





# Annual Report 1969

The Zoological Society  
of London



## THE ZOOLOGICAL SOCIETY OF LONDON

The Society was founded in 1826 by Sir Stamford Raffles, Sir Humphrey Davy (President of the Royal Society) and other eminent naturalists,

'for the advancement of Zoology and Animal Physiology and the introduction of new and curious subjects of the Animal Kingdom',  
and was incorporated by Royal Charter in 1829. A new Charter was granted to the Society in January 1963.

The Society's Gardens in Regent's Park, which were first opened to the public, without restriction, in 1846, now cover an area of 36 acres. Of the original features and buildings designed by Decimus Burton, the old Camel House with its clock tower, the Ravens' Aviary and the Giraffe House are still in existence. In 1927 the Society acquired 500 acres of farm and downland at Whipsnade and has developed them into a Zoological Park.

The existence of the Zoological Society as an Institution under a Royal Charter depends on the fulfilment of the object for which it was founded. It undertakes and encourages scientific research in zoology by members of its curatorial staff, by visiting scientists, and through its Institutes of Comparative Physiology and Comparative Medicine, both of which make a vital contribution to the management of the Collection. It also spreads zoological knowledge through its educational activities. Scientific meetings, commencing at 5 p.m., are held in the Meeting Room 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 arranged on other dates, which are notified as occasion arises. The Society owns one of the finest zoological libraries in the world, containing approximately 120,000 volumes, including many complete sets of scientific journals.

The Society publishes:

The *Journal of Zoology*, being the *Proceedings of the Society* – the papers cover all fields of zoology and are fully illustrated with plates and text figures. Three volumes (12 parts) are published annually.

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 20 parts dealing with the different animal groups.

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

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



# Report of the Council 1969

The Council has pleasure in presenting its 141st Annual Report to the Annual General Meeting of the Society to be held on Wednesday 20th May 1970 at 4 pm in the Society's Meeting Room at Regent's Park

The Zoological Society of London



THE ZOOLOGICAL SOCIETY OF LONDON

PATRON: HER MAJESTY THE QUEEN

COUNCIL 1969-1970

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

*Treasurer*: Sir Terence Morrison-Scott, DSC, DSC

*Secretary*: Professor Sir Solly Zuckerman, OM, KCB, DSC, FRS

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

The Earl of Bessborough, *Vice-President*

Aubrey Buxton, MC, *Vice-President*

Charles Clore

Sir Dudley Forwood, Bt

Francis C. Fraser, CBE, DSC, FRS

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

C. J. Harris

The Viscount Head, PC, GCMG, CBE, MC

Sir Edward Hulton

The Marquess of Lansdowne, PC, DL

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

Professor A. T. Phillipson, MA, PhD, FRSE, DVSC, MRCVS

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

Professor G. P. Wells, SCD, FRS

G. E. W. Wolstenholme, OBE, FRCP, FIBiol, *Vice-President*

Woodrow Wyatt, MP

Frank Yates, CBE, SCD, FRS



THE ZOOLOGICAL SOCIETY OF LONDON

HONORARY FELLOWS

*Date of election*

- 1952 Professor J. Berlioz  
Muséum National d'Histoire Naturelle,  
Jardin des Plantes, 57 rue Cuvier, Paris 5<sup>e</sup>, France
- 1937 HH Maharajah Raol Shri Krishnakumarsinhji Bhavsinhji of Bhavnagar  
Bhavnagar, Kathiawar, India
- 1951 Professor Dr H. Boschma  
Rijksmuseum van Natuurlijke, Leiden, Holland
- 1955 Dr G. W. Corner  
American Philosophical Society, 104 South Fifth Street,  
Philadelphia 6, Pennsylvania, USA
- 1957 Professor Robert Courrier  
L'Institut de France, (Academie des Sciences), 23 Quai de Conti, Paris 6<sup>e</sup>,  
France
- 1945 Monsieur Jean Delacour  
Parc Zoologique de Clères, Clères, Rouen, S-M., France
- 1929 Dr W. K. Gregory  
American Museum of Natural History,  
Central Park West at 79th Street, New York, USA
- 1963 Sir Edward Hallstrom  
426 Willoughby Road, Willoughby, NSW, Australia
- 1952 Professor Sven Otto Hörstadius  
Zoologiska Institutionen, Uppsala, Sweden
- 1948 Professor A. R. Jorge  
Museu Bocage, Faculdade de Ciências, Lisbon, Portugal
- 1939 The Rt Hon. Sir Robert Gordon Menzies  
2 Haverbrack Avenue, Malvern, Melbourne, 3144, Victoria, Australia
- 1952 Dr R. C. Murphy  
American Museum of Natural History,  
Central Park West at 79th Street, New York, USA
- 1953 Professor Dr A. H. Schultz  
Anthropologisches Institut der Universität Zurich,  
Sempersteig, Zurich 1, Switzerland
- 1947 Professor G. G. Simpson  
Department of Geology, University of Arizona, Tucson, Arizona 85721, USA
- 1937 Dr E. A. Stensiö  
Naturhistoriska Riksmuseum, Stockholm 50, Sweden



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## FINANCIAL ACCOUNTS, WITH AUDITORS' REPORT

In the pocket on back cover



# General Report

## COUNCIL

At the Annual General Meeting held on 29th April the following officers and members of the Council retired:

Sir Terence Morrison-Scott, *Treasurer*  
Professor Sir Solly Zuckerman, *Secretary*  
E. M. Behrens  
The Earl of Cranbrook  
The Duke of Devonshire  
The Marquess of Lansdowne  
The Hon. Ivor Montagu  
Dr W. Lane-Petter

The Treasurer and Secretary were re-elected. The Marquess of Lansdowne, who had been appointed during the year to fill a casual vacancy, retired at the date of the Annual General Meeting and was elected for a further term of office. The remaining vacancies were filled by the election of Dr Francis C. Fraser and Professor O. E. Lowenstein (Scientific Fellows), Sir Dudley Forwood, C. J. Harris and Sir Edward Hulton (Ordinary Fellows).

In November Professor Lowenstein resigned on grounds of ill-health and Professor A. T. Phillipson was appointed in his place.

## ROLL OF MEMBERS

At the end of the year there were 3,254 Fellows and 2,317 Associates.

## OBITUARY

The Council records with deep regret the deaths of Captain Cyril Diver, who had been a member of Council for many years and also a Vice-President; Air Chief Marshal Sir James Robb, a former member of Council; Professor R. T. Leiper, a Scientific Fellow for 30 years and previously a member of the Prosectorial Committee; Professor D. V. Davies, a Scientific Fellow of the Society for 22 years and a member of the Animal Welfare and Husbandry Committee; Major Gavin Maxwell, a Scientific Fellow for 29 years. Council also learned with much regret the deaths of Dr Remington Kellogg of



the United States National Museum, an Honorary Fellow of the Society, of Mr Lee S. Crandall of the New York Zoological Society, and of Dr Fairfield Osborn, President of the New York Zoological Society and an Honorary Fellow of this Society since 1958. Dr Fairfield Osborn, whose father was also an Honorary Fellow of the Society and President of the Natural History Museum of New York, had for many years been greatly concerned about the effect on animal life of the increasing destruction of natural habitats and had been very influential in developing the conservation movement on a worldwide basis. A naturalist and zoologist of international reputation, his influence in the zoological world and in the world of zoos was far-reaching. He will be sadly missed.

While this report was being prepared Dr Geoffrey M. Vevers, FRCS, Honorary Consultant and Superintendent of the Society from 1923 until his retirement in 1948, died at his home in Whipsnade Park. Council records his death with great sorrow. During his long period of service Dr Vevers was a powerful influence in improving the management of the Gardens, Regent's Park, and he also played a very important part in the foundation of Whipsnade Park.

#### AWARDS FOR CONTRIBUTIONS TO ZOOLOGY

At the Annual General Meeting, the President, HRH The Duke of Edinburgh, presented the following awards:

**The Silver Medal** to *Mr James Fisher* in recognition of his contribution to the understanding of zoology and to public appreciation of the importance of conservation.

**The Stamford Raffles Award** (awarded to an amateur zoologist for distinguished contributions to zoology) to *Mr Guy Mountfort* in recognition of his contribution to the study of natural history. The award was a sculpture, *Wild Boar*, by Miss Elisabeth Frink.

**The Scientific Medal** (awarded to persons under 40 years of age for distinguished work in zoology) to *Dr G. A. Horridge*, of the Gatty Marine Laboratory, St Andrews University, for his work on the anatomy and physiology of the nervous systems of a wide range of invertebrates, including coelenterates, annelids, lamellibranchs and arthropods; and to *Dr M. J. Wells*, of Cambridge University, for his work on brain and behaviour in cephalopods.

**The Thomas Henry Huxley Award** (for original work submitted as a doctoral thesis) to *Dr R. D. Martin*, of the University of Oxford (now at Muséum National D'Histoire Naturelle, Ecologie Général, Brunoy, France) for his thesis 'Behaviour and taxonomy of Tree Shrews (Tupaïidae)'. The award was a sculpture in bronze, *Kangaroo*, by Mr David Wynne. The theses of *Dr P. Grubb*, University College, London (now at the Department of Zoology, University of Ghana), 'The behaviour and population dynamics of feral Soay sheep on St Kilda' and of *Dr B. Weatherhead*, University of Birmingham (now at King's College London Research Unit), 'The maturation and function of the hypothalamo-neurohypophysial system', were highly commended.



Potto born March 1969,  
London Zoo  
*The Zoological Society  
of London*

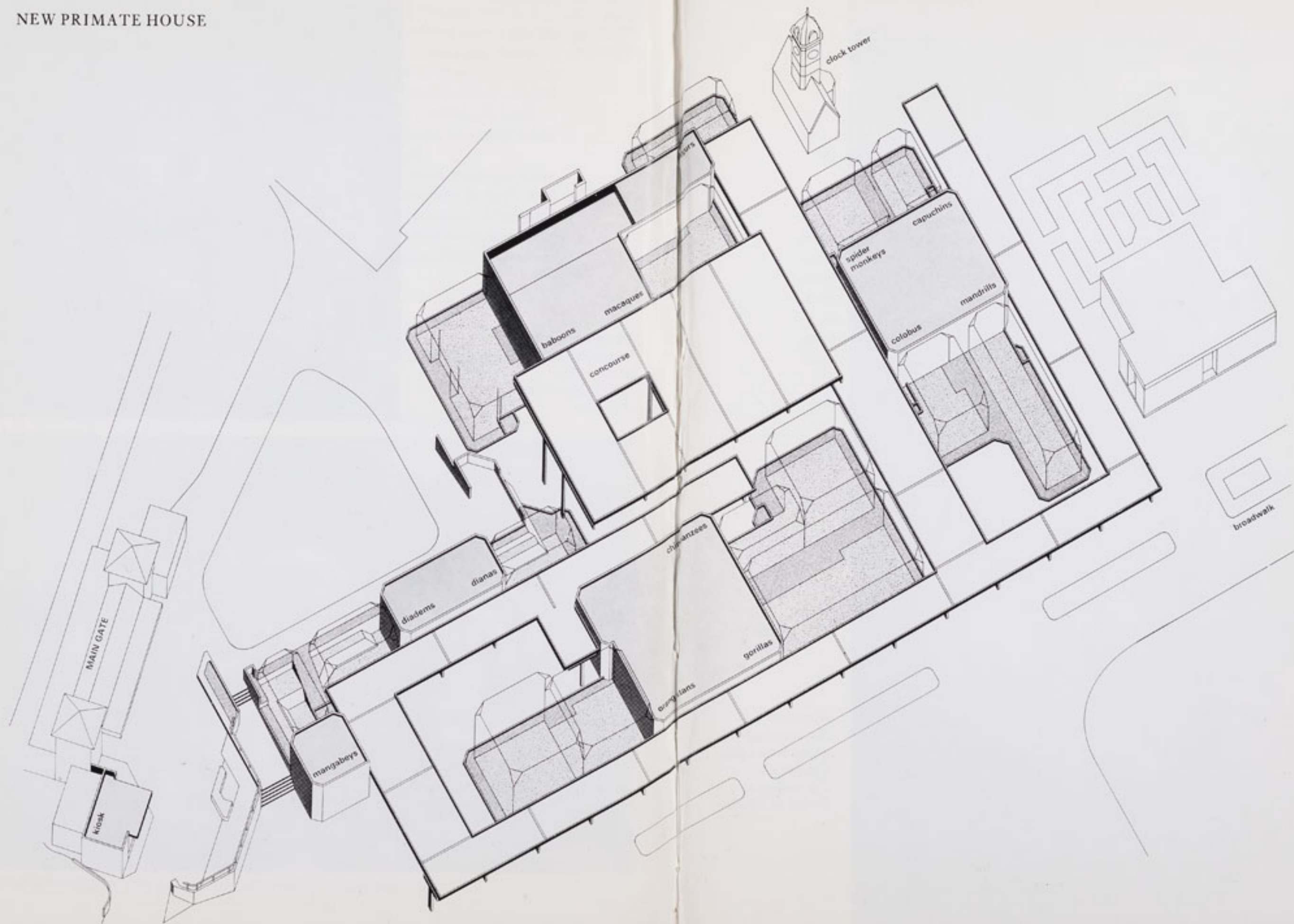


Chimpanzee born  
September 1969,  
London Zoo  
*The Zoological Society  
of London*

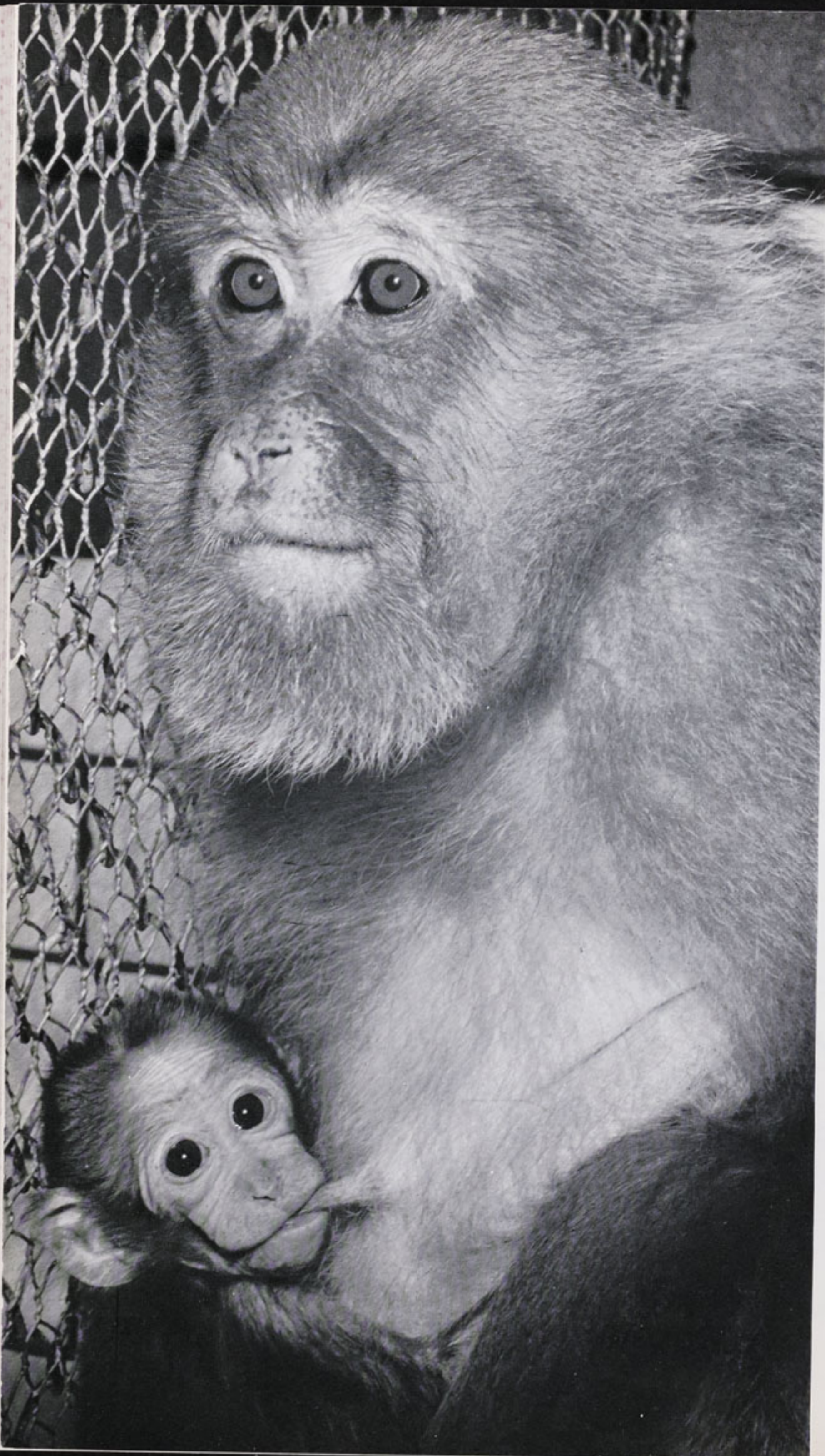




NEW PRIMATE HOUSE







Assamese  
Macaque and  
young born 1969,  
London Zoo  
*The Zoological  
Society of London*



**The Prince Philip Prize** (for an account of practical work involving the observation of living animals, submitted by a pupil of zoology taking the GCE 'A' Level, or equivalent examination, in any school in the United Kingdom) to *I. G. Spencer* of King James I School, Bishop Auckland, for his essay 'A study of the morphology and case-building habits of trichopterous larvae'.

By permission of the President a new medal was struck for the Prince Philip Prize. The obverse bears an effigy of His Royal Highness and the reverse an original design by Landseer.

Mr Spencer was the first to receive the medal.

## SCIENTIFIC REPORT

Since the establishment of the Society's research institutes, the variety of scientific work has greatly increased and much of it is highly specialized. The reports tend to be too technical to interest the general reader, and a summary too incomplete to be of value to scientists. The Council has, therefore, decided to include only a brief review of research in this Report but to publish, biennially, a detailed Scientific Report, covering the work of the Wellcome Institute of Comparative Physiology, the Nuffield Institute of Comparative Medicine, Veterinary and Pathology Departments and the research of the Curators.

The Scientific Report for 1968-69 can be obtained (price £1, including postage and packing) from the Publications (Sales) Department at the Society's Offices.



