W., 1 Lesser
Sulphur-crested Cockatoo

Books presented to the library

- BAKER, A. W.
BLACKIE & SON LTD
BRITISH MUSEUM
(NATURAL HISTORY),
TRUSTEES OF
- BURTON, R.
CAMPBELL, C.
CHINNECK SCOBLE, M. B.
CLASSEY, E. W., LTD
CONSTABLE & CO, LTD
COTT, H. B.
COX, M.
CRAMMOND, J.
- FAIRLEY, J. S.
FAUNA PRESERVATION
SOCIETY
- HAMILTON, H., LTD
HOLLOWAY, S.
HUDSON'S BAY COMPANY
KEYMER, I. F.
- LANDE, E.
- LEUTSCHER, A.
LINNEAN SOCIETY OF
LONDON
- MENZIES, J. I.
MILSTEIN, T.
- MINISTRY OF AGRICULTURE,
FISHERIES AND FOOD
- NAPIER, P. H.
ORR, I. C.
OXFORD UNIVERSITY
MUSEUM, CURATOR OF
ZOOLOGICAL COLLECTIONS
- PIENKOWSKI, M. W.
SCHOMBERG, G. ST. G.
- STANDRING, G.
STEBBINGS, R. E.
TIME-LIFE BOOKS
- WARD, ROWLAND, LTD
- WEEKS, A. R. P.
WESTMINSTER CITY
LIBRARIES
- WOOD, G. L.
- WORLD HEALTH
ORGANIZATION,
DIRECTOR-GENERAL
- [A collection of 21 books and journals.]
The bird clock. By I. Lucht. 1976.
Bulletin of the British Museum (Natural History). Entomology: Vol. 32, nos. 5-8; Vol. 33, nos. 1-3; Vol. 34, nos. 1-5; Vol. 35, nos. 1-2. Geology: Vol. 26, no. 6; Vol. 27, nos. 1-4. Zoology: Vol. 28, no. 8; Vol. 29, nos. 1-6; Vol. 30, nos. 1-7.
The love of baby animals. By R. Burton. 1976.
Animals and architecture. By D. Hancocks. 1971.
Secrets of the Zoo. By L. G. Mainland. [N.d.].
A practical handbook of British beetles. 2 vols. 1976.
Jumbo. By W. P. Jolly. 1976.
Looking at animals. By H. B. Cott. 1975.
Jumbo. [1882].
Dear Zoo . . . By J. Crammond. 1976.
Zoo. By J. Crammond. 1972.
An Irish beast book: a natural history of Ireland's furred wildlife. By J. S. Fairley. 1975.
[Collection of books and journals on conservation.]
- The ark in the park. By W. Blunt. 1976.
The London zoo. By S. Holloway. 1976.
[57 volumes from the Poland Collection.]
Bird diseases: an introduction to clinical diagnosis and treatment of diseases in birds other than poultry. By L. Arnall. Rev. & augm. by I. F. Keymer. 1975.
Guide to the Gallery of Birds in the Department of Zoology, British Museum (Natural History). 2nd ed. 1976.
Keeping reptiles and amphibians. By A. Leutscher. 1976.
List of the Linnean Society of London 1805-1851.
- Handbook of common New Guinea frogs. By J. I. Menzies [1976].
Forever free: Elsa's pride. By J. Adamson. 1962.
Living free: the story of Elsa and her cubs. By J. Adamson. 1961.
Understanding animals. By G. Gronefeld. 1965.
Miscellanea zoologica . . . By P. S. Pallas. 1766.
- Catalogue of primates in the British Museum (Natural History). Pt. 1. By P. H. Napier. 1976.
[A collection of Chinese books and journals.]
The zoological collections of the Oxford University Museum. Comp. by K. C. Davies & J. Hull. 1976.
- University of East Anglia expedition to Morocco 1971, Report. Ed. by M. W. Pienkowski. 1972.
Wildlife in Britain: a guide to natural habitats, safari parks and zoos. Ed. by K. Williamson & G. Schomberg. 1976.
Seas and oceans. By G. Standring. 1975.
The lives of bats. By D. W. Yalden & P. A. Morris. 1975.
The Andes. By T. Morrison & the Editors of Time-Life Books. 1975.
New Guinea. By R. D. MacKay & the Editors of Time-Life Books. 1976.
Rowland Ward's records of big game. 16th ed. (Africa). Comp. & ed. by A. A. Best & W. G. Raw. 1975.
Nature pictures. Pts. 1-12. 1912.
La ménagerie du Muséum national. 1e-2e livraison. 1801.
- The Guinness book of animal facts and feats. 2nd ed. By G. L. Wood. 1976.
The Guinness book of records. 23rd ed. Ed. By N. McWhirter. 1976.
Development of vaccines for fertility regulation. 1976.
Ovum transport and fertility regulation. 1976.