# Financial Review

The beginning of the '70's provides a convenient point to review what has been achieved in the past ten years and to attempt to assess the task that lies ahead. The period 1960-1969 will undoubtedly stand out in the Society's history as one of continuous achievement, resulting in a vital regeneration of the work of the Society in all its aspects. Not least has been the progress made in rebuilding the London Zoo. With the completion of well over half of the development plan adopted in 1958, three-quarters of the mammals in the Collection have now been rehoused in eight new major pavilions and houses, together with their surrounding paddocks, terraces and new public walks. The Snowdon Aviary provides excellent new quarters for many of the birds in the Collection, as well as a fascinating display in an area which, for many years, had been a steeply sloping, overgrown bank, totally inaccessible to the public. New hospital quarters and pathology laboratories have been built. All the services - drainage, sewage, heating - most of which dated from the turn of the century and were woefully inadequate, have been replaced. New provision stores and garages; a works department - covering all the main crafts; staff accommodation, catering establishments, as well as services for the public such as lavatories, roadways and a bridge across the Canal have all been built or extensively modernized.

During 1969 a further major step forward became possible when Mr Michael Sobell promised the Society £250,000 to meet the cost of a new Primate House.

This magnificent gift ensures that we shall be able to start the building this spring, thus marking another milestone towards our aim of providing in London as magnificent a zoological garden as can be found in any capital city.

In the scientific field the decade has been marked by the building and establishment of two new research departments - the Wellcome Institute of Comparative Physiology,



and the Nuffield Institute of Comparative Medicine. The object of both Institutes, working in collaboration with our veterinary and diagnostic services, is to provide the highest possible standard of husbandry in the Collection, and to ensure that our unique collection of wild animals is properly and systematically studied.

In the field of education the services offered to schools, universities and many specialist departments have expanded rapidly; the attendances at the school lecture/demonstrations now average over 50,000 a year.

The problem of finding the necessary capital resources for these developments has, throughout the decade, been the Council's main pre-occupation. When we embarked on the rebuilding programme the Society's reserve funds stood at about £600,000. This sum had been accumulated during the war and post-war years when building operations were restricted and when, because of the paucity of other public attractions, attendances were running at a high level, culminating in the peak attendance of over 3,000,000 in 1950, following the birth of the Polar Bear 'Brumas'. It represented the total amount available to meet all commitments, including staff pensions, and buildings as well as working capital to meet operational costs during the winter months when income from admissions is at its lowest. It left nothing over to support a comprehensive programme of rebuilding the Gardens in Regent's Park, which were in a near derelict state, or for resurrecting the Society's educational and scientific activities, which were at a low ebb. The Council had no alternative but to find the necessary capital funds from other sources.

£3½ million have been spent on rebuilding and on the development of the Society's activities. Of this amount £1,400,000 (excluding the recent gift of £250,000 from Mr Michael Sobell) has been found by appeal to private benefactors, Foundations and Trusts. The LCC contributed £100,000 and Her Majesty's Government £250,000. Over £900,000 has been generated from the Society's own resources, such as war damage claims, the sale of a property in Prince Albert Road, and small annual surpluses. We also received a long-term loan of £250,000 from Her Majesty's Government. The remainder has been borrowed from commercial banks.

At the same time the reserve funds of the Society, which at the start had to be committed to the building programme, have been re-organized and re-invested. In addition to maintaining a General Reserve Fund, a pension fund has been set up under Trust Deed. It now has assets of nearly half a million pounds. A Buildings Replacement Fund has been established which, when the rebuilding programme is completed, will be available for the necessary replacement of buildings, and so will relieve our successors of some of the problems which we have had to face. Today, this fund stands at £228,000.

Whilst much that we set out to achieve has been completed, formidable tasks still lie ahead. When we have completed the Primate House in Regent's Park, we shall still need to build new enclosures and houses for the big cats (to replace the Lion House built in 1875); new aviaries for birds of prey, parrots, tropical and other birds; to refurbish the reptile house, the aquarium, and the children's zoo; to complete the modernization of the catering stores and other buildings, and to centralize in a new piazza all the remaining public services. Finally to complete the plan we shall merge the present forbidding southern boundary of the Zoo into the softer landscape of Regent's Park. In addition we must give urgent thought to the redevelopment of Whipsnade, where expenditure has been limited to essential building.



Our overriding problem continues to be that of finding the necessary capital. This problem is not new. It has bedevilled the Society's progress since it was founded in 1826. Contrary to popular belief, the London Zoo has never been able to call on assured capital funds, and buildings have always had to be retained long after they have been outmoded, while several overall building plans which were formulated at various times during the last hundred years have remained pipe dreams. For some 140 years the Society has carried, on an entirely private basis, the responsibility for the national zoological collection. We know of no other country where this is so. National zoological gardens have invariably been built and also entirely maintained, or at least supported, either by the State or by the civic authority in whose area they are situated.

The Zoological Society, like the Linnean Society and the Geological Society, came into being in response to the widespread interest in science which was triggered off by the industrial revolution, and which led in the latter half of the 18th and first half of the 19th century to a demand for the formation of specialist scientific societies to supplement the work of the Royal Society. We were allowed to occupy Crown Land in Regent's Park in order to build up a collection of animals for zoological study; to provide conditions in which these animals would breed and, if possible, be acclimatized. But unlike other national institutions (for instance, the British Museum and Kew Gardens, which from their foundation have been supported by public funds, or Covent Garden, Drury Lane and others in the field of the Arts which in response to particular needs have obtained support from the public purse), the Society has had to pay its own way.

The Collection in Regent's Park was originally available only to Fellows of the Society who were zoologists and 'patrons' interested in furthering the aims of the Society. It very soon became clear that the provision of adequate housing and the upkeep of a rapidly growing collection of living animals was well beyond the resources of a group of private individuals. In 1846, in order to increase its income, the Council decided to throw the Gardens open to the public. Financial considerations, however, were not the only reason which persuaded the Council to take this step. It was an age when public libraries, museums and other Collections were being increasingly recognized as important media of public education. The British Museum, which hitherto had been available to the public on a controlled basis had, in the interests of general education, been made freely open to all. The Society's Collection was considered to have a similar role to that of the British Museum and, as guardian of the national zoological collection, the Society accepted that it had a moral responsibility to make its Collection available as widely as possible to all sections of the public. Queen Victoria expressed her approval of allowing public admission as a measure which would help to diffuse 'intellectual recreation among the great mass of the people'.

It is against this background that the admission charges, fixed in 1846 at the then relatively high level of 1/-, but 6d on Mondays, remained unchanged for nearly 100 years, being increased only as late as 1942 to 1/6d. With the falling value of money and rising operational costs, it obviously became increasingly difficult over the years to accumulate sufficient funds to keep abreast with necessary capital development.

The Society faces the same problem today as it has always done. It can meet operational costs from the income which it can earn in admission charges and subscriptions, but unless prices are to be raised to a far higher level than the Council or the public



would countenance, it cannot meet the inevitably expensive capital cost of new building. Nor should it continue to take the risk of always relying on private benefactors or of borrowing in the commercial market to complete its development programme.

Under the terms of the Crown Estate Act 1961, the Ministry of Public Building and Works assumed responsibility for the land the Society occupies in Regent's Park and thus, in effect, became our landlord responsible for the buildings the Society ostensibly owns. The Council has sought the Department's help and guidance in finding a solution to the long-term development problem. These negotiations led to an announcement in Parliament in June 1969, that the Government had arranged for the Bank of England to lend to the Society, until 1st July 1970, up to £375,000, which was guaranteed by the Ministry of Public Building and Works. The Minister pointed out that this would allow time for the Society to reinforce its own efforts to increase its resources, and Mr Sobell's generous gift since the announcement has enabled us to proceed with the capital programme. The loan would also allow time for an examination by management consultants, with a view to putting the Society's finances on a satisfactory footing over a longer period. Associated Industrial Consultants Ltd were appointed in August to undertake this task and their report, which was submitted in January is, at the time of going to press, being considered both by the Government departments concerned and by the Council.

#### CAPITAL EXPENDITURE, 1969

As part of the agreement with the Ministry, no new capital works, other than those for which the Society could obtain private donations, were undertaken.

At Regent's Park an anonymous donation enabled us to build a new otter pool which was opened in November. At Whipsnade certain buildings which had been started were completed, in particular the modernization of the Cloisters Cafeteria, the building of a new Chimpanzee House, and a major overhaul of the sewage system.

#### INCOME AND EXPENDITURE, 1969

At the suggestion of the Ministry of Public Building and Works, the Council agreed to make no contribution to the Buildings Replacement Fund this year, while the Treasury agreed to defer the payment of £17,500 in respect of the Government loan. Other expenditure has been severely restricted, and the Council is grateful to the staff for the way they have co-operated in this exercise. In spite of rising costs – particularly increases in wages and salaries, provisions, electricity, fuel, postage and all other services – operating costs, excluding the servicing of short-term loans, were contained at a figure marginally less than last year. On the other hand, interest on short-term loans rose to £67,000, due partly to the general increase in interest rates. In addition, revenue was £53,000 less than in 1968. As a result we have ended up with a deficit of £54,000. A deficit was anticipated, but the figure is higher than Council had hoped. The main trouble has been that attendances at Regent's Park, in common with many similar exhibitions, have been running at a lower level than in 1968. Fortunately attendances at Whipsnade increased by some 6½ per cent.

In spite of the steep increase in the general level of all costs admission charges have remained unchanged for the last 3½ years. In the normal course of events Council would



have raised admission charges to a level at least sufficient to avoid a deficit. However, in consultation with the Ministry of Public Building and Works and the other Government departments concerned, it was decided that, pending the review following the report by Associated Industrial Consultants Ltd, admission charges would not be altered.

#### DONATIONS

The Council acknowledges donations of £500 from Sir Jules Thorn; £200 from the Fishmongers' Company; £250 from The Lord Faringdon Trust; £100 from Mr J. M. G. Hewett; \$750 from Mrs Nichols, wife of the Chairman of the Conservation Committee of the New York Zoological Society; and legacies of £1,000 from Mrs Florence M. Cooper and £50, together with a governess cart for use at Whippsnade, from Miss Alice Fisher.



# Conservation

In 1970 the Society is planning a number of special activities to mark European Conservation Year. In the field of research an International Symposium on 'The Conservation and Productivity of Natural Waters' is being organized.

A special exhibition will be mounted at Whipsnade on the theme of the breeding of rare species in captivity, and a series of exhibitions, planned jointly by the World Wildlife Fund and the Society, will be shown in some of the animal houses at Regent's Park in order to demonstrate the role of zoos in conservation. The Young Zoologists' Club will be particularly concerned to develop during the year an interest in conservation amongst its members.

Such special activities have the primary purpose of explaining to our visitors that the conservation of wildlife is a major concern of the Society and a main consideration in the management of the Collections. Our symposium and exhibitions will, we hope, also help to capture the public imagination in further support of the conservation movement. But such activities, organized for a particular occasion, cannot adequately reflect the full scope of the Society's activities in the conservation field or the continuing contribution which it makes to fundamental studies of the problems of animal management, and thus to animal conservation.

The breeding of rare species, and the scientific study of the physiology of reproduction have always been sound reasons for the maintenance of a captive collection and the Society's record in this field is second to none. Species such as the Przewalski's Horse, Père David's Deer and the European Bison have been saved from total extinction by conservation in zoos, and Regent's Park and Whipsnade have contributed to this achievement with a total of 17 Przewalski's Horses, 62 Père David's Deer and 10 European Bison bred in the Collections. Apart from the herd of Père David's Deer at Woburn, from which all the other groups of this species are descended, Whipsnade has the most numerous herd in the world, while its herds of Przewalski's Horse and European Bison rank amongst the largest in captivity.



But the breeding of rare animals is only the spectacular way that the aims of conservation can be advanced. Many species whose status is considered 'safe' may not remain so. The breeding of other exotic species not only prevents the depletion of wild stocks but also builds up a bigger reserve for the future when the natural stocks may have declined to a dangerous state. Thus all breeding is of value in the struggle to preserve the world's wild fauna, and Regent's Park and Whipsnade have excellent records in this respect. Of the total collection of 849 mammals living in Regent's Park at the end of 1969, representing 257 species, 46 per cent were born in the Collections. Of the 908 mammals at Whipsnade, representing 86 species, 79 per cent were bred in the Collection. These very high figures have been achieved because the Society has always based its day-to-day management of the Collection on new knowledge gained through scientific study and research. Our knowledge of the physiology and pathology of wild animals, compared with what we know about domesticated species, is, however, still inadequate. Urgent and systematic studies into the possibility of artificial insemination of wild stock are essential. This is among the problems being studied by the Society's research staff at the Wellcome Institute of Comparative Medicine.

The problem of disease, its cause and incidence, is also of continuing importance. The Society's Institute of Comparative Medicine, and the studies undertaken by the Hospital and Pathology Departments have already had a significant effect on the health, breeding and nutritional standards of the animals in the Collections. Such studies are basic to proper animal care.

Properly managed zoos help the cause of wildlife conservation not only by sound breeding programmes and by good and scientific animal husbandry, but also by stimulating an interest in animal life, and so helping to generate a climate of public opinion which is ready to support the concept of conservation. The objectives our Society has set itself over the years are the minimum which should be demanded of any zoo.

If zoos are to contribute significantly to the problems of conserving wildlife, systematic studies of nutrition, of veterinary medicine, and of the reproductive and physiological processes of all species, whether or not they are yet on the endangered list, are absolutely vital. Such studies may not capture the headlines, and they are costly. But they are also central to positive conservation policies. The day is long past when animals should be held in captivity solely because they provide a source of amused curiosity to the visiting public or of profit to the owners. The problem is urgent because of the very rapid and uncontrolled proliferation of zoos which is now occurring. Whilst most zoo managements pay lip service to the objective of breeding wild animals in captivity, the standards of veterinary care, animal husbandry and nutrition they provide all too often leave a great deal to be desired. Lack of knowledge is frequently the cause of neglect, and in an attempt to improve standards in all zoos the Society launched the *International Zoo Yearbook* some ten years ago. This appears annually and includes data on endangered species in order to provide the basic material which makes a coordinated management programme of breeding possible. By encouraging an interchange of information through the *Yearbook*, and by making available up-to-date information on aspects of the care of wild animals in captivity, the Society has made a further contribution to the broader aspects of conservation.



# The London Zoo

Visitors during the year 1,875,290  
Visitors to the Children's Zoo 440,154  
Visitors to the Aquarium 380,669

## OVERSEAS VISITORS

During July, August and September the British Travel Association conducted a survey to assess the proportion of our visitors who came from overseas. The results showed the importance of the Zoo as a tourist feature, with 23 per cent of the total number of visitors coming from overseas.

This figure confirmed the results of a previous survey (London Visitors' Survey 1968) which had shown that 22 per cent of all overseas visitors to London, excluding those on a business visit, could be expected to visit the Zoo.

## GENERAL DEVELOPMENT

**Primate House** It was hoped when Mr Sobell's gift was received that work on the new Primate House could be started immediately as the plans had already been approved. But, at tender stage, the design failed to meet the target figure of cost. The Council was left with the alternatives of substantially modifying the plans, a course of action likely to result in an unsatisfactory building quite different from the original concept, or calling for an entirely new design. In deciding on the second alternative, Council was also influenced by new evidence, accumulated over the last four to five years, of the needs of primates in captivity and, in particular, about the unsuitability of water moat barriers which had resulted in a series of accidents to apes in other zoos.

Council therefore commissioned the Society's present Architect, Mr J. Toovey, to prepare a new design to be based on the latest available knowledge and to meet a cost figure of £250,000. Work on this design, an illustration of which appears between pages 8 and 9, has now been completed and the building will soon be started.

The new House will consist of five self-contained units of accommodation for the animals, brought together by a central public concourse and covered viewing walks. The



design gives flexibility to allow for modifications to meet the changing needs of the future, simplicity for economy and ease of operation, and space to keep groups of primates under the most favourable conditions possible in the restricted area of Regent's Park.

**Other developments** As an addition to the main development plan, a small but impressive enclosure for otters was built, with an underwater viewing tank, which allows the full range of behaviour of these fascinating animals to be shown.

Within the limited resources available, essential repairs and modifications to old buildings and installations, always a constant feature of the year's work, were undertaken. Old buildings must be kept serviceable until the time they can be replaced, animal quarters need to be modified to meet unforeseen circumstances, such as an unexpected birth or an unheralded arrival, and new knowledge in the care of animals calls for new facilities for their management.

During 1969 the Tropical House for Humming-birds was due for long-awaited repairs to the roof and walls, and the opportunity was taken to improve the background. The result was a transformation and a new lease of life for this exhibit which did credit to the works staff and the gardeners who put in a fine new display of plants. Similar cooperation between the works and gardening departments achieved an equally attractive renovation of the crumbling walls and backdrops of the crocodile dens in the Reptile House.

In the Charles Clore Pavilion, which by its interest and consistently good breeding record continues to prove its place as one of the leading animal buildings in the world, one of the three external enclosures was adapted for the popular Red Panda exhibit by the addition of a mesh roof, a necessary measure for this climbing species. In the nocturnal basement, illuminated scientific labels using electroluminescent panels were generously provided by Sir Jules Thorn, installed.

There were, as always, a variety of important but unspectacular works carried out during the year which were vital to the general operational efficiency. For instance, the fitting of flexible joints in some of the mesh panels of the Snowdon Aviary, a technically difficult job; the installation of a new glass front to the large Conger Eel tank in the Aquarium; the removal of the unsatisfactory pay-turnstiles at the North Gate and its modification for admission by ticket; the re-construction of the old Beaver Pond for the Coypus which had to be moved when the Otter Pool was built; and the demolition of the old Works Yard beside the Southern Aviary. Finally, an example of the multifarious jobs and skills called for from our works staff was the building of a large restraint box for Giraffes, an important and specialized piece of equipment necessary for the handling and care of this valuable species.

## THE COLLECTION

**Mammal section** The saga of 'Chi-Chi' and 'An-An', the Giant Pandas, must once again take precedence over the other events of the year. When the Russian authorities agreed that the male, 'An-An', could continue to stay in London for the first few months of the year, there were renewed hopes that mating might yet take place following 'Chi-Chi's' expected spring oestrus. However, despite an attempt to induce ovulation by hormone treatment, 'Chi-Chi' did not come into oestrus and no mating took place.



Finally in May 'An-An' was returned to Moscow. Despite the failure of these two animals to breed this episode has been important in the zoo world. To aim for a zoological achievement of such a unique character involved a calculated risk in the moving between Moscow and London Zoos of two almost priceless specimens of one of the rarest and most fascinating of mammal species. The risks were high, but so were the stakes, and although success was not achieved, at least it may be said in the future, if the Giant Panda should unfortunately follow the Quagga into extinction, that national pride and zoo rivalries did not stand in the way of scientific endeavour.

A cardinal principle in the Society's policy is the need to establish, whenever this is possible, breeding pairs or groups of all species exhibited; there is constant contact with other zoos to make up such pairs and, in 1969, some interesting matches were planned and made. From the public point of view the most attractive was the arrival in March of the 2-year old female Polar Bear 'Sabrina', a gift from the Bristol, Clifton and West of England Zoological Society and a second-generation zoo animal, as a mate for 'Pipaluk', the Polar Bear born in London in 1968.

Scientifically more important, although less spectacular, was the loan from the Jardin des Plantes Zoo in Paris of a male Ruffed Lemur as a mate for the single female in the Charles Clore Pavilion; this species is believed to be on exhibition in only three zoological collections outside Madagascar.

In preparation for stocking the new Primate House, planning was started to achieve the right balance in our groups of apes and monkeys. One important aspect was the acquisition of a young female Lowland Gorilla as a possible future mate for the male 'Guy'. If all goes well the two animals will be put together soon after the new House is opened, by which time the female will have reached breeding age, and the time they have spent in adjoining cages will be well used in the tricky task of building up the necessary sympathy between them.

Other notable additions to the mammal collection for the important purpose of building up breeding pairs or groups included two new Sealion cows to increase the herd to one male plus four females, and a female Kudu for the single male in the Collection.

In the Charles Clore Pavilion the record of breeding success of the first two years was maintained. It is worthy of note that all the Marmoset and Tamarin species in this House, as well as all the members of the Loris family, have now bred. Other births in the House included several Crested Porcupines, one Brush-tailed Porcupine, another Douroucouli and three Zorillas.

There was once again a most satisfactory number and variety of other mammal births. Although we now accept the breeding of Chimpanzees as quite normal, the two births in 1969 make up a record of nine births in the four years since the breeding colony was established. Three of the first four died, mainly as a result of inexperience on the part of the mothers, but the six survivors have thrived, which is a very fine record by any standards. Three Timor Deer, several Blackbuck and Barbary Sheep, another litter of Lions and the second Lar Gibbon birth to the pair in the Gibbon Cage were some of the other breeding successes during the year.

But perhaps the most exciting birth was that of a female Black Rhinoceros on 27th November, after an accurately determined gestation period of 15 months and 3 days. This was the first of this species to be born either at Regent's Park or Whipsnade.



For the last two to three years the stock of Bactrian Camels at both Regent's Park and Whipsnade has not kept up with the likely needs of the future. As a result, an exchange was arranged with the Moscow Zoo Centre, the Russian animal trading organization, and 12 camels were delivered to Regent's Park during 1969. They will remain in London for a year to fulfil quarantine requirements and will then be sent to Whipsnade to form a new breeding herd.

**Bird section** The owls have once again proved to be a most successful breeding group. Six species or subspecies were bred, including the Spectacled Owl, Snowy Owl, Abyssinian Eagle Owl, Kenya Eagle Owl, West African Wood Owl and Barn Owl. This is the first time the Spectacled Owl has bred in Regent's Park, and it is probably the first time it has been bred in this country.

Many pheasants have also been bred, including a number of species which are rare or are becoming rarer in the wild, such as Elliot's Pheasant, Hume's Pheasant and the Cheer Pheasant.

The rearing of a Kookaburra or Laughing Kingfisher from a pair acquired only a few months earlier was another breeding 'first' in the Collection, and was of particular interest to the public.

The Snowdon Aviary continues to be one of the major displays in the Zoo and each year increasing plant growth adds to its naturalness. Birds reared in the Aviary in 1969 included Cattle Egrets, Night Herons, Sacred Ibis, Herons, Grey-headed Gallinules, Speckled Pigeons and, interestingly, a White-cheeked Touraco.

Five species have been added to the Collection which have not been seen here before, including a pair of Hooded Mergansers, *Mergus cucullatus*, and a fine group of five Carmine Bee-eaters, *Merops nubicus*. Other species not seen at Regent's Park for many years include Pheasant-tailed Jacana, Black-throated Mango Humming-birds and Alpine Choughs.

The Avicultural Society awarded five Certificates of Merit to the Society for breeding, in 1968, the Princess Stephanie's Bird of Paradise, the Grey-backed Thrush, the Tasmanian Waterhen, the West African Wood Owl, and the Magellan Eagle Owl.

**Aquarium** As already reported, a new viewing-glass was installed in the large conger eel tank and the opportunity was taken to redesign the tank to provide better conditions for the fish, and improved viewing for the public.

During the year the Aquarium has received several consignments of marine tropical fish, including batfish, groupers, cleaner wrasse and clownfish. The cleaner wrasse removes small crustaceans, sponges, bacterial colonies and pieces of dead tissue from other fish, thereby performing a useful service. Clownfish or anemone fish are interesting because they live in close association with sea-anemones and although anemone tentacles have sting-cells which paralyse other small fish, the clownfish swim unscathed among the tentacles of certain species of sea-anemones in order to seek cover from their enemies.

Several exchanges of fishes and other aquatic animals have been made with aquaria in this country and overseas.

**Insect House** A Bird-eating Spider, *Scodra griseipes*, an unusual arboreal type which



is becoming uncommon, was received at the beginning of the year. It produced a cocoon containing a number of eggs, which hatched and produced about 5 dozen young spiders which have done well.

Seven Australian Giant Stick-insects, *Acrophylla titan*, were presented to the Insect House. The adult female grows to at least 13 inches in length and  $\frac{1}{2}$  inch in diameter and is the largest stick-insect ever to have been exhibited here. The six female specimens were all laying eggs at the end of the year.

**Reptile House** The new den built in 1968 for Giant Tortoises is proving satisfactory, and the collection housed there has been augmented by two female Aldabra Giant Tortoises, which were acquired, with the approval of the Survival Service Commission of the IUCN, to make up a breeding group with the males already in the Collection.

Interesting arrivals included two Morelet's Crocodiles, *Crocodylus moreletii*, a rather uncommon species found in Guatemala and British Honduras. They are between 18 inches and 2 feet long and have not previously been exhibited in the Reptile House. Other interesting arrivals were three Fiji Boas, *Candoia bibroni*, which are new to the Collection; these are young specimens, about 30 inches long, with a greyish ground colour and brown neck markings.

Between the 15th and 18th December seven Indian Cobras were hatched out from a clutch of 12 eggs laid on 22nd October and incubated in polythene bags at a temperature of between 80°F and 95°F. These are the first Cobras to be hatched in the Collection for over 20 years.

#### VETERINARY AND PATHOLOGY REPORTS

During the year the number of cases receiving veterinary attention, excluding routine new arrival screening, was 566. The number of new arrivals screened in the Hospital was 70. Animals passing through the Quarantine Section totalled 14.

The general health of the Collection has remained good. There have been no serious outbreaks of disease and considerably less evidence of nutritional deficiencies, injury being the most important cause, or contributory cause, of death in mammals and birds. Senility was also a contributory factor, providing further evidence of good health and longevity in the Collection.

A regular survey of selected animals used as indicators, and of young primates born in the Collection, has shown that the nutritional status of these animals is satisfactory. Following evidence of Vitamin E deficiency in young camels the group now receive Vitamin E dietary supplements.

Unusual subjects for surgical operations included two Cheetahs with foreign bodies in the stomachs. These proved to be wood wool and long grass and were successfully removed. Severe injury to the chest of a Blesbok caused by fighting was corrected surgically, and a number of ruptures of abdominal muscles in deer and antelope, also caused by fighting, were repaired.

The new Giraffe restraint crate was used to enable hoof trimming to be carried out without the use of sedative drugs.

The female Indian Elephant 'Rusty' had to be destroyed during the year, as she had been ailing for some time and showed signs of lameness due to disease of the joints. As



soon as it was evident that the situation could not be corrected, euthanasia was performed using an intramuscular injection of Etorphine followed by intravenous injection of pentobarbitone solution. This method proved to be painless and caused no distress.

A new sedative drug, Xylazine, is proving safe and effective in certain ungulates, and its use will facilitate their handling and examination.

During the year 652 autopsies were made on animals which died in the Zoo, including 119 new arrivals which were not acclimatized to captivity; 340 other carcasses were received from external sources.

Bacteriological and parasitological examinations were made on 478 specimens, comprising 312 submitted by the Hospital and Research Departments, 26 from external sources and 140 specimens from Whipsnade.

### COOPERATION ON TRAINING WITH OTHER ZOOS

The Curator of the Aquarium, Dr H. G. Vevers, has been concerned with the initial design of new aquaria in Burma and Brunei, and the staff have trained two young aquarist pupils who, on return to their own country, will be responsible for the running of the aquaria.

Following a visit by Mr J. Yealland, the then Curator of Birds, and the Society's Architect, Mr J. Toovey, to Singapore in 1968 to advise the Jurong Town Corporation on the design of a new large Bird Park, the Society continued to help by the training of staff for the project. Mr John Yim, the designated Warden of the Bird Park, spent the summer months gaining experience at Regent's Park, and Mr J. McCorry, Senior Keeper, was seconded by the Society to Singapore for the last three months of the year on training and general supervisory duties.

Another training assignment was the attachment, for two months, of Mr S. Nakagawa, Veterinary Officer of the Ueno Park Zoo in Tokyo, to Regent's Park and Whipsnade.

### PUBLICITY

The Film and TV Unit has continued to give assistance in the preparation of a wide range of films and television programmes. Among the most notable this year were a 40-minute colour programme about Regent's Park introduced by Jonathan Miller, which was seen twice during the year on BBC2; a 40-minute programme on Regent's Park shown in the summer as part of the BBC2 series 'Great Zoos of the World'; and a one-hour colour programme made by Thames Television and transmitted in December under the title 'The Winter Zoo'.

In addition, two similar programmes were prepared for Belgian and American television. The Film and TV Unit has also provided numerous sections of film to illustrate new themes introduced into the Education Department's lecture/demonstrations for schools. A large number of black-and-white photographs and colour transparencies of animals in the Collection has been added to the photographic library.



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

	<i>In the Collection on 1 January 1969</i>	<i>Received in 1969 by presentation, exchange, deposit, purchase and transfer from Whipsnade</i>	<i>Born and hatched in the Menagerie in 1969</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Whipsnade</i>	<i>In the Collection on 31 December 1969</i>
Mammals	860	156	198	365	849
Birds	1,461	145	98	346	1,358
Reptiles and Amphibians	585	276	24	233	652
	2,906	577	320	944	2,859
<i>Estimated numbers of fish and invertebrates in the Collection at 31 December, 1969</i>					
Fish	2,500	Invertebrates	1,540		



# Whipsnade Park

Visitors during the year 567,128

Visitors to the Children's Zoo 189,099

Cars brought into the Park 46,466

## GENERAL DEVELOPMENT

The major development during the year was the completion of the Chimpanzee Exhibit. Unfortunately the house was not ready for occupation until after the end of the summer season, but a group of one male and four female Chimpanzees was transferred from Regent's Park in September so that the staff could gain experience of working in the building, and the animals could be acclimatized before the depths of winter weather. At the present time, despite minor initial difficulties, the house appears to be an unqualified success from the point of view of both the animals and the keepers.

The process of repair and modification of existing buildings and installations to meet changing needs continued. During 1969, a number of yards were built round the animal shelters in the paddocks in order that the animals can be controlled more readily, and can be kept off the grass when it becomes too wet or too infected. The Elephant Paddock was divided to allow better control of the now relatively large herd of three Indian and three African Elephants. A new expanded concrete material proved to be a successful flooring for their stables. The old farm stockyard and shelter were converted to provide accommodation for young European Bison born in the Park. An oil-fired central heating unit was installed in one of the two Hippopotamus Houses.

In the Children's Zoo, young hand-reared and small domestic animals were allowed to roam on the lawns, and visitors could mix freely with Formosan Sika Deer, Jersey, Ankole and Highland Cattle calves, a young camel, young Llamas and Mouflon, as well as domestic geese, ducks, rabbits, lambs and goat kids. The group of Windsor White Goats, from which mascots are supplied to The Welsh Regiment, was transferred from the Downs to the Children's Zoo where it is much more easily seen by visitors.

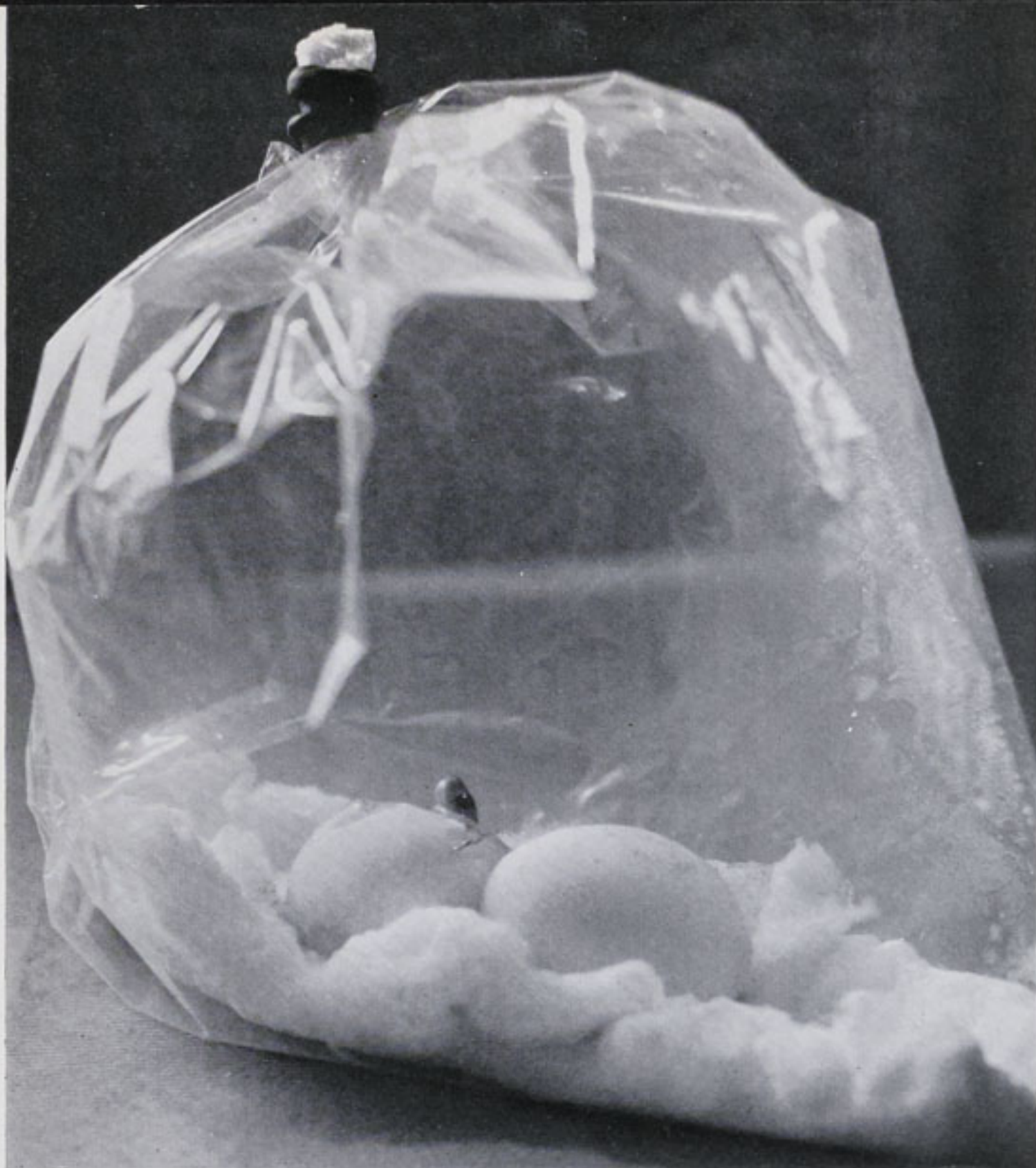
A third small greenhouse was provided for the gardeners and more tree-planting was





Black Rhinoceros born November 1969, London Zoo





Indian Cobra hatching  
in incubator, December  
1969, London Zoo  
*The Zoological Society  
of London*



Members of the Young  
Zoologists' Club Safari  
Holiday in Ngurdoto  
Crater National Park,  
August 1969  
*The Zoological Society  
of London*





Chinese Serpent Eagle, London Zoo  
*The Zoological Society of London*





Musk Ox with calf  
born June 1969, Whipsnade Park  
*The Zoological Society of London*



carried out. An area behind the African Rhinos' Paddock was planted with coniferous trees, and another much larger paddock was planted with trees which, when mature, will be suitable for animal browse. A third plantation was prepared as a paddock for the exhibition of Roe Deer in a few years time.

An outline plan for the future development of Whipsnade was prepared by a Working Party set up by Council at the end of 1967. The Collection at Whipsnade is complementary to that at Regent's Park, and at the same time has a special role in the building up of animal stocks. To this end there is a regular exchange of animals between the two Zoos. Whipsnade also has space to exhibit animals in groups which more closely correspond to natural conditions, and which cannot be achieved in Regent's Park. The objectives of natural exhibition, and the increasingly urgent needs of conservation are the dominant factors governing the proposed developments. These are now being worked out in detail, for implementation when resources become available.

### THE COLLECTION

The outstanding breeding success was the birth of two healthy bull Musk Ox calves, which proved an exciting public attraction throughout the year. These are the first Musk Oxen to be bred in captivity in the British Isles and, so far as we know, the first to be born in the country since the species vanished from Britain in the last Ice Age. Reindeer calves, the first for twelve years, were also born, one of which, a female, is still surviving. The young Kodiak Bears imported in 1963 produced their first litter of two cubs, both of which were males.

The Blesbok herd has increased by a further two calves and now numbers 12, but two of these animals, both males, were transferred to Regent's Park to prevent possible losses through fighting. The Przewalski Wild Horse herd has again increased by a colt and a filly, and now numbers 10. The herd of Arabian Camels was increased by one calf, born on the 16th June to a mother which produced a live calf previously in May 1968. Another European Bison was born, as well as two Père David's Deer, Situtunga, Moose, American Bison, Cape Buffalo and 27 Helmeted Guineafowl.