Donations to The Zoological Record Fund

	£
American Ornithologists' Union	26.40
British Museum (Natural History)	1,450.00
Conchological Society of Great Britain and Ireland	2.00
Entomological Society of Alberta	26.31
Malacological Society of London	2.10
Michigan, University of	5.36
Quaritch, Bernard Limited	36.81
Royal Entomological Society	12.50
Society of Systematic Zoology	450.53
Society for the Study of Amphibians and Reptiles	55.38
	<hr/>
	£2,067.39
	<hr/>

Meetings during 1977

Scientific Meetings at 5.00 pm

Tuesday, 8th February
 Tuesday, 8th March
 Tuesday, 12th April
 Thursday, 12th May
 Tuesday, 14th June
 Tuesday, 11th October
 Tuesday, 8th November
 Tuesday, 13th December

Symposia

Wednesday, 27th July to Thursday, 4th August: 'The Seventh International Arachnological Congress' (organized in conjunction with the British Arachnological Society) will be held at Exeter University.

Wednesday and Thursday, 7th and 8th September: 'Artificial breeding of non-domestic animals'.

Financial Accounts

Balance Sheet at 31st December 1976

1975				
£	£		£	£
	305,187	Sundry creditors and receipts in advance (note 2)		174,957
	219,106	Bank overdraft		143,775
	91	Heer Bequest		91
	5,753	Fantham Bequest (note 3)		6,020
	16,020	Nuffield Laboratories Fund (note 4)		15,262
	22,080	Scientific Fund (note 5)		292,853
	17,933	Composition Fund		18,845
	1,200	Staff Benevolent Fund (note 6)		1,189
		Reserves		
152,305		General Reserve (note 7)	150,816	
149,882		Buildings Replacement Fund (note 8)	177,034	
100,000		Pensions Contributions Reserve	100,000	
—		Depreciation of Investments Reserve	42,000	
	402,187			469,850
	106,179	General Purposes Account		123,524
	<u>£1,095,736</u>			<u>£1,246,366</u>

For the notes which form part of these accounts see pages 50-52.

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 1976, including those of the former 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 Sheet, the accompanying Income and Expenditure Account 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
23rd February 1977

1975			
£	£		£
	106,179	Freehold Property at Cost (note 9)	123,524
		Stocks (note 10)	
1,000		Scientific publications (nominal valuation)	1,000
10,667		Guides, books, etc.	16,613
21,654		Catering Departments - provisions, etc.	25,285
	33,321		42,898
	186,086	Sundry debtors and payments in advance (note 2)	157,510
	488,627	Investments and deposits at cost (market value £655,196) (note 2)	697,146
	10,795	Cash in hand	13,096
	110,791	Rebuilding Account (note 11)	183,531
	8,621	Publications Funds deficit (note 12)	3,825
	151,316	Income and Expenditure Account deficit (note 13)	24,836
	<hr/>		<hr/>
	£1,095,736		£1,246,366

AUBREY BUXTON
Treasurer

Income and Expenditure Account for the year ended 31st December 1976

1975	INCOME			
£	£		£	£
34,273		Members' subscriptions and entrance fees	43,766	
6,504		<i>Less</i> transferred to publications	7,885	
<hr style="width: 50%; margin-left: 0;"/>	27,769		<hr style="width: 50%; margin-left: 0;"/>	35,881
		Interest and dividends		
21,295		General (after allocation to Funds)	23,644	
—		Income from Scientific Fund (note 14)	19,891	
5,451		Net income from De Arroyave Fund (note 15)	7,306	
57		Income from Davis Fund (note 16)	57	
<hr style="width: 50%; margin-left: 0;"/>	26,803		<hr style="width: 50%; margin-left: 0;"/>	50,898
		<i>Scientific</i>		
37,990		Sale of scientific publications	39,925	
18,157		Education scheme - visits	21,776	
3,933		Young Zoologists' Club	4,637	
20,164		International Zoo Yearbook	23,140	
<hr style="width: 50%; margin-left: 0;"/>	80,244		<hr style="width: 50%; margin-left: 0;"/>	89,478
		<i>Regent's Park</i>		
1,207,703		Admission of visitors to Gardens	1,493,208	
59,203		Admission of visitors to Aquarium	67,812	
28,991		Admission of visitors to Children's Zoo	31,396	
7,038		Riding receipts	8,768	
3,787		Push chairs, hire of	3,341	
102,371		Catering and other services (note 17)	134,821	
1,195		Television and film permits	477	
1,301		Animals	1,908	
8,686		Miscellaneous receipts	9,427	
<hr style="width: 50%; margin-left: 0;"/>	1,420,275		<hr style="width: 50%; margin-left: 0;"/>	1,751,158
		<i>Whipsnade</i>		
277,875		Admission of visitors to Park	385,308	
40,667		Admission of cars to Park	46,746	
1,645		Train receipts	435	
3,611		Riding receipts	5,213	
452		Push chairs, hire of	439	
11,899		Car parks - parking fees	14,310	
3,364		Animals	13,843	
1,123		Catering and other services (note 17)	19,778	
2,014		Miscellaneous receipts	1,361	
<hr style="width: 50%; margin-left: 0;"/>	342,650		<hr style="width: 50%; margin-left: 0;"/>	487,433
	92,362	Deficit for year		—

£1,990,103

£2,414,848

1975		EXPENDITURE			
£	£		£	£	£
	145,694	General administration			164,075
	—	Contribution to Buildings Replacement Fund			52,000
	14,952	Interest on overdraft			21,001
		<i>Pensions</i>			
6,738		Payments to pensioners		6,870	
63,045		Contributions to Trustees of Pension Fund		71,277	
—	69,783			—	78,147
		<i>Scientific</i>			
37,825		General scientific	37,127		
38,687		Wellcome Laboratories (note 18)	69,303		
98,305		Nuffield Laboratories (note 4)	56,554		
			—	162,984	
29,117		Library		31,238	
38,510		Scientific publications		30,492	
25,467		Education scheme		29,883	
8,160		Young Zoologists' Club		9,567	
21,186		International Zoo Yearbook		26,383	
—	297,257			—	290,547
		<i>Regent's Park</i>			
		<i>Menagerie</i>			
15,612		Rates and insurance	17,527		
494,167		Salaries	559,108		
102,991		Provisions	114,419		
127,425		Fuel, light, water, transport	154,795		
42,540		Miscellaneous	50,311		
			—	896,160	
		<i>Works</i>			
142,361		General maintenance	167,701		
6,276		Alterations	9,954		
			—	177,655	
35,579		Gardening		39,360	
45,734		Advertising		37,593	
7,453		Purchase of animals		6,534	
—	1,020,138			—	1,157,302
		<i>Whipsnade</i>			
		<i>Menagerie</i>			
12,288		Rates and insurance	9,615		
214,596		Salaries	224,107		
76,033		Provisions	82,935		
30,972		Fuel, light, water, transport	33,618		
20,545		Miscellaneous	22,412		
			—	372,687	
		<i>Works</i>			
52,058		General maintenance	51,121		
4,677		Alterations	10,759		
			—	61,880	
17,985		Farm, gardens and forestry		17,654	
8,136		Advertising		16,348	
4,989		Purchase of animals		3,727	
—	442,279			—	472,296
	—	Surplus for year (note 13)			179,480
	<u>£1,990,103</u>				<u>£2,414,848</u>

Notes on the Accounts

31st December 1976

1. Ford Research Fund (Change of Control) In accordance with an earlier agreement the Ford Foundation confirmed on 10th December 1976 that henceforth the Society would assume the control of the balance of the capital sum then in the Society's books of account arising from grants by the Foundation in April 1960 and in February 1961, the total of which was subsequently adjusted by profits and losses on investments. Detailed differences in the form and content of the Society's income and expenditure account for the year ended 31st December 1976 and in the balance sheet at 31st December 1976 compared with the accounts and balance sheet for the previous year are described at Notes 2, 5, 14 and 18.

2. Sundry Creditors and Receipts in Advance: Sundry Debtors and Payments in Advance: Investments and Deposits With the change of control of the Ford Research Fund, as described at Note 1, these items in the Society's balance sheet include the amounts relating to the Wellcome Institute of Comparative Physiology which in the previous year were shown on the separate balance sheet of the Institute.

		£	£
3. Fantham Bequest	Balance at 1st January		5,753
	Investment Income		267
			<u>6,020</u>
	Balance at 31st December		<u>£6,020</u>

4. (i) Nuffield Laboratories Fund (formerly Nuffield Institute Fund)	Balance at 1st January		16,020
	Donations and Grants		232,192
	Society's Contribution		56,554
			<u>304,766</u>
	Less: Salaries (including pension contributions)	190,489	
	Scientific Expenses	69,845	
	Other Expenses	29,170	
			<u>289,504</u>
	Balance at 31st December		<u>£15,262</u>

(ii) Expenditure—Scientific: Nuffield Laboratories In the Society's income and expenditure account for the previous year this item was designated "Expenditure—Scientific: Nuffield Institute".