The Pelicans on Spicer's Field have been moved to the Home Pond and increased in number so that four species are now exhibited. The Mouflon flock has been moved from Bison Hill to Cut Throat Paddock where it is more easily seen by the public. The Wapiti have been transferred from Triangle Wood to Bison Hill where the Bison and Wapiti live together with due respect for each other.

The pair of Mountain Zebra previously at Regent's Park were transferred to Whipsnade to join the solitary mare and it is hoped that they will soon breed. One of the female Pygmy Hippopotamus was sent to Chester for another attempt at mating with their male, and a young male has been purchased from Brookfield Zoo, Chicago.

The Collection has been enlivened by the purchase of 16 Macaws, 12 Marabou Storks, four Crowned Pigeons and, on the old Pelican Pond in Spicer's Field, a collection of 26 British water fowl of seven species is making an interesting display. Five King Penguins have been added to the penguin flock.

During the year the old Reticulated Giraffe female 'Maggie' died, having spent over 25 years in captivity. Despite her age, she died with a fairly well advanced female calf *in utero*.



## VETERINARY REPORT

The general health of the animals has remained good. The diets of carnivores and the browsing herbivores have been reviewed, and a number of new food supplements have been introduced. The regular collection of faecal samples for examination continues and a wide range of anthelmintics is in use.

One hundred and thirty-five mammals and 4 birds were sedated during the year. Two new immobilizing agents were successfully used with the result that, with a few exceptions, all resident species at Whipsnade can now be examined with relative ease, and routine foot care and the movement of animals from paddock to paddock is very much safer and easier.

Three hundred and eighty-six mammals and 200 birds were postmortemed by Mr J. A. Manton and Mr D. M. Jones and samples from some of these were sent to the Pathologist, Regent's Park for further examination. The records on veterinary subjects have been expanded to include notes on all clinical cases, hand rearing data and breeding successes and failures.

## CATERING FACILITIES

The rebuilding of the Cloisters Cafeteria was completed. This now provides efficient self-service facilities which are extremely popular with visitors. The Hall Farm Restaurant, which has for some time been running at a loss, was closed at the end of the year. The staff canteen was completely rebuilt and modernized.

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

	<i>In the Collection on 1 January 1969</i>	<i>Received in 1969 by presentation, exchange, deposit, purchase and transfer from Regent's Park</i>	<i>Born and hatched in the Park in 1969</i>	<i>Died, sold, exchanged, returned to depositors and transferred to Regent's Park</i>	<i>In the Collection on 31 December 1969</i>
Mammals	1,088	43	386	609	908
Birds	1,078	269	159	309	1,197
Reptiles	2	2	—	2	2
	2,168	314	545	920	2,107



# Scientific Activities

## SCIENTIFIC MEETINGS

Eight meetings were held during the year, most of the papers being published in the *Journal of Zoology*. Among the many interesting contributions not intended for publication were: Reports on The Charles Clore Pavilion for Mammals and a film record of the Giant Pandas, 'An-An' and 'Chi-Chi' by Dr M. R. Brambell; 'The Field Studies Council today' by Dr J. D. Carthy. Dr R. D. Martin, Mr M. Nathan and Mr C. Rodger described a field study of Madagascar lemurs which they illustrated with a film, and Mr R. E. Chaplin spoke on native and alien deer in Britain.

## SYMPOSIA

The following were held:

November 14th/15th 'Variation in mammalian populations' organized by Dr R. J. Berry and Mr H. N. Southern.

December 4th/5th 'The haemostatic mechanism in man and other animals' organized by Professor R. G. Macfarlane, FRS.

## PUBLICATIONS

*Journal of Zoology*

*Transactions of The Zoological Society of London*

*Symposia of The Zoological Society of London*

*Zoological Record*

*Nomenclator Zoologicus*

*Editor*: Dr H. G. Ververs

*Assistant Editor*: Miss M. A. Edwards

*Journal of Zoology* Volumes 157, 158 and 159 were published, and the Council is extremely grateful to the many zoologists who spare a great deal of their time to referee the papers and so ensure a high standard of contributions to the *Journal*.



**Transactions** 'Habitat and cardiovascular disease: observations made on elephants (*Loxodonta africana*) and other free-living animals in East Africa' by Sylvia K. Sikes, was published as Volume 32, part 1.

**Symposia** Number 24 'Diseases in free-living wild animals', edited by Dr A. McDiarmid, was published.

Certain volumes of the *Symposia* series have been out of print for some time, but there has been a continuing demand and it was decided to reprint some of the volumes. Number 10 'The Primates', Number 13 'The biology of survival' and Number 14 'Social organization of animal communities', have now been reprinted.

**Zoological Record** Volume 102 (literature for 1965) was completed with the publication of 'List of New Genera and Subgenera'. Eighteen sections of Volume 103 (literature for 1966) have been published, the remaining sections, 'Insecta' and 'List of New Genera etc' being in the course of compilation. Of Volume 104 (literature for 1967) seven sections have been published and ten are in the press.

The possibility of mechanizing some aspects of the compilation and production of the *Record* is being investigated, and ASLIB (The Association of Special Libraries and Information Bureaux) has agreed to undertake a feasibility study in 1970.

The Commonwealth Institute of Entomology has for many years been responsible for the production of the 'Insecta' section, but during the year it was mutually agreed that the Society would in future assume responsibility for this section in the hope that closer coordination with other sections would reduce the delay in publication. The Council wishes to thank the Director and staff of the Institute for their cooperation and for the work they have undertaken in compiling this very large section of the *Record*.

In order to increase the number of journals abstracted for the *Record*, several Recorders are now working at the National Lending Library, Boston Spa, and the Council is most grateful to the Director for making space available. The Council is also greatly indebted to the Director and Librarian of the British Museum (Natural History) for providing facilities for a large number of Recorders; to the many zoologists who act as Recorders and Searchers for the *Record*, and to those whose donations to the Zoological Record Fund are listed in Appendix 6.

### **International Zoo Yearbook**

*Editor* : Mr J. Lucas

*Advisory Editor* : Dr H. G. Vevers

Whereas in Volume 1 only 131 zoos contributed information for inclusion in the *Yearbook*, the current volume includes notes from 571 zoos, aquaria, bird parks and other institutions with important animal collections. The total number of zoos and similar organizations corresponding with the *Yearbook* office is 873, and many who returned the annual questionnaire, from which much of the material in the *Yearbook* is compiled, also completed the breeding lists and rare animal census.

Volume 10 was published in January. Section 1 consists of 20 papers on birds of prey and owls in captivity. These include articles by J. D. Wallach and G. M. Flieg on cramps and fits in carnivorous birds; by H. Mendelssohn and U. Marder on problems



of reproduction in birds of prey in captivity; and the breeding of the White-tailed Sea Eagle at Vienna Zoo by W. Fiedler. Other contributions in this section include notes on a Honey Buzzard at Aberdeen Zoo by George Leslie; observations on the breeding biology of Steller's Sea Eagle at East Berlin Zoo by Heinrich Dathe; breeding of owls in the London Zoo by J. J. Yealland, and the exhibiting and breeding of Elf Owls in Washington Zoo by Kerry Muller. Section 2, covering new developments in the zoo world, contains 62 papers and reports on several aspects of zoo management, such as Architecture and Construction, Breeding, Conservation, Husbandry and Research, and Veterinary Work and Zoos.

Section 3, the reference section, contains details of 873 zoos, aquaria, bird parks and other institutions possessing collections of animals throughout the world; zoo federations and associations; numbers and species of wild vertebrates bred by zoos and research institutions in 1968; and a census of the numbers and species of rare animals in captivity in 1969. A cumulative index to Volumes 1 to 10 completes the volume.

In September and October 1969 Mr Lucas visited the United States of America to attend the annual meeting of the American Association of Zoological Parks and Aquaria and the annual meeting of the International Union of Directors of Zoological Gardens in order to discuss the development of the *Yearbook*.

#### LIBRARY

During the year work proceeded on the projects financed by a grant from the Wellcome Trust. The first, the renovation of the old book store to provide new shelving, adequate lighting, air-conditioning and ventilation, has been completed.

The second, the re-cataloguing and classification of the monographs in the Library, is going ahead but, in view of the size of the collection, will take some years to complete.

Meanwhile the Library has continued to provide a service of book loans and information on a steadily mounting scale.



# Research

During August and September Dr H. G. Vevers, the Curator of the Aquarium, was a member of the marine biological party sent out by the Royal Society of London to work in the Cook Islands (South Pacific) as part of the Royal Society of New Zealand's Cook Bicentenary Expedition.

The main part of his work on this expedition was carried out on the island of Aitutaki where he investigated the biology of the echinoderms living on the reef and lagoon floor. The dominant echinoderms were holothurians, some of which evidently play an important role in moving the sediments as they eat vast quantities of coral sand, digesting the adhering organic matter. The asteroid *Acanthaster planci*, which is reported to be causing serious damage to the Great Barrier Reef of Australia, was found in the Cook Islands, but only in small numbers, and there was no evidence that the reef structure was suffering to any significant extent.

Dr Vevers also worked on the fauna living in coral heads and made a general collection of fishes and marine animals from the reefs and lagoons.

## THE NUFFIELD INSTITUTE OF COMPARATIVE MEDICINE

### Staff

*Director*: L. G. Goodwin, MB, BS, MRCP, BPharm, BSc, FIBiol. *Biochemistry*: M. A. Crawford, PhD. *Infectious Diseases*: G. R. Smith, PhD, MRCVS, DVSM, DipBact. *Pathology*: R. N. T-W-Fiennes, MA, MRCVS. *Research Assistant Infectious Diseases*: D. E. Bidwell, BSc. *Laboratory Superintendent*: P. R. E. Wallace, FIST. *Administrative Assistant*: Miss P. E. Wright. *Visiting Graduates*: P. A. J. Ball, MD, MRCP; M. J. M. Barker, MB, BS; G. H. du Boulay, MB, BS, MRCP, DMRD, FFR; T. Cartwright, PhD; Miss J. Davies, BSc; Miss C. M. Hawkey, PhD; R. T. Herbert, BSc; D. Reichl, IngChem, csc (Prague); R. C. Siddons, PhD; A. Voller, PhD; D. B. Yates, BPharm, MSc; A. S. Young, BSc; D. A. B. Young, DPhil; Mrs R. J. Zalin, BSc.

During 1969 there were 51 members of staff, of whom 14 were visiting graduates supported by grants. £81,000 (nearly 70 per cent of the total operating costs) was met from grants and donations.



Miss M. M. Gale and Dr H. P. Voorheis, who is now working at the Molteno Institute, Cambridge, left the staff; Dr M. J. M. Barker and Miss J. Davies joined the Pathology Department and Miss E. Monson replaced Miss P. Verity as radiographer. Dr R. C. Siddons joined the staff and will be working at the Wellcome Trust Research Laboratories, Nairobi, with which a link has been established. Miss A. Bartlett qualified for membership of the Institute of Biology; Dr L. G. Goodwin was appointed visiting Professor to the Department of Pharmacology, Royal Free Hospital Medical School.

Sixteen research scientists from other institutions have visited the Institute to use the facilities and to collaborate in research investigations.

**Research projects** Mr R. N. T-W-Fiennes, during his visit to the Primate Research Center, Covington, Louisiana, made studies of the comparative anatomy of blood vessels and has edited a book on diseases of primates. Dr M. J. M. Barker and Mr R. T. Herbert are studying nutritional bone disease.

Dr C. M. Hawkey has continued her work on comparative haematology and, with Dr T. Cartwright, has made advances in the separation and characterization of plasminogen activators from saliva and salivary glands. Miss J. Davies has started work on the clotting mechanisms of invertebrates.

Dr L. G. Goodwin and Mr D. B. Yates have investigated the pathogenesis of trypanosome infections.

Dr G. R. Smith has continued his work on mycoplasmosis and is also studying *Aspergillus* infections. Dr A. Voller has investigated the immune reaction in simian and human malaria infection, and has also undertaken field work at the East African Institute of Malaria and Vector-Borne Diseases, Amani, Tanzania. Mr D. E. Bidwell has completed work on arbovirus haemagglutination and has begun a study of the growth of viruses in invertebrate tissues. Dr P. A. J. Ball and Miss A. Bartlett are investigating the host-parasite relationships in nematode infections. Mr A. S. Young has completed the first part of a survey of blood parasites in animals in the Serengeti National Park and neighbouring areas of East Africa.

Dr M. A. Crawford has made observations that underline the importance of polyunsaturated fatty acids in the nutrition of wild animals and man, and Dr D. Reichl has investigated the action of lipoprotein lipase, a key enzyme in the storage and mobilization of fat. Mrs R. J. Zalin has studied the synthesis of amino acids in ruminants, and Dr D. A. B. Young the action of insulin and insulin inhibition.

Dr G. H. du Boulay, in collaboration with the staff of the Institute and colleagues from St Bartholomew's Hospital, the National Hospital, Queen Square, and the London School of Hygiene and Tropical Medicine, has made radiological studies of blood flow in the cerebral arteries and other vessels, cerebrospinal fluid pulsation and of the effect of filarial infections on lymphatic vessels. The Wellcome Museum of radiographs of normal and diseased animals, established in the Institute with the aid of a grant from the Wellcome Trust, now forms a unique reference collection.



## THE WELLCOME INSTITUTE OF COMPARATIVE PHYSIOLOGY Staff

*Senior Research Fellow*: I. W. Rowlands, PhD. *Research Fellows*: Miss B. J. Weir, MA, PhD; W. H. Tam, PhD; Russell C. Jones, PhD. *Research Students*: Miss C. M. Roberts, BSc; A. P. Gulamhusein, BSc. *Research Assistant*: P. A. Racey, MA. *Senior Technician*: G. Nevill.

Miss Kleiman, who obtained a PhD (London) degree for her dissertation on behavioural studies on the Acouchi, left in October to take up a research fellowship at Rutgers University, NY. Mr Tripp also completed his studies for the PhD degree and left in November. Miss Roberts was awarded one of the Society's Ford Research Studentships in October to study the embryology of some hystricomorph rodents and Mr Gulamhusein joined the staff on a Fellowship received from the Ugandan Ministry of Education to investigate the reproductive physiology of the stoat.

**Research projects** Dr Rowlands and Dr Tam, with Dr Kleiman, completed a study of the histology of the ovaries and of progesterone secretion in the Acouchi and Dr Rowlands and Dr Tam have continued their studies of the progesterone secretion in the guinea-pig. Dr Tam is now assaying progesterone in the Cuis (*Galea*), Chinchilla and Viscacha. During the summer, stoats were successfully bred in the Institute and will provide material for a study of delayed implantation.

Further studies have been made by Dr Weir on the colonies of hystricomorph rodents. Fertile matings in Chinchilla have resulted from ovulation and oestrus induced by gonadotrophic hormones. As many as 800 eggs have been found in the oviducts of the Viscacha (*Lagostomus*) but usually only two young are born in a litter. It has been shown that female Cuis (*Galea*), when isolated from males, do not have oestrous cycles, and that the ovaries of the Degu (*Octodon*) are extremely sensitive to stimulation with gonadotrophins. A grant has been received from the Wellcome Trust to collect a further supply of these rodents from South America.

Dr Russell Jones has been studying the changes in ultrastructure that occur in mammalian spermatozoa during their maturation in the male reproductive tract. A special study is being made in the pig of the changes taking place in spermatozoa immediately before and at fertilization.

Mr Racey has continued his work on the survival of spermatozoa in the uterus of the bat throughout hibernation and on the capacity of various gonadotrophins to induce ovulation. With Dr Tam he has completed the study of cyclic changes in the secretion of male sex hormones by the testis. Mr Tripp has terminated his studies on Elephant Shrews in captivity. Although little success was achieved in establishing a breeding colony, much information has been obtained on the anatomy and physiology of their reproductive organs.

Several more valuable specimens have been added during the year to the Reference Collection of Reproductive Organs.

Mr Hime and Dr Rowlands have observed the effects of gonadotrophins in some captive wild animals as a possible form of treatment for infertility. Ovarian stimulation and indication of 'heat' were obtained in a Saiga Antelope and a Jaguar, but the results in the Giant Panda 'Chi-Chi' were disappointing.



# Educational Activities

## EDUCATION PROGRAMME FOR SCHOOLS

The admission charge for school pupils, which had remained unchanged since 1963, was increased as from Easter.

During the spring and autumn terms visits to Regent's Park by secondary school pupils set new records, the attendances for the year being slightly higher than in 1968. This steady increase has been maintained almost unbroken for the past ten years, the only exception being 1963, the year in which admission prices were previously increased. The figures were:

Regent's Park	Spring Term (Secondary schools)	15,030
	Summer Term (Primary schools)	18,399
	Autumn Term (Secondary schools)	17,149
Whipsnade Park	Summer Term (Secondary schools)	3,111
		53,689

The number of primary schools taking part in organized educational visits during the summer term was less than in 1968, but attendances of secondary school pupils at Whipsnade during the same term were higher than for several years.

A feature of the programme introduced during the autumn term was the number of topics which were in accord with the modern Nuffield approach to biology teaching. These topics proved very popular with teachers.

## OTHER COURSES

Two short courses for university students were held during the Easter vacation, and the Council is very grateful to the professional zoologists who conduct these courses. Co-operation with universities, colleges of education and technical colleges was maintained and a number of special lectures were given during the year.

Arrangements have been made for a symposium for sixth form pupils entitled 'The Natural History of Hormones', organized by Professor E. J. W. Barrington, to be held in March 1970. Schools have expressed very great interest and over a thousand applications were received for the 250 seats available.



## CHRISTMAS LECTURES

Three meetings were held during the Christmas period for the children and young friends of members of the Society. Mr Edward Jackson gave a talk on waterfowl under the title 'The Goose is Getting Fat'. Dr John Napier gave a talk on Primates, 'Habit and Habitat' and the film 'Lord of the Forest' was shown. These meetings were well attended and were greatly appreciated.

## YOUNG ZOOLOGISTS' CLUB

The most important event for the Club this year was the Safari holiday, in which 85 Club members took part. Accompanied by members of the Society's staff and by Messrs John and George Newmark and Mrs John Stidworthy, the group visited Nairobi, Mombasa, Arusha and eight major game reserves and parks, including Nairobi National Park, Amboseli Game Reserve, Ngorongoro Crater Game Reserve, Lake Manyara National Park and Tsavo National Park, and also made special trips to the excavations at Olduvai Gorge, to Watamu Marine Sanctuary and to Gedi National Park. The holiday was a great success and it is hoped that it will be possible to arrange similar holidays in future years.