5. Scientific Fund The balance shown as "Special Scientific Fund" at 31st December 1975 has been re-designated "Scientific Fund". With the change of control of the Ford Research Fund, described at Note 1, the balances of the Capital Account (Ford Research Fund) and Equipment Fund, being items shown at 31st December 1975 in the balance sheet of the Wellcome Institute of Comparative Physiology, are added to the total of the Scientific Fund in the Society's balance sheet. The movements within the three funds thus consolidated for the year ended 31st December 1976 are as follows:

	Special Scientific Fund £	Ford Research Fund £	Equipment Fund £	Total £
Balance at 1st January	22,080	255,645	581	278,306
Surplus on sale of Investments	—	13,554	—	13,554
Allocation of interest	—	—	1,400	1,400
	<u>22,080</u>	<u>269,199</u>	<u>1,981</u>	<u>293,260</u>
Expenditure	—	—	407	407
	<u>22,080</u>	<u>269,199</u>	<u>1,574</u>	<u>£292,853</u>

6. Staff Benevolent Fund	Balance at 1st January	£	£
	-G. J. Ashby Memorial Fund	875	
		325	
	Interest	—	1,200
			83
			<u>1,283</u>
	Less: Grants and Loans (net)		94
	Balance at 31st December	825	
	-G. J. Ashby Memorial Fund	364	
		—	<u>£1,189</u>
<hr/>			
7. General Reserve Fund	Balance at 1st January		152,305
	Fees of Deceased Compounders (from Composition Fund)	680	
	Profit on Sale of Investments	4,176	
	Transfer from Income and Expenditure Account	11,000	
		<u>15,856</u>	
			168,161
	Less: Transfer to General Purposes Account		17,345
			<u>£150,816</u>
<hr/>			
8. Buildings Replacement Fund	Balance at 1st January		149,882
	Investment Income	7,494	
	Donations	562	
	Transfer from Income and Expenditure Account	52,000	
		<u>60,056</u>	
			209,938
	Less: Expenditure		32,904
	Balance at 31st December		<u>£177,034</u>
<hr/>			
9. Freehold Property at Cost	Balance at 1st January		106,179
	Less: Premises sold		10,244
			<u>95,935</u>
	Add: Premises purchased		27,589
	Balance at 31st December		<u>£123,524</u>
<hr/>			
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	
<hr/>			
11. Rebuilding Account	Balance at 1st January		110,791 Dr
	New Works		255,119
			<u>365,910 Dr</u>
	Less: Donations and Grants		182,379
	Balance at 31st December		<u>£183,531 Dr</u>

12. Publications Funds	Balances at 1st January:	£	£
	Zoological Record Fund	11,181	Dr
	Neave Lloyd Fund	2,560	
		<u> </u>	8,621 Dr
	Sales and Donations		271,816
			<u> </u>
			263,195
	Less: Publication and Distribution Costs		267,020
			<u> </u>
	Balance at 31st December		£3,825 Dr
			<u> </u>
	No allowance has been made for future costs estimated at £60,000 chargeable to advance sales received		

13. Income and Expenditure Account	Surplus for the year		179,480
	Less Appropriations:		
	General Reserve	11,000	
	Depreciation of Investments Reserve	42,000	
		<u> </u>	53,000
			<u> </u>
			126,480
	Deficit at 1st January		151,316 Dr
			<u> </u>
	Balance at 31st December		£24,836 Dr
			<u> </u>

14. Income from Scientific Fund This figure comprises income in 1976 on investments of the component funds described in Note 5.

15. De Arroyave Fund The Capital of the De Arroyave Fund is held by the Official Custodian for Charities. The income from the Fund was £7,313, of which £7 was spent on the upkeep of the Lopes grave and mausoleum, in accordance with the terms of the Trust.

16. Davis Fund The Capital of the Davis Fund is held in trust by the Society, but is not included in the Balance Sheet.

17. Catering and other Services The figures of net income include Concession Fees and Covenanted Profits from Zoo Restaurants Limited and its subsidiary company, Zoo Enterprises Limited, as follows:

	Zoo Restaurants Ltd	Zoo Enterprises Ltd	
	£	£	
Regent's Park	30,975	69,028	100,003
Whipsnade Park	2,929	15,329	18,258
	<u> </u>	<u> </u>	<u> </u>
	33,904	84,357	£118,261
	<u> </u>	<u> </u>	<u> </u>

18. Expenditure—Scientific: Wellcome Laboratories The following expenditure accounts are included which, in respect of the year ended 31st December 1975, were shown in the Income and Expenditure Account of the Wellcome Institute of Comparative Physiology:

- Salaries
- Laboratory and other scientific expenses
- Administrative charges
- Heating, lighting and miscellaneous