Other Club activities were also very popular during the year. John and George Newmark gave the Christmas lecture in January, describing their 'Hunting Holidays for the Zoo'. Nearly 50 members braved the snow and ice in February for a journey to Slimbridge to see the vast flocks of visiting wildfowl, and over 150 members joined the Club excursion to Bristol Zoo in April. Five film shows were held at Regent's Park with additional film shows for the members who were taking part in the Safari holiday. In the spring guided tours were held at Regent's Park and Whipsnade Park, and a Zoo Questionnaire for Whipsnade Park was set during the summer.

Three issues of the 'Zoo Magazine' were published during the year, containing contributions from members and many fine photographs of animals in the two collections. The competitions in the 'Zoo Magazine' attracted a large number of entries.

The Council would like to thank the many members and friends of the Society who have helped and encouraged the Club during the year.



# Staff

At the end of the year the permanent staff of the Society totalled 577. A list of senior members is given in Appendix 2.

## RETIREMENTS AND RESIGNATIONS

Mr J. Yealland, Curator of Birds since 1951, retired in March after nearly 18 years' service. Other retirements included Mr B. Smith, Overseer of Mammals; Mr H. L. Ward, Head Keeper, Aquarium; Mr L. G. Smith, MBE, Head Keeper, Monkey House; Mr J. Wickham, Propagator and Deputy Head Gardener; Mr P. Partridge, Senior Chauffeur, all of whom had served for 40 years or longer, and Mr L. Conway, Head Keeper, Carnivore Section, Whipsnade Park; Mr L. R. F. Spanner, Chef de Cuisine; Mr J. G. Smart, Accounts Clerk, Catering Department.

## APPOINTMENTS AND PROMOTIONS

### Regent's Park

Mr P. J. Olney *Curator of Birds*  
Mr M. E. McInerney *Establishment Officer*  
Mr N. H. M. Morrison *Chef de Cuisine*  
Mr T. Sangster *Overseer of Mammals*  
Mr G. Callard *Head Keeper, Monkey House*  
Mr R. Dumbelton *Head Keeper, Aquarium*  
Mr G. Figgett *Head Keeper, Lion House*  
Mr W. Gardner *Deputy Head Gardener*

### Whipsnade Park

Mr D. M. Jones *Veterinary Officer*  
Mr A. W. Billington *Head Keeper, Ungulate (Southern Area) Section*  
Mr F. Hughes *Head Keeper, Carnivore Section*

## GENERAL

A new salary structure for the executive and clerical staffs was introduced in August and, in November, the second and final stage of the new pay structure for the menagerie staff, which had been introduced in 1968, was implemented.

The wages and salaries of all sections of staff are aligned with various appropriate



public services, all of which received increases during the year, and were applied to the Society's staff. The effect will be to add over £40,000 to the Society's annual salaries and wages bill in 1970.

## TRAINING

Following the introduction of qualifying examinations for keepers, a two-year course of lectures and practical work was instituted in cooperation with the Department of Biological Sciences, Paddington Technical College. The course includes lectures and laboratory work at the College, supplemented by additional lectures and practical work at Regent's Park and Whipsnade.

The training scheme for catering staff continued to make satisfactory progress, and Mr P. E. Fisher, Mr N. H. M. Morrison and Mr G. Barker gained the Instructors' Certificates of The Hotel and Catering Industry Training Board. The Catering Department's Training Section has been given responsibility for the training of all the Society's staff in the use of decimal currency.

Mr R. Humphrys, Head Keeper of the Insect House, qualified for the Associateship of the Institute of Animal Technicians. Mr R. N. Cinderey, Laboratory Technician, Pathology Department, gained the Science Laboratory Technicians' Advanced Certificate with credit.

## MEDALS AND AWARDS

The Society's Silver Medal was awarded to Mr F. A. P. Stengelhofen, formerly Architect to the Society, in recognition of his long and devoted service.

The Society's Bronze Medal was awarded to Mr H. G. N. Robinson, Head Keeper, Giraffe and Cattle House, and to Mr J. Wickham, Propagator and Deputy Head Gardener, for long and meritorious service.

The Council offer their congratulations to Mr L. G. Smith, Head Keeper, Monkey House, who was appointed a Member of the Order of the British Empire in the Birthday Honours List.

## OBITUARY

It is with deep regret that we record the deaths of Mr G. R. Doubleday, formerly Public Relations Officer to the Society, and Mr C. G. Nicholls, Supplies Officer to the Society until his retirement in January 1967.



# Acknowledgments

The Council records its gratitude for the invaluable assistance given by the members of its committees, whose expert advice is of great assistance.

The Council is also grateful to press representatives and photographers for their co-operation and interest in the Collection and in the activities of the Society.

The Society is indebted to the many Fellows and others who have sent specimens for the Collection, both at Regent's Park and Whipsnade. The gifts are recorded in Appendix 5. Many other interesting animals have been received in exchange from zoological societies and institutions. The Council is grateful for their valuable cooperation, and also acknowledges the assistance of Dr G. Corbet, Mr J. E. Hill and Mr C. Frith of the British Museum (Natural History) who, on a number of occasions, have been extremely helpful with the identification of new arrivals.

Senhora Hermione Blandy de Freitas Martins and Senhor Joao de Freitas Martins of Madeira, a Corresponding Member of the Society, have continued to take a lively interest in the Aquarium and have sent valuable collections of marine animals.

The Council is grateful to the many people and firms who have given valuable assistance to the Veterinary Officer and to the Pathologist, and is particularly grateful to Dr J. Green and Mr M. A. Cawthorne of Beecham Research Laboratories for carrying out Vitamin E estimations; Dr P. Hugh-Jones, Pulmonary Research Unit, King's College Hospital Medical School, for his interest and assistance in respiratory gas analysis; Mr P. J. Lane, Baywood Chemicals Ltd, for supplies of Xylazine; Professor G. Nelson, London School of Hygiene and Tropical Medicine, for histological preparations of eye lesions; Dr Joan Taylor, Dr K. P. Carpenter and Dr S. P. Lapage, Public Health Laboratory Service, for *Salmonella* and other bacterial identifications; Messrs P. K. C. Austwick, G. Peppin and J. Thompson for help with the identification of fungi; Dr P. H. Lamont for psittacosis diagnosis and Miss G. Lewis of the Central Veterinary Laboratory, Weybridge, for various biochemical estimations; Professor J. J. Buckley for identification of helminths, Dr R. S. Bray for assistance in identifying protozoa; Dr B. R. Laurence and Dr M. G. R. Varma, also of the London School of Hygiene and Tropical Medicine and Dr T. Clay, British Museum (Natural History), for identification



of arthropod parasites; Professor P. C. C. Garnham, Imperial College Field Station, Ascot who also assisted with the identification of protozoas; Dr E. C. Appleby, Professor E. Cotchin, both of the Royal Veterinary College, Dr R. Finlayson, The Royal College of Surgeons of England and Dr M. J. Mitchinson, University of Cambridge, who helped in various ways with histopathology and Dr E. Elkan who assisted with the histopathology of diseases of reptiles and amphibians. Dr P. Cavanagh, Public Health Laboratory Service, Stafford, for typing *Mycobacterium* spp. and Dr L. H. Turner, Leptospirosis Reference Laboratory, for examination of sera for antibodies.

The Nuffield Institute of Comparative Medicine is grateful to the many friends and colleagues that have given assistance. In particular, thanks are due to the Game Wardens of Uganda and Tanzania; the staff of the Nuffield Unit of Tropical Animal Ecology, Mweya, Uganda; Mr T. Mann, Entebbe, Uganda; Dr D. Barkham, Mulago Hospital, Kampala; Mr N. M. Caspard, Makerere University College, Kampala, who have all cooperated in the collection of material from wild animals for biochemical studies. The Institute is also indebted to Sandoz Products Ltd for a gift of synthetic bradykinin, Geigy (UK) Ltd for Synopen, Kabi Pharmaceutical Company for Kabikinase, Williams R. Warner & Co. Ltd for Versatol-E, the Wellcome Foundation Ltd for tetanus vaccine, the Central Virus Research Laboratory for rabies vaccine, and T. Wall & Sons Ltd for pig stomachs and salivary glands. Thanks are also given to Professor J. L. Stafford, St George's Hospital, Dr K. Dormandy, Royal Free Hospital, Dr J. E. T. Jones, Royal Veterinary College, Dr G. S. Cottew, CSIRO Animal Health Laboratory, Parkville, Melbourne, who have provided various biological materials; the Director of the Royal Botanic Gardens, Kew, for a supply of samples of beech and oak; the Principal of the Royal Veterinary College for special animal accommodation; and members of the staff of the Society and Mobil Oil Company for donating blood samples. Much help and advice has been given by Dr R. Finlayson, Dr C. Symons, Professor F. Baum, Dr H. A. Sissons, Dr C. R. Spittle, Dr M. Lucas, Professor C. A. Keele, Dr A. L. Stalker and Sir John Ritchie.

Grateful acknowledgment is made by the Wellcome Institute of Comparative Physiology to the Wellcome Trust for grants to purchase additional accessories for the Ultraphot microscope which was donated last year and to enable a further collection of hystricomorph rodents to be made in South America in 1970; to the Medical Research Council for a grant to provide equipment and technical assistance for Dr Tam, and to World Health Organization for their continued support of research. The staff is also grateful to Professor Laing (Royal Veterinary College) for a supply of Chinchilla and to numerous individuals and organizations who have assisted in various ways with the research projects.

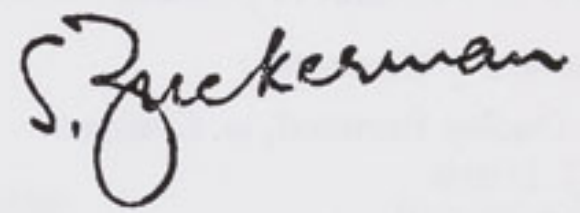
The Council is grateful for assistance at Whipsnade Park from Baywood Chemicals Ltd; Reckitt & Sons Ltd; Mr N. Sloan of the Cooper Technical Bureau, Berkhamsted; British Cod Liver Oils Ltd; Sterling Poultry Products Ltd; Cooper Nutritional Products; and Spillers Ltd.

The Council is grateful to the Board of Trade and HM Customs and Excise for their cooperation in arranging certain complicated imports and exports; and to Carworth Europe and the National Institute for Medical Research, Mill Hill, for the supply of rodents.



Shipping and transport assistance has been given at Regent's Park and Whipsnade by the following: Air France; Air India; American Express Company Inc; British European Airways, particularly their generous help in transporting the Giant Panda 'An-An' from London to Moscow; British Overseas Airways Corporation; British Rail; British United Airways; KLM Royal Dutch Airlines; London Transport Executive; Lufthansa German Airlines; J. F. Obree & Sons Ltd; Pan American World Airways; Qantas Airways; Rennie Hogg Ltd; Scandinavian Air Services; Seaboard World Airlines; Trans World Airlines; United Shipping Company Ltd; Union-Castle Line.

The Council is grateful to the many people who have offered Evergreen Oak for feeding purposes. Thanks are also due to Mr Barry Hilton and the Polkerris Boy Scout Troop for their assistance in providing a regular supply of bamboo for 'Chi-Chi' the Giant Panda.



SECRETARY



## Committees 1969-1970

### Gardens and Park Committee

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

*Members of Committee:*

Sir Dudley Forwood, Bt, *Chairman*  
C. J. Harris  
A. M. Hassell  
S. Wilson Kitchen  
The Earl of Mansfield  
Mrs R. Maudling  
The Hon. Ivor Montagu  
Geoffrey Schomberg, FLS  
Peter Scott, CBE, DSC  
Lady Daphne Straight  
The Marquess of Tavistock  
The Marquess of Willingdon  
*Secretary:* C. G. C. Rawlins, OBE, DFC

### Animal Welfare and Husbandry Committee

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

*Members of Committee:*

Peter S. Bridge, MA, BSc, DVSM, MRCVS  
M. Crawford, MRCVS  
W. Lane-Petter, MA, MB, BChir, FIBiol  
N. W. Pirie, MA, FRS  
John Reid, MRCVS, DVSM  
Sir John Ritchie, CB, FRCVS, *Chairman*  
Major W. N. Scott, MRCVS  
J. E. N. Sloan, BSc  
H. V. Thompson, BSc, FIBiol  
Professor W. H. Thorpe, FRS  
W. L. Whitehouse, RD, MB, FRCS, MRCOG  
*Secretary:* M. R. Brambell, MA, PhD, MRCVS, FLS



### Breeding Policy Committee

*Terms of reference:* To report on the breeding records of animals in the Society's Collections and to make recommendations about any measures whereby the breeding of rare and other animals can be improved, and to advise Council on all matters relating to breeding research, including the appointment of research staff at the Wellcome Institute of Comparative Physiology.

#### *Members of Committee:*

Professor J. M. Dodd, BSc, PhD, FIBiol, FRSE  
J. F. D. Frazer, MA, DM, PhD  
Professor H. R. Hewer, OBE, MSc, ARCS  
Professor P. J. Huntingford, MD, FRCOG  
Professor D. Lacy, MA, PhD  
W. Lane-Petter, MA, MB, BChir, FIBiol  
J. S. Perry, PhD  
L. E. A. Rowson, OBE, MRCVS  
R. V. Short, PhD, MSc, BVSc, MRCVS  
H. V. Thompson, BSc, FIBiol, *Chairman*  
Professor A. N. Worden, MA, MRCVS, FRIC, FLS, FIBiol  
*Secretary:* I. W. Rowlands, PhD

### Committee of the Nuffield Institute of Comparative Medicine

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

#### *Members of Committee:*

Professor M. Abercrombie, FRS  
Professor A. O. Betts, MA, PhD, MRCVS  
Professor G. R. V. Born, MB, ChB, DPhil  
Professor G. M. Bull, MD, FRCP  
Raymond Greene, MA, DM, FRCP  
W. Lane-Petter, MA, MB, BChir, FIBiol  
Professor G. S. Nelson, MD, DSc, MB, ChB  
N. W. Pirie, MA, FRS  
J. E. N. Sloan, BSc  
Professor R. H. S. Thompson, MA, DM, DSc, FRCP, FCPATH  
Dame Janet Vaughan, DBE, DM, FRCP  
G. E. W. Wolstenholme, OBE, FRCP, FIBiol, *Chairman*  
*Secretary:* L. G. Goodwin, MB, BS, MRCP, BPharm, BSc, FIBiol

### Education Committee

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

#### *Members of Committee:*

Professor W. S. Bullough, DSc, *Chairman*  
J. D. Carthy, MA, PhD, FIBiol  
J. H. Elgood, MA  
Miss Barbara M. Gilchrist, PhD  
Oliver Impey, MA, DPhil  
A. G. Leutscher, BSc  
D. J. Stanbury, BSc, ARCS  
C. J. M. Trehwella, BSc  
Mrs P. C. G. Arthur  
P. G. Carter  
H. Jones, PhD  
*Secretary:* M. K. Boorer, BSc, DipE



### Publications Committee

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

*Members of Committee:*

E. H. Ashton, PhD  
Professor E. J. W. Barrington, MA, DSc, FRS, *Chairman*  
A. d'A. Bellairs, DSc, MRCS  
W. Nigel Bonner, BSc  
Professor A. J. E. Cave, MD, DSc, FRCS  
Francis C. Fraser, CBE, DSc, FRS  
J. P. Harding, PhD  
N. D. Riley, CBE  
H. N. Southern, MA  
Professor J. E. Webb, DSc, PhD  
Professor G. P. Wells, DSc, FRS  
C. A. Wright, DSc, PhD  
*Secretary:* H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol

### Zoological Record Committee

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

*Members of Committee:*

R. G. Fennah, MA  
P. Freeman, DSc, ARCS, FIBiol  
Francis C. Fraser, CBE, DSc, FRS, *Chairman*  
Professor J. Green, PhD  
J. P. Harding, PhD  
R. A. Neal, DSc, PhD  
John Smart, DSc  
Sir James Stubblefield, DSc, FRS  
Errol White, CBE, DSc, FRS  
*Secretary:* H. Gwynne Vevers, MBE, DPhil, FLS, FIBiol

### International Zoo Yearbook Committee

*Terms of reference:* To advise on the general policy, production, promotion and finance of the *Yearbook*.

*Members of Committee:*

Professor E. J. W. Barrington, MA, DSc, FRS  
Professor F. Bourlière, MD, LSc  
William G. Conway  
The Earl of Cranbrook, CBE, MA, TreasLS, *Chairman*  
Francis C. Fraser, CBE, DSc, FRS  
Geoffrey R. Greed  
W. Lane-Petter, MA, MB, BChir, FIBiol  
Raymond E. Legge  
Peter Scott, CBE, DSC  
Walter Van den bergh  
*Secretary:* J. Lucas, BSc, MIBiol

The President, Treasurer and Secretary are *ex officio* Members of all Committees.



# Staff

## Headquarters

*Director of Administration*: Miss E. M. Owen,  
OBE  
*Director of Zoos*: C. G. C. Rawlins, OBE, DFC  
*Architect*: J. W. Toovey, AADipl(Hons), FRIBA  
*Building Manager*: L. G. Taverner  
*Clerk of Works (New Zoo)*: M. Carding  
*Chief Accountant*: W. N. Pickford, MM, ACIS  
*Education Officer*: M. K. Boorer, BSc, DipEd  
*Establishment Officer*: M. E. McInerney  
*General Manager, Catering*: W. N. Hill, FHCI  
*Catering Manager London Zoo*: G. A. J. Perkins  
*Catering Manager Whipsnade*: J. Boswood  
*Public Relations Officer*: J. A. Dale  
*Television and Film Officer*: Miss Fae Hall, DPhil

## London Zoo

*Curator of Aquarium and Invertebrates, Acting  
Curator of Reptiles*: H. Gwynne Vevers,  
MBE, DPhil, FLS, FIBiol  
*Curator of Birds*: P. J. Olney, BSc, DipEd, FLS  
*Curator of Mammals*: M. R. Brambell,  
MA, PhD, MRCVS, FLS  
*Assistant to Curator of Aquarium*: G. J. Ashby  
*Gardens Executive*: J. Ward  
*Head Gardener*: H. Hemmings  
*Overseer of Birds*: D. G. Newson  
*Overseers of Mammals*: H. Vinall, T. Sangster  
*Supplies Officer*: C. H. Johns, DPA

## Scientific

*Director of Science*: L. G. Goodwin,  
MB, BS, MRCP, BPharm, BSc, FIBiol  
*Assistant Director of Science*: H. Gwynne Vevers,  
MBE, DPhil, FLS, FIBiol  
(See also Publications Department and London  
Zoo)  
*Nuffield Institute of Comparative Medicine*: See  
page 30  
*Wellcome Institute of Comparative Physiology*: See  
pages 31, 32  
*Pathologist*: I. F. Keymer, PhD, MRCVS  
*Veterinary Officer*: J. M. Hime, MRCVS, DVR  
*Hospital Superintendent*: A. T. Wilson  
*Librarian*: R. A. Fish, FLA  
*Publications Department*: See pages 27, 28

## Head Keepers

*Aquarium*: R. Dumbelton  
*Aquatic Birds and Birds of Prey*: A. E. Scrivener,  
AIAT  
*Bears*: S. Morton  
*Bird House*: W. G. R. Daines  
*Camels, Antelopes*: J. Lambden  
*Children's Zoo*: H. C. Dean  
*Elephant Pavilion and Aquatics*: W. G. Crompton,  
G. E. Hughes  
*Giraffes and Cattle*: H. G. N. Robinson  
*Insects*: R. P. Humphrys, AIAT  
*Lion House*: G. A. S. Figgett  
*Monkeys*: G. Callard  
*Parrot House and Eastern Aviary*: A. F. Shambrook  
*Pheasantry and Ostrich House*: R. Barrow  
*Reptiles*: D. J. Ball, AIAT  
*Small Mammals*: H. W. Styles



## STAFF CONTINUED

### Whipsnade Park

*Curator* : V. J. A. Manton, MRCVS  
*Park Manager* : O. C. Chamberlain  
*Veterinary Officer* : D. M. Jones,  
BSc, BVetMed, MRCVS  
*Assistant Accountant and Office Manager* : B. J. Iken  
*Clerk of Works* : R. J. B. Phillips  
*Head Gardener* : J. Folds  
*Senior Overseer* : F. L. Gladman  
*Overseer* : G. Stanbridge

### 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. Datlen  
*Bird Section* : R. Hazzard  
*Pheasantry* : B. Simmons  
*Children's Zoo* : P. C. Milne

### CONSULTING STAFF

*Consulting Architect* : Sir Hugh Casson, MA, RDI, FRIBA, FSIA  
*Consulting Landscape Architect* : Peter F. Shephard, BArch, FRIBA, AMTPI, FILA  
*Honorary Herpetologist* : A. d'A. Bellairs, DSc, MRCS  
*Honorary Helminthologist* : Professor J. J. C. Buckley, DSc  
*Honorary Veterinary Consultant* : Sir John Ritchie, CB, FRCVS  
*Adviser on Labour Relations* : E. Bishop, OBE  
*Medical Referee* : J. P. Horder, MA, MB, BCh, MRCP  
*Honorary Consultant Photographer* : W. G. Vanderson  
*Consultant Typographers* : Colin Banks, MSIA, John Miles



## Publications by Society's Staff and Research Workers

(including those published in collaboration)

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APPENDIX 4

# List of animals received

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

*Key*

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

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

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

		<i>Total number acquired</i>	<i>Number born or hatched in the Menagerie</i>
REGENT'S PARK	<b>Mammals</b>		
	<b>MARSUPIALIA</b>		
	<i>Didelphis marsupialis</i>	3	
	<i>Petaurus breviceps</i>		
	<i>Protemnodon agilis</i>	2	
	<i>Protemnodon bicolor</i> × <i>P. agilis</i>	1	1 (1)
	<i>Protemnodon rufogrisea</i>	2	
	<i>Dendrolagus goodfellowi</i>	1	
	<b>INSECTIVORA</b>		
	<i>Setifer setosus setosus</i>	3	3
	<i>Echinops telfairi</i>	5	3 (2)
	<b>CHIROPTERA</b>		
	<i>Cynopterus brachyotis</i>	1	
	<i>Pteropus giganteus</i>	5	
	<b>PRIMATES</b>		
	<i>Tupaia glis</i>	2	
	<i>Lemur catta</i>	2	
	<i>Lemur variegatus</i>	1	
	<i>Nycticebus coucang</i>	4	1 (1)
	<i>Arctocebus calabarensis</i>	1	1
	<i>Perodicticus potto</i>	1	1
	<i>Galago crassicaudatus</i>	2	2 (2)
	<i>Galago senegalensis</i>	3	



		Total number acquired	Number born or hatched in the Menagerie
<i>Galago alleni</i>	Allen's Bushbaby	1	1 (1)
<i>Aotus trivirgatus</i>	Douroucouli	1	1
<i>Callicebus moloch</i>	Dusky Titi	4	
<i>Siamiri sciureus</i>	Squirrel Monkey	1	
<i>Ateles belzebuth</i>	Long-haired Spider Monkey	1	
<i>Callithrix geoffroyi</i>	White-fronted Marmoset	5	5 (3)
<i>Callithrix argentata</i>	Silvery Marmoset	3	3 (1)
<i>Leontocebus oedipus</i>	Cotton-headed Tamarin	2	2 (2)
<i>Leontocebus illigeri</i>	Red-mantled Tamarin	10	2
<i>Macaca nemestrina</i>	Pig-tailed Macaque	2	2
<i>Macaca assamensis</i>	Assamese Macaque	1	1
<i>Macaca maurus</i>	Moor Macaque	1	1
<i>Papio anubis</i>	Olive Baboon	1	1 (1)
<i>Hylobates lar</i>	Lar Gibbon	1	1
<i>Pan troglodytes</i>	Chimpanzee	2	2
<i>Gorilla gorilla</i>	Gorilla (Lowland Form)	1	
EDENTATA			
<i>Myrmecophaga tridactyla</i>	Giant Anteater	2	
<i>Chaetophractus nationi</i>	Furry Armadillo	1	
PHOLIDOTA			
<i>Manis sp.</i>	Pangolin	1	
RODENTIA			
Sp. inc	Squirrels	2	
<i>Ratufa indica</i>	Indian Giant Squirrels	1	
<i>Ratufa bicolor</i>	Malayan Giant Squirrel	2	
<i>Dipodomys meriami</i>	Merriam's Kangaroo Rat	2	
<i>Phodopus sungorus</i>	Dwarf Hamster	3	3
<i>Cricetulus barabensis</i>	Chinese Hamster	3	3
<i>Clethrionomys gapperi</i>	Gapper's Red-backed Vole	6	3
<i>Lagurus lagurus</i>	Steppe Lemming	12	2 (2)
<i>Tatera indica</i>	Indian Gerbil	1	1
<i>Tatera sp.</i>	African Gerbil	6	
<i>Meriones unguiculatus</i>	Clawed Jird	7	7
<i>Meriones crassus</i>	Thomas's Jird	2	
<i>Apodemus sylvaticus</i>	Field Mouse	5	
<i>Rhabdomys pumilio</i>	Four-striped Rat	5	
<i>Mus minutoides</i>	Pygmy Mouse	7	7 (4)
<i>Acomys dimidiatus</i>	Arabian Spiny Mouse	9	9
G <i>Beamys major</i> (Dollamn) (Africa)	Long-tailed Pouched Rat	1	
G <i>Salpingotus michaelis</i> (Fitzgibbon) (Asia)	Dwarf Jerboa	6	
<i>Hystrix indica</i>	Indian Porcupine	6	6 (3)
<i>Atherurus africanus</i>	African Brush-tailed Porcupine	2	2 (1)
G <i>Trichys lipura</i> (Gunther) (Borneo and Sumatra)	Long-tailed Porcupine	4	
<i>Erethizon dorsatum</i>	North American Porcupine	2	
<i>Hydrochoerus hydrochaeris</i>	Capybara	1	
<i>Cuniculus paca</i>	Spotted Paca	1	
<i>Dasyprocta aguti</i>	Orange-rumped Agouti	1	1
<i>Myoprocta pratti</i>	Green Acouchi	11	11 (9)



		Total number acquired	Number born or hatched in the Menagerie
<i>Lagidium peruanum</i>	Mountain Chinchilla	1	
<i>Chinchilla laniger</i>	Chinchilla	3	
<i>Myocastor coypus</i>	Coypu	5	5
CARNIVORA			
<i>Canis familiaris</i>	Dingo × Singing Dog	5	5
<i>Alopex lagopus</i>	Arctic Fox	2	
<i>Vulpes vulpes</i>	Red Fox	2	
<i>Nyctereutes procyonoides</i>	Raccoon Dog	1	
<i>Cerdocyon thous</i>	Crab-eating Fox	3	3 (3)
<i>Lycaon pictus</i>	Cape Hunting Dog	1	
<i>Ursus arctos</i>	Brown Bear	1	1
<i>Thalarctos maritimus</i>	Polar Bear	1	1 (1)
<i>Helarctos malayanus</i>	Sun Bear	1	
<i>Nasua nasua</i>	Ring-tailed Coati	1	
<i>Ailurus fulgens</i>	Lesser Panda	5	
<i>Mustela putorius</i>	European Polecat	3	
<i>Eira barbara</i>	Tayra	1	
<i>Ictonyx striatus</i>	Zorilla	4	3
<i>Mellivora capensis</i>	Ratel	1	
<i>Lutra canadensis</i>	Canadian Otter	3	
<i>Hyaena hyaena</i>	Striped Hyaena	2	
<i>Felis concolor</i>	Puma	3	3
<i>Panthera leo</i>	Lion	4	4
<i>Panthera tigris</i>	Tiger	1	
<i>Panthera pardus</i>	Leopard	1	
PINNIPEDIA			
<i>Zalophus californianus</i>	Californian Sea Lion	2	
TUBULIDENTATA			
<i>Orycteropus afer</i>	Aardvark	1	
PERISSODACTYLA			
<i>Diceros bicornis</i>	Black Rhinoceros	1	1
ARTIODACTYLA			
<i>Sus scrofa</i>	Wild Boar	10	10 (6)
<i>Lama guanicoe</i>	Guanaco	1	1
<i>Camelus bactrianus</i>	Bactrian Camel	12	
<i>Cervus timorensis</i>	Timor Deer	3	3
<i>Cervus elaphus</i>	Red Deer	2	2 (1)
<i>Tragelaphus strepsiceros</i>	Greater Kudu	1	
<i>Bos grunniens</i>	Yak	2	1
<i>Bison bison</i>	American Bison	2	2
<i>Damaliscus dorcas</i>	Blesbok	3	1 (1)
<i>Connochaetes taurinus</i>	Brindled Gnu	3	3
<i>Antilope cervicapra</i>	Blackbuck	19	19 (10)
<i>Ammotragus lervia</i>	Barbary Sheep	11	11 (5)
<i>Ovis musimon</i>	Mouflon	4	4 (3)
<i>Ovis canadensis</i>	Big-horned Sheep	1	1



		Total number acquired	Number born or hatched in the Menagerie
DOMESTIC			
	Pigs	3	
	Cattle	2	
	Goats	18	18 (11)
	Sheep	7	7 (4)
Birds			
STRUTHIONIFORMES			
	<i>Struthio camelus</i>	Ostrich	2
SPHENISCIFORMES			
	<i>Aptenodytes patagonica</i>	King Penguin	4
CICONIIFORMES			
	<i>Ardea cinerea</i>	Common Heron	4 (1)
	<i>Bubulcus ibis</i>	Cattle Egret	1
	<i>Leptoptilus crumeniferus</i>	Marabou Stork	2
	<i>Threskiornis aethiopica</i>	Sacred Ibis	7
ANSERIFORMES			
	<i>Branta canadensis</i>	Canada Goose	4
	<i>Aix galericulata</i>	Mandarin Duck	8
s	<i>Mergus cucullatus</i> Linnaeus (North America)	Hooded Merganser	2
GALLIFORMES			
	<i>Rollulus roulroul</i>	Red-crested Wood Quail	5
	<i>Lophura nycthemerus</i>	Chinese Silver Pheasant	6 (1)
	<i>Gallus gallus jabouillei</i>	Tonkinese Jungle Fowl	4
	<i>Gallus sonnerati</i>	Sonnerat's Jungle Fowl	6 (1)
	<i>Catreus wallichii</i>	Cheer Pheasant	5
	<i>Syrmaticus ellioti</i>	Elliot's Pheasant	5 (1)
	<i>Syrmaticus humiae humiae</i>	Hume's Bar-tailed Pheasant	1
	<i>Chrysolophus pictus</i>	Golden Pheasant	6
	<i>Chrysolophus amherstiae</i>	Lady Amherst's Pheasant	6
	<i>Pavo cristatus</i>	Common Peafowl	4
GRUIFORMES			
	<i>Rallus aquaticus</i>	Water Rail	1
	<i>Tribonyx mortierii</i>	Tasmanian Waterhen	3
	<i>Porphyryla alleni</i>	Allen's Gallinule	1
	<i>Porphyrio poliocephalus poliocephalus</i>	Grey-headed Gallinule	6 (2)
CHARADRIIFORMES			
	<i>Scolopax rusticola</i>	Woodcock	1
	<i>Rissa tridactyla</i>	Kittiwake	1
	<i>Uria aalgae</i>	Guillemot	3
COLUMBIFORMES			
	<i>Columba guinea</i>	Speckled Pigeon	1
	<i>Streptopelia turtur</i>	Turtle Dove	1
	<i>Streptopelia roseogrisea</i>	Barbary Dove	1
	<i>Streptopelia vinacea vinacea</i>	Vinaceous Dove	1
	<i>Streptopelia chinensis chinensis</i>	Chinese Necklace Dove	3



		Total number acquired	Number born or hatched in the Menagerie
<i>Ocyphaps lophotes</i>	Crested Pigeon	4	4 (1)
<i>Goura victoria</i>	Victoria Crowned Pigeon	2	
PSITTACIFORMES			
<i>Kakatoe leadbeateri</i>	Leadbeater's Cockatoo	1	
<i>Nymphicus hollandicus</i>	Cockatiel	5	5 (1)
<i>Ara maracana</i>	Illiger's Macaw	1	
<i>Aratinga jandaya</i>	Jendaya Conure	1	
<i>Poicephalus senegalus senegalus</i>	Yellow-bellied Senegal Parrot	1	
<i>Psittacula krameri manillensis</i>	Lutino Ring-necked Parrakeet	4	
CUCULIFORMES			
<i>Tauraco leucotis leucotis</i>	White-cheeked Turaco	1	1 (1)
<i>Tauraco hartlaubi</i>	Hartlaub's Turaco	1	
<i>Gallirex porphyreolophus porphyreolophus</i>	Purple-crested Turaco	1	
STRIGIFORMES			
<i>Tyto alba alba</i>	Barn Owl	6	6
<i>Otus bakkamoena</i>	Scops Owl	2	
<i>Bubo capensis mackinderi</i>	Kenya Eagle Owl	3	3
<i>Bubo africanus cinerascens</i>	Abyssinian Spotted Eagle Owl	3	3
<i>Bubo africanus</i>	Spotted Eagle Owl	1	
<i>Pulsatrix perspicillata perspicillata</i>	Spectacled Owl	1	1
<i>Nyctea scandiaca</i>	Snowy Owl	2	2
<i>Athene noctua glaux</i>	North African Little Owl	1	
<i>Ciccaba woodfordi nuchalis</i>	West African Wood Owl	1	1
<i>Strix aluco sylvatica</i>	Tawny Owl	1	
APODIFORMES			
<i>Anthracothonax nigricollis</i>	Black-throated Mango Hummingbird	2	
<i>Chrysolampis mosquitus</i>	Ruby-crested Hummingbird	1	
<i>Hylocharis cyanus cyanus</i>	White-throated Sapphire Hummingbird	2	
<i>Amazilia leucogaster leucogaster</i>	White-bellied Emerald Hummingbird	1	
CORACIIFORMES			
s <i>Ispidina picta</i> (Boddaert) (Tropical Africa)	Pygmy Kingfisher	2	
<i>Dacelo novaeguineae</i>	Laughing Kingfisher	5	1
s <i>Merops nubicus</i> Gmelin (Central Africa)	Carmine Bee Eater	5	
<i>Aceros undulatus</i>	Wreathed Hornbill	2	
PICIFORMES			
<i>Megalaima haemacephala</i>	Coppersmith Barbet	2	
PASSERIFORMES			
s <i>Pitta guajana</i> (Müller) (Malaysia)	Banded Pitta	1	
s <i>Diaphoropyia jamesoni</i> Sharpe (Central Africa)	Jameson's Wattle-eye	1	



		Total number acquired	Number born or hatched in the Menagerie
<i>Rupicola peruviana</i>	Cock of the Rock	1	
<i>Laniarius barbarus erythrogaster</i>	Black-headed Gonolek	1	
<i>Lanius schach</i>	Rufous-backed Shrike	1	
<i>Copsychus malabaricus</i>	Indian Shama	1	
<i>Monticola cinclorhynchus</i>	Blue-headed Rock Thrush	1	
<i>Turdus dissimilis hortulorum</i>	Grey-backed Thrush	1	1
<i>Turdus iliacus</i>	Redwing	1	
<i>Garrulax leucolophus</i>	White-crested Jay Thrush	3	
<i>Garrulax erythrocephalus</i>	Red-headed Laughing Thrush	6	
<i>Leiothrix argentauris</i>	Silver-eared Mesia	2	
<i>Leiothrix lutea</i>	Pekin Robin	4	
<i>Dicaeum cruentatum</i>	Scarlet-backed Flowerpecker	1	
<i>Cyanocompsa cyanea</i>	Ultramarine Grosbeak	2	
<i>Tangara icterocephala</i>	Silver-throated Tanager	1	
<i>Icterus icterus</i>	Hangnest	1	
<i>Chloris chloris</i>	Greenfinch	1	1 (1)
<i>Richmondia cardinalis</i>	Virginian Cardinal	1	
<i>Fringilla coelebs</i>	Chaffinch	1	
<i>Carduelis spinus</i>	Siskin	2	
<i>Serinus mozambicus</i>	Green Singing Finch	2	
<i>Passerina ciris</i>	Nonpareil Bunting	2	
<i>Uraeginthus bengalus</i>	Cordon Bleu Finch	2	
<i>Taeniopygia castanotis</i>	Zebra Finch	6	
<i>Estrilda caerulescens</i>	Lavender Finch	2	
<i>Erythrura psittacea</i>	Parrot Finch	2	
<i>Padda oryzivora</i>	Java Sparrow	2	
<i>Sporopipes squamifrons</i>	Scaly-crowned Weaver	1	
<i>Ploceus velatus</i>	Masked Weaver	4	
<i>Quelea quelea</i>	Red-billed Weaver	1	
<i>Euplectes orix</i>	Orange Weaver	1	
<i>Aplonis panayensis strigatus</i>	Malayan Glossy Starling	1	1
<i>Gracula religiosa intermedia</i>	Greater Hill Mynah	6	
<i>Pyrrhocorax graculus</i>	Alpine Chough	3	
<b>DOMESTIC</b>			
	Budgerigar	2	
	Canary	1	
<b>Reptiles</b>			
<b>TESTUDINES</b>			
<i>Pseudemys scripta elegans</i>	Red-eared Terrapin	6	
<i>Pseudemys ornata ornata</i>	Ornate Terrapin	1	
<i>Pseudemys ornata callirostris</i>	Ornate Terrapin	1	
<i>Pseudemys floridana floridana</i>	Florida Terrapin	1	
<i>Graptemys kohnii</i>	Mississippi Map Terrapin	2	
<i>Clemmys caspica leprosa</i>	Spanish Terrapin	6	
<i>Emys orbicularis</i>	European Pond Tortoise	1	
<i>Terrapene ornata</i>	Painted Box Tortoise	1	
<i>Cuora amboinensis</i>	Amboina Box Tortoise	1	
<i>Kinixys belliana belliana</i>	Bell's Hinged Tortoise	5	
<i>Testudo graeca</i>	Mediterranean Spur-thighed Tortoise	17	



		Total number acquired	Number born or hatched in the Menagerie
<i>Testudo hermanni</i>	Hermann's Tortoise	4	
<i>Testudo marginata</i>	Margined Tortoise	1	
<i>Testudo kleinmanni</i>	Leith's Tortoise	1	
<i>Testudo horsfieldii</i>	Horsfield's Tortoise	4	
<i>Testudo elegans</i>	Starred Tortoise	3	
<i>Geochelone pardalis</i>	Leopard Tortoise	3	
<i>Testudo denticulata</i>	Jaboty Tortoise	1	
<i>Pelomedusa subrufa</i>	Helmeted Terrapin	8	
<i>Podocnemis unifilis</i>	Bearded Greaved Tortoise	1	
<i>Chelodina longicollis</i>	Long-necked Terrapin	1	
<i>Trionyx ferox</i>	Spiny Soft-shelled Turtle	1	
CROCODILIA			
<i>Crocodylus cataphractus</i>	African Long-nosed Crocodile	1	
<i>Crocodylus niloticus</i>	Nile Crocodile	1	
<i>Crocodylus porosus</i>	Estuarine Crocodile	2	
<i>Crocodylus palustris</i>	Marsh Crocodile	2	
s <i>Crocodylus moreletii</i> Dumeril and Bibron (Guatemala, British Honduras)	Morelet's Crocodile	2	
<i>Alligator mississippiensis</i>	Mississippi Alligator	1	
<i>Caiman crocodilus</i>	Spectacled Cayman	1	
SAURIA			
<i>Gymnodactylus scaber</i>	Rough-skinned Gecko	2	
s <i>Hemidactylus triedrus lankae</i> (Deraniyagala) (Ceylon)		2	
<i>Hemidactylus brookii</i>	Brook's Agama	12	
<i>Hemidactylus leschenaultii</i>	Leschenault's Gecko	6	2 (2)
<i>Anolis equestris</i>	Giant Cuban Anolis	2	
<i>Iguana iguana</i>	Common Iguana	1	
<i>Sauromalus obesus</i>	Chuckwalla	2	
s <i>Ceratophora tennentii</i> Günther (Ceylon)		2	
<i>Agama agama</i>	Margouillat Agama	12	
<i>Uromastyx acanthinurus</i>	Bell's Dabb Lizard	3	
<i>Chamaeleo chamaeleon</i>	Common Chameleon	1	
<i>Chamaeleo dilepis</i>	Flap-necked Chameleon	1	
<i>Tiliqua gigas</i>	New Guinea Skink	6	5
s <i>Mabuya blandingii</i> (Hallowell) (W. Africa)	Blanding's Skink	5	
<i>Lacerta viridis</i>	Green Lizard	1	
<i>Tupinambis nigropunctatus</i>	Black-pointed Tegu	1	
<i>Varanus exanthematicus</i>	Bosc's Monitor	1	
<i>Varanus flavescens</i>	Yellow Monitor	1	
<i>Varanus bengalensis</i>	Bengal Monitor	1	
<i>Varanus nebulosus</i>	Clouded Monitor	2	
<i>Varanus salvator</i>	Two-banded Monitor	1	
SERPENTES			
<i>Python sebae</i>	African Python	1	
<i>Python regius</i>	Royal Python	7	
<i>Python curtus</i>	Blood Python	1	
<i>Corallus enydris cookii</i>	Cooke's Tree Boa	1	
<i>Corallus enydris enydris</i>	Garden Tree Boa	1	



		Total number acquired	Number born or hatched in the Menagerie
s	<i>Candoia bibroni</i> (Dumeril and Bibron) (Fiji, Tonga, San Cristoval)		
	<i>Boa constrictor</i>	3	
	<i>Charina bottae</i>	3	
	<i>Cylindrophis rufus</i>	1	
SS	<i>Natrix natrix persa</i> (Pallas) (S. Caspian Sea, Caucasus, Turkey, Balkans)	2	
	<i>Natrix tessellata</i>	2	
	<i>Thamnophis sirtalis</i>	3	
	<i>Boaedon fuliginosus</i>	1	
s	<i>Mehelya crossii</i> (Boulenger) (W. Africa)		
	<i>Ptyas mucosus</i>	1	
	<i>Dryadophis boddaertii</i>	1	
	<i>Spilotes pullatus</i>	1	
	<i>Elaphe guttata</i>	2	
	<i>Elaphe obsoleta quadrivittata</i>	6	4
SS	<i>Elaphe obsoleta rossalleni</i> Neill (Florida, USA)		
	<i>Coluber jugularis</i>	1	
	<i>Coluber ravergieri ravergieri</i>	1	
	<i>Pituophis catenifer deserticola</i>	1	
	<i>Lampropeltis getulus californiae</i>	2	
G	<i>Chilomeniscus cinctus</i> Cope (Arizona, USA; N. Mexico)		
	<i>Crotaphopeltis hotamboeia</i>	2	
	<i>Malpolon monspessulana</i>	1	
	<i>Psammophis sibilans</i>	1	
	<i>Ahaetulla mycterizans</i>	2	
	<i>Thelotornis kirtlandii</i>	2	
	<i>Dispholidus typus</i>	5	
	<i>Chrysopelea ornata</i>	2	
G	<i>Pelamis platurus</i> (Linnaeus) (Tropical waters)		
	<i>Naja haje</i>	1	
	<i>Naja melanoleuca</i>	1	
	<i>Naja naja</i>	2	
	<i>Pseudohaje goldii</i>	7	7
	<i>Pseudohaje goldii</i>	1	
	<i>Dendroaspis angusticeps</i>	2	
	<i>Dendroaspis polylepis</i>	2	
SS	<i>Vipera ammodytes meridionalis</i> Boulenger (Albania, Greece, Turkey, Syria)		
	<i>Vipera lebetina schweizeri</i> Werner (Greek Islands of Milos, Kimolos, Polinos, Siphonos, Kythnos)	2	
s	<i>Atheris desaixi</i> Ashe (Kenya)		
	<i>Agkistrodon piscivorus</i>	11	
	<i>Agkistrodon contortrix mokeson</i>	1	
	<i>Sistrurus miliarius barbouri</i>	8	4 (1)
		2	2
<b>Amphibians</b>			
s	<i>Bufo blombergi</i> Myers and Funkhouser (Colombia)		
	<i>Bufo regularis</i>	4	
		12	



		Total number acquired	Number born or hatched in the Menagerie
<i>Hyla aurea</i>	Golden Hyla	4	
<i>Gastrotheca marsupiata</i>	Marsupial Frog	6	
<i>Rana (Dicroglossus) occipitalis</i>	Giant Water Frog	12	
<i>Rana (Hylarana) galamensis</i>	Galam Lake Frog	2	
<i>Rana (Ptychadena) oxyrhynchus</i>	Sharp-nosed Frog	1	
<i>Rana (Hylarana) temporalis</i>		2	
<i>Rhacophorus leucomystax maculatus</i>	Chunam Frog	3	
<i>Rhacophorus microtypanum</i>		2	
<i>Rhacophorus cruciger eques</i>		1	
<i>Chiromantis petersi</i>	Peters' Tree Frog	1	
G <i>Ramanella obscura</i> (Günther) (Ceylon)		1	

#### Fishes new to the collection

<i>Umbra limi</i> (Kirtland). Eastern USA
<i>Notropis lutrensis</i> (Baird and Girard). Northern USA
<i>Trachurus trachurus</i> (Linnaeus). East Atlantic and Mediterranean
<i>Platax orbicularis</i> (Forskål). Indo-West Pacific
<i>Tilapia melanopleura</i> A. Dum. West Africa
<i>Cichlasoma citrinellum</i> (Günther). Central America
<i>Sternarchus albifrons</i> (Linnaeus). South America (Amazon basin)

#### WHIPSNADE PARK

##### Mammals

##### MARSUPIALIA

<i>Protemnodon rufogrisea</i>	Bennett's Wallaby	104	104 (8)
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##### PRIMATES

<i>Galago crassicaudatus</i>	Thick-tailed Bushbaby	2	
<i>Aotus trivirgatus</i>	Douroucouli	1	
<i>Pan troglodytes</i>	Chimpanzee	5	

##### RODENTIA

<i>Cynomys ludovicianus</i>	Prairie Marmot	20	20 (15)
<i>Glis glis</i>	Fat Dormouse	1	
<i>Hystrix indica</i> × <i>H. cristata</i>	Crested Porcupine	4	
<i>Dolichotis patagonum</i>	Mara	1	1
<i>Dasyprocta punctata</i>	Central American Agouti	2	2

##### CARNIVORA

<i>Canis lupus occidentalis</i>	Canadian Timber Wolf	9	9
<i>Fennecus zerda</i>	Fennec Fox	8	
<i>Lycaon pictus</i>	Cape Hunting Dog	16	13 (13)
<i>Tremarctos ornatus</i>	Spectacled Bear	1	
<i>Ursus arctos</i>	Brown Bear	4	4
<i>Ursus arctos middendorffi</i>	Kodiak Bear	2	2 (2)
<i>Thalarctos maritimus</i>	Polar Bear	2	2 (2)
<i>Nasua nasua</i>	Ring-tailed Coati	3	
<i>Ailurus fulgens</i>	Red Panda	2	
<i>Felis concolor</i>	Puma	2	
<i>Acinonyx jubatus</i>	Cheetah	1	



		Total number acquired	Number born or hatched in the Menagerie
<b>PERISSODACTYLA</b>			
<i>Equus przewalskii</i>	Przewalski's Wild Horse	2	2
<i>Equus zebra hartmannae</i>	Hartmann's Mountain Zebra	1	
<i>Asinus hemionus onager</i>	Persian Onager	3	3 (2)
<i>Asinus hemionus kulan</i>	Turkmen Wild Ass	1	1
<b>ARTIODACTYLA</b>			
<i>Tayassu tajacu</i>	Collared Peccary	3	3
<i>Choeropsis liberiensis</i>	Pygmy Hippopotamus	1	
<i>Lama glama</i>	Llama	10	9 (1)
<i>Lama guanicoe</i>	Guanaco	2	1
<i>Dama dama</i>	Fallow Deer	25	25 (9)
<i>Axis axis</i>	Spotted Deer	10	10 (6)
<i>Axis porcinus</i>	Hog Deer	11	11
<i>Cervus duvauceli</i>	Swamp Deer	1	1
<i>Cervus nippon taiouanus</i>	Formosan Deer	13	13 (6)
<i>Cervus elaphus</i>	Red Deer	19	19 (9)
<i>Cervus elaphus canadensis</i>	Wapiti	3	3 (2)
<i>Elaphurus davidianus</i>	Père David's Deer	4	4
<i>Alces alces</i>	Moose	1	1
<i>Rangifer tarandus</i>	Reindeer	1	1
<i>Hydropotes inermis</i>	Chinese Water Deer	30	30
<i>Tragelaphus spekei</i>	Sitotunga	1	1
<i>Boselaphus tragocamelus</i>	Nilgai	4	4 (4)
<i>Syncerus caffer</i>	African Buffalo	2	2
<i>Bison bonasus</i>	European Bison	1	1
<i>Bison bison</i>	North American Bison	2	2
<i>Damaliscus dorcas</i>	Blesbok	2	2
<i>Connochaetes taurinus</i>	Brindled Gnu	2	2
<i>Gazella thomsoni</i>	Thomson's Gazelle	8	8 (2)
<i>Ovibos moschatus</i>	Musk Ox	2	2
<i>Ovis musimon</i>	Mouflon	7	7
<b>DOMESTIC</b>			
	Ponies	10	6
	Pygmy Donkey	2	
	Arabian Camel	4	4 (2)
	Ankole Oxen	7	7 (1)
	White Goats	14	14 (8)
	Four-horned Sheep	30	30 (23)
<b>Birds</b>			
<b>RHEIFORMES</b>			
<i>Rhea americana</i>	Common Rhea	1	
<b>CASUARIIFORMES</b>			
<i>Casuarus casuarus</i>	Two-wattled Cassowary	2	
<b>SPHENISCIFORMES</b>			
<i>Aptenodytes patagonica</i>	King Penguin	8	
<b>PELECANIFORMES</b>			
<i>Pelecanus onocrotalus</i>	Eastern White Pelican	2	



		Total number acquired	Number born or hatched in the Menagerie
<i>Pelecanus philippensis</i>	Grey Pelican	1	
<i>Pelecanus crispus</i>	Dalmatian Pelican	2	
<i>Pelecanus erythrorhynchos</i>	American White Pelican	2	
<i>Pelecanus occidentalis</i>	Brown Pelican	3	
<i>Phalacrocorax carbo</i>	Cormorant	1	
CICONIIFORMES			
<i>Ciconia ciconia</i>	White Stork	21	
<i>Ciconia nigra</i>	Black Stork	5	
<i>Ephippiorhynchus senegalensis</i>	Saddle-billed Stork	2	
<i>Leptoptilos crumeniferus</i>	Marabou Stork	12	
<i>Phoenicopterus ruber roseus</i>	Greater Flamingo	6	
<i>Phoenicopterus ruber ruber</i>	Rosy Flamingo	8	
ANSERIFORMES			
<i>Coscoroba coscoroba</i>	Coscoroba Swan	2	
<i>Cygnus atratus</i>	Black Swan	6	6
<i>Cygnus melancoryphus</i>	Black-necked Swan	2	
<i>Anser canagicus</i>	Emperor Goose	4	
<i>Branta canadensis</i>	Canada Goose	43	
<i>Branta leucopsis</i>	Barnacle Goose	3	3
<i>Branta ruficollis</i>	Red-breasted Goose	9	8 (2)
<i>Cereopsis novae-hollandiae</i>	Cereopsis Goose	1	1
<i>Alopochen aegyptiacus</i>	Egyptian Goose	3	3
<i>Tadorna cana</i>	South African Shelduck	3	3 (1)
<i>Tadorna tadorna</i>	Common Shelduck	2	
<i>Aix sponsa</i>	Carolina Duck	18	18
<i>Aix galericulata</i>	Mandarin Duck	1	1 (1)
<i>Lophonetta specularioides</i>	Crested Duck	8	8
<i>Anas penelope</i>	Common Wigeon	4	
<i>Anas crecca crecca</i>	Common Teal	4	
<i>Anas acuta acuta</i>	Common Pintail	4	
<i>Anas clypeata</i>	Shoveler	6	
<i>Aythya fuligula</i>	Tufted Duck	2	
FALCONIFORMES			
<i>Sagittarius serpentarius</i>	Secretary Bird	2	
GALLIFORMES			
<i>Francolinus erckeli</i>	Erckel's Francolin	1	
<i>Lophophorus impejanus</i>	Impeyan Pheasant	4	
<i>Lophura nycthemerus</i>	Chinese Silver Pheasant	11	9 (2)
<i>Syrmaticus ellioti</i>	Elliot's Pheasant	5	
<i>Syrmaticus humiae humiae</i>	Hume's Bar-tailed Pheasant	2	
<i>Syrmaticus mikado</i>	Mikado Pheasant	2	
<i>Chrysolophus pictus</i>	Golden Pheasant	11	10
<i>Chrysolophus amherstiae</i>	Lady Amherst's Pheasant	1	1
<i>Pavo cristatus</i>	Common Peafowl	21	20
<i>Numida meleagris</i>	Helmeted Guineafowl	29	27
<i>Meleagris gallopavo</i>	North American Turkey	11	10 (1)
GRUIFORMES			
<i>Bugeranus carunculatus</i>	Wattled Crane	1	



		Total number acquired	Number born or hatched in the Menagerie
<i>Anthropoides paradisea</i>	Stanley Crane	4	
<i>Balearica pavonina regulorum</i>	South African Crowned Crane	1	
<i>Psophia crepitans</i>	Common Trumpeter	2	
<i>Porphyrio poliocephalus poliocephalus</i>	Grey-headed Gallinule	1	
COLUMBIFORMES			
<i>Ptilinopus porphyraceus porphyraceus</i>	Purple Crowned Pigeon	3	
<i>Goura scheepmakeri sclaterii</i>	Sclater's Crowned Pigeon	1	
<i>Goura victoria</i>	Victoria Crowned Pigeon	2	
PSITTACIFORMES			
<i>Domicella garrula garrula</i>	Scarlet Lory	2	
<i>Kakatoe galerita galerita</i>	Greater Sulphur-crested Cockatoo	4	
<i>Kakatoe sulphurea sulphurea</i>	Lesser Sulphur-crested Cockatoo	3	
<i>Kakatoe sulphurea citrinocristata</i>	Citron-crested Cockatoo	1	
<i>Kakatoe moluccensis</i>	Moluccan Cockatoo	2	
<i>Ara ararauna</i>	Blue and Yellow Macaw	2	
<i>Ara macao</i>	Scarlet Macaw	3	
<i>Ara chloroptera</i>	Green-winged Macaw	5	
<i>Pyrhura picta picta</i>	Blue-winged Conure	2	
<i>Amazona amazonica amazonica</i>	Orange-winged Parrot	1	
<i>Psittacus erithacus erithacus</i>	Grey Parrot	3	
<i>Lorius roratus</i>	Eclectus Parrot	2	
<i>Psittacula eupatria nipalensis</i>	Alexandrine Parrakeet	3	
<i>Psittacula krameri manillensis</i>	Indian Ring-necked Parrakeet	3	
<i>Psittacula cyanocephala cyanocephala</i>	Blossom-headed Parrakeet	1	
<i>Polytelis swainsonii</i>	Barraband's Parrakeet	1	1
<i>Polytelis alexandrae</i>	Queen Alexandra's Parrakeet	2	
<i>Platycercus elegans</i>	Pennant's Parrakeet	1	
<i>Platycercus eximius ceciliae</i>	Golden-mantled Rosella Parrakeet	3	
<i>Neophema pulchella</i>	Turquoise Grass Parrakeet	2	
STRIGIFORMES			
<i>Bubo capensis mackinderi</i>	Kenya Eagle Owl	3	
PASSERIFORMES			
<i>Urocissa erythrorhyncha occipitalis</i>	Red-billed Blue Magpie	2	
<i>Gracula religiosa indica</i>	Southern Hill Mynah	2	
DOMESTIC			
	Budgerigar	24	
	Swallow Pigeon	4	
	Chinese Goose	1	
	Jungle Fowl	30	30
Reptiles			
SERPENTES			
<i>Python regius</i>	Royal Python	2	



## List of donors of animals to the Society

## REGENT'S PARK

- Andrews, D., 2 Crested Newts  
 Ansell, W. F. H., 1 Long-tailed Pouched Rat, 4 Four-striped Rats  
 Ashe, J., 1 Egyptian Cobra, 1 Black-and-white Cobra, 2 Boomslangs, 1 Kenya Bush Viper  
 Barlow, Mrs, 1 Virginian Cardinal  
 Barnes, Mrs J. M., 1 Ornate Terrapin  
 Barnes, Mrs, 1 Tawny Owl  
 Bates, B. F., 1 European Catfish, 3 Tench, 11 Bream  
 Bell, Mrs M., 2 Mediterranean Spur-thighed Tortoises, 1 Hermann's Tortoise  
 Benfield, Mrs, 2 Spanish Terrapins  
 Bird, J. P., 1 Pike  
 Blackshaw, G., 3 Red-eared Terrapins, 1 Florida Terrapin  
 Booth, A., 1 Scarlet-backed Flowerpecker  
 Bowyer, J., 1 Thomas's Jird, 3 Gappers Red-backed Voles, 8 Steppe Lemmings, 1 Russell's Sand Boa, 1 Caspian Terrapin, 1 European Pond Tortoise, 1 Crested Newt, 1 frog, collection of Common Toads  
 Bradfield, Miss, 1 Nepal Hill Mynah  
 Brooker, F., 1 Indian Giant Squirrel  
 Bruderer, Mr and Mrs, 6 Zebra Finches  
 Carrington, Mrs B., 1 Spanish Terrapin  
 Charnock-Wilson, J. P., 1 Spotted Paca, 1 Ring-tailed Coati, 1 Morelet's Crocodile  
 Chessington Zoo, 3 Polecats  
 Clarke, Mrs, 1 Squirrel Monkey  
 Clevedon, L., 1 Four-striped Rat  
 Collins, R., 1 Chinchilla  
 Cooper, Miss B., 1 Mediterranean Spur-thighed Tortoise  
 Cooper, Dr K. E., 2 Common Tree Shrews  
 Craine, R., 2 Lilford's Wall Lizards  
 Cranbrook, The Earl of, 1 Malayan Fruit Bat, 3 Indian Flying Foxes  
 Croming, S. R., 1 Senegal Bushbaby  
 Dance, A. J., 1 Red-eared Terrapin  
 Darlington, Miss J., 2 whip scorpions, 3 centipedes, 2 land crabs, 1 culture of mites  
 Davidge, Mrs S., 2 Masked Weavers  
 Dolphin, D., Collection of fish  
 Double, K., 1 Red Fox  
 Dove, P. R., 1 Bell's Dabb Lizard  
 Edge, Mrs E., 1 Mediterranean Spur-thighed Tortoise  
 Elderfield, Mrs E., 1 Mediterranean Spur-thighed Tortoise  
 Ellis, M., 1 Allen's Gallinule  
 England, Captain K. W., 6 Australian Sea-anemones (*Oulactis muscosa*)  
 England, Mr, 1 Rufous-backed Shrike  
 Evans, M., 2 Long-nosed Whip Snakes  
 Fahrner, S., 1 Common Toad  
 Feldhammer, B., 3 Helmeted Terrapins, 12 Brook's Geckos, 12 Margouillat Agamas, 5 Blanding's Skinks, 2 Royal Pythons, 1 File Snake, 1 African Sand Snake, 12 Common African Toads, 12 Giant Water Frogs, 2 Galam Lake Frogs, 1 Sharp-nosed Frog, 2 *Arthroleptis* sp., 6 land snails, 4 orb spiders, 3 crab spiders, 1 mantid  
 Fennimore, M. B., 2 Mississippi Map Terrapins, 1 Red-eared Terrapin  
 Fitzpatrick, J., 1 Royal Python  
 Fletcher, J., 1 European Pond Tortoise, 1 Green Lizard  
 Fraylich, P., 2 Red-eared Terrapins, 1 Green Lizard  
 Frith, C., 1 New Guinea Skink  
 Fuhrhop, W., 1 Mediterranean Spur-thighed Tortoise  
 Furness, B., 4 mantid oothecae  
 Garland, Mrs E. J., 1 Mediterranean Spur-thighed Tortoise  
 Gauld, Mrs D., 1 Mediterranean Spur-thighed Tortoise  
 Glencross, Mr, 2 Bare-footed Scops Owls  
 Goodman, G. F., 1 Grass Snake  
 Goudge, B., 1 Chaffinch, 2 Siskins  
 Gumbrell, R. R., 2 Steppe Lemmings  
 Hammer, T., 1 Cainana Rat Snake  
 Hankey, Mrs, 1 Malayan Sun Bear  
 Harrop, Mr, 1 Nepal Hill Mynah  
 Harvey, Mrs, stick-insects  
 Hatfield, J., 3 Fiji Boas  
 Higgins, Mrs L., 2 Mediterranean Spur-thighed Tortoises



- Hindle, Dr E., 1 Peters' Tree Frog  
Hollands, P., 1 Benegal Monitor  
Hollowell, Mrs M. L. J., 1 Spanish Terrapin  
Holt, Mrs, 2 Nepal Hill Mynahs  
Hooker, A., stick-insects  
Horniman Museum, 1 Mississippi Alligator  
Hubble, D., Malayan cockroaches  
Huggins, A. Walford, stick-insect eggs, mantid oothecae  
Issacs, Mrs B. A., 2 Bosc's Monitors  
Jarvis, P., 4 Brown *Acara*  
Jabale, M., 1 Palm Spider  
Jones, Miss A., 1 Poplar Hawk Moth  
Jurak, Mr, 1 Common Chameleon  
Kensington Police, 1 California King Snake  
Kenya National Museum, 2 Leopard Tortoises, 4 Bell's Hinged Tortoises  
King's College, London, 6 *Necturus*, 2 *Amphiuma*  
Kneale, H., 1 Kittiwake  
Kuwait Oil Company, 1 Yellow-bellied Sea Snake  
Lambert, M., 1 Montpellier Snake, 3 Bell's Dabb Lizards  
Landon, Mrs N., 2 Spanish Terrapins  
Landseer, L. M., 1 North African Little Owl  
Lawrence, N. J., 1 Goldfish, 1 Higoï Carp  
Leatham, Mrs, 1 Illigers Macaw  
Long, Miss D. A., 1 Red-eared Terrapin  
Lundy, W., 1 Blood Python  
McGlashan, A. J., 1 Senegal Bushbaby  
Mack, Mrs M., 1 Leith's Tortoise  
HE the Malaysian High Commissioner, 6 *Clarias*  
Malham, Mrs, 1 Nepal Hill Mynah  
Manson-Bahr, Dr, 6 African Gerbils  
Marshall, R. T., 1 Yellow Monitor  
Meadows, Miss, stick-insects  
Milbourne, Miss J., 1 Turtle Dove  
Mills, E., 4 jockey spiders, 7 centipedes, 4 orb spiders, 2 bag worms, 2 funnel-web spiders, 1 desert scorpion, 1 mole cricket, 4 wolf spiders  
Moreley, Mrs M., stick-insects  
Moscow Zoo, 2 Arctic Foxes  
Moulins, A. des, stick-insect eggs  
Mumford, G. S. C., 7 Lobsters  
Newmark, J. and G., Butler, P., Zilberman, S., 8 Moreau's Geckos, 8 Margouillat Agamas, 5 High-casqued Chameleons, 1 Grant's Skink, 1 African House Snake, 6 Green Toads, 3 Common African Toads, 1 Sedge-painted Frog, 8 Short-horned Grasshoppers and 4 nymphs, 4 Long-headed Grasshoppers, 16 millipedes, 1 desert beetle, 1 Giant Land Snail, 2 assassin bugs, 2 mantids, 1 stick mantid, 2 bird-eating spiders, 11 spiders  
Palmer's Pet Store, 1 Woodcock  
Parker, S., 1 Yellow-bellied Senegal Parrot  
Payne, N. S., 1 European Red Fox  
Perrie, W. R. J., 1 Herald Snake, 1 Flap-necked Chameleon, 1 Agama, 1 Skink  
Pilling, Miss, 2 Merriams Kangaroo Rats  
Pleau, Mr, 1 Long-haired Spider Monkey  
Port of London Health Authority, 1 Boddaert's Snake  
Pratt, D., 1 Thomas's Jird  
Psychiatric Rehabilitation Association, 1 Senegal Bushbaby  
Qatar, The Sheik of, 1 Ratel  
Queen's Park Infants School, 1 White Axolotl, 2 newts, 2 frogs  
Randle, S., 1 Mediterranean Spur-thighed Tortoise  
Ranger, Mrs, 1 Jendaya Conure  
Raymond, Mrs D., 1 Margined Tortoise  
Reemer, H., 2 Mediterranean Spur-thighed Tortoise  
Riva, P. and D., 2 Boa Constrictors, 2 Spanish Terrapins  
RSPCA, Heathrow, 1 Helmeted Terrapin, 4 Spanish Terrapins, 1 Red-eared Terrapin  
San Diego Zoo, 2 Ring-tailed Lemurs  
Saunders, Mrs, 1 Budgerigar  
Savill, Mrs B., 1 Mediterranean Spur-thighed Tortoise  
Schmidt, Dr and Mrs P., 1 Morelet's Crocodile  
Scindia of Gwalior, The Maharajah, 1 Leopard  
Scott, W. F., 1 bird-eating spider  
Scrivener, Mrs D., 1 Rough-skinned Gecko  
Searle, Dr K. C., 1 Slow Loris  
Shaw, Mrs M., 2 Silver-eared Mesias, 2 Pekin Robins, 1 Hangnest  
Skinner, Mr, 1 bird-eating spider  
Smith, D., 1 Spectacled Cayman  
Spurling, Miss C., stick-insect eggs  
Sore, R., 1 Garden Tree Boa  
Stacey, Miss C., 2 Lavender Finches, 2 Cordon-bleu Finches, 1 Pekin Robin  
Stebbing, P., 2 Common Tench  
Stocker, G., 3 scarab beetles  
Sutton, A. C., 2 scorpions, stick-insects  
Swale, C. J., 3 Goldfish  
Tillmer, P. R., 1 Common Iguana  
Trilley, R., 1 Cooke's Tree Boa  
Tripp, D., 2 squirrels  
Tulane University, 4 Titi Monkeys  
Verlander, Mr, 1 Nepal Hill Mynah, 1 Pekin Robin  
Watkins, T., 1 albino *Clarias*  
Webb, P., 1 Long-horned Grasshopper  
Westfield College, 1 Boa Constrictor  
White Fish Authority, 5 Sole, 4 Plaice, 5 Oysters, 6 Portuguese Oysters  
Williams, Mrs A., 1 Golden Pheasant  
Williams, Miss H., 1 Redwing



Wood, S., Stag Beetles  
Zuurdeeg, W., 1 Ornate Terrapin, 1 Painted Box  
Tortoise, 1 Bell's Hinged Tortoise, 1 Mediter-  
ranean Spur-thighed Tortoise, 3 Hermann's  
Tortoises, 4 Horsfield's Tortoises, 1 Leopard  
Tortoise, 1 Jaboty Tortoise, 2 Helmeted Terra-  
pins

#### WHIPSNADE PARK

Agriculture, Fisheries and Food, Ministry of, 1  
Ground Squirrel  
Alitalia Airways, 1 Pygmy Donkey  
Animal Behaviour Research Group, Oxford, 1  
Lesser Black-backed Gull  
Bagwall, Mrs M., 1 Hermann's Tortoise  
Baillie, The Lady, 43 Canadian Geese  
Beaumont, Mrs C. R., 1 Scarlet Macaw  
Chorleywood College, 7 Muscovy Ducklings, 9  
cockerels  
Church, R., 1 Grey Parrot  
Clarke, M., 12 Budgerigars  
Cole, Mrs G., 5 Guinea Pigs  
Draper, P. S., 2 Muscovy Ducks and 10 ducklings

Elliott, Mrs J. M., 1 Grey Parrot  
Firbank, R., 1 Orange-winged Parrot  
Fletcher, G. A., 1 Chinese Goose  
Fryer, Mrs R. E., 1 Indian Ring-necked Parrakeet  
Goldsmith, Mrs R., 1 Blossom-headed Parrakeet  
Grizzell, Miss T., 1 Southern Hill Mynah  
Harris, M., 1 tortoise  
Hedge, Mrs J., 3 tortoises  
Hibbert, I., 37 stick-insects  
Hesketh, A., 1 Lesser Sulphur-crested Cockatoo  
Hutchens, Mrs M., 1 Mallard Duck  
Johnston, Mrs F. W., 1 Common Peafowl  
Kelly, A., 2 goats  
Newbon, Mrs J., 1 Himalayan Rabbit  
Peters, E., 2 Helmeted Guineafowl  
Ridant, M. S., 1 Fat Dormouse  
Rivaj, J. P., 4 Pekin Ducks  
RSPCA, Luton, 1 Golden Pheasant  
Rose, Miss E., 1 Grey Parrot  
Rubenis, Mrs J., 1 Cormorant  
Sohl, Mr and Mrs R., 1 goose  
Tisbury, Mrs P., 1 Southern Hill Mynah  
van den Brink, F., 1 Douroucouli



# Donations to the Zoological Record Fund

	£	s.	d.
American Entomological Society	20	13	8
American Museum of Natural History	208	5	11
American Ornithologists' Union	20	13	9
American Society of Ichthyologists and Herpetologists	100	1	8
American Society of Mammalogists	166	16	1
Anonymous	100	0	0
Auckland Institute and Museum	5	5	0
British Museum (Natural History)	450	0	0
British Ornithologists' Club	5	5	0
British Ornithologists' Union	16	0	0
British Trust for Ornithology	3	3	0
California Academy of Sciences	11	11	8
Canadian Society of Zoologists	19	4	4
Challenger Society	5	5	0
Conchological Society of Great Britain and Ireland	2	0	0
Duke University, Department of Zoology	20	14	5
Entomological Society of America	83	7	7
Field Museum of Natural History	20	13	4
Geological Society of London	5	5	0
Linnean Society of London	20	0	0
Liverpool School of Tropical Medicine	3	3	0
London School of Hygiene and Tropical Medicine	2	2	0
Malacological Society of London	2	2	0
The Mammal Society of the British Isles	5	5	0
New York Entomological Society	20	14	2
Paleontological Society	20	14	7
Royal Entomological Society	10	0	0
Royal Society of Tropical Medicine and Hygiene	5	5	0
Society of Systematic Zoology	124	19	5
Transvaal Museum	5	5	0
Wellcome Research Laboratories	17	10	0
Witwatersrand, University of the	2	0	0
	<hr/>		
	£1,503	5	7
	<hr/>		



## Books presented to the Library

BACKHOUSE, K. M.  
HORNIMAN MUSEUM AND LIBRARY  
BRITISH MUSEUM (NATURAL  
HISTORY), TRUSTEES OF

CANIVENC, R.

CLASSEY LTD, E. W.

DAVID DAVIES MEMORIAL INSTITUTE  
OF INTERNATIONAL STUDIES

DAVIES, MRS G.  
HARRIS, C. J.

HICKLING, DR C. F.  
IMPERIAL COLLEGE, LONDON

KALABUKHOV, N.

MAYNARD, K.

MONTAGU, THE HON. I.  
MUGLISTON, E.  
NAIRNE, S.  
INSTITUTE OF NEUROLOGY

ROYAL POSTGRADUATE MEDICAL  
SCHOOL, HAMMERSMITH HOSPITAL  
SMART, J.

SWEENEY, R. C. H.  
THOMPSON, G. W.

TUN YIN, U  
WOOD, G. L.

Seals. By K. M. Backhouse. 1969.

A survey of the animal kingdom. 4th ed. 1969.

Bulletin of the British Museum (Natural History). Entomology: Vol. 22, no. 8; Vol. 23, nos. 1-8; Vol. 24, nos. 1-3; supplements 13-16; Geology: Vol. 17, nos. 3-8; Vol. 18, nos. 1-5; supplements 5-7; Zoology: Vol. 17, nos. 4-9; Vol. 18, nos. 1-8; supplement 3.

Catalogue of the type specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick. By J. F. G. Clark. Vols. 6-7. 1969.

The rodents of West Africa. By D. R. Rosevear. 1969.

The Yorkshire Jurassic flora. 3. By T. M. Harris. 1969.

Cycles génitaux saisonniers de mammifères sauvages. By R. Canivanc. 1968.

A revised check-list of the birds of the Maltese islands. By C. de Lucca. 1969.

Oceanic pollution: a survey and some suggestions for control. By M. M. Sibthorp.

Principles governing certain changes in the environment of man.

Tsetse flies in Northern Nigeria. By H. Davies. 1967.

Journal of mammalogy. Vol. 38. 1957.

Merveilleux plumages: dix siècles de livres d'oiseaux. By J. Balis. 1969.

The farming of fish. By C. F. Hickling. 1968.

Thomas Henry Huxley: list of his correspondence with Miss Henrietta Anne Heathorn, later Mrs Huxley, 1847-1854. Compiled by J. Pingree. 1969.

Periodicheskie (sezonnnye i godichnye) izmeneniya v organizme gryzunov, ikh prichiny i posledstviya. By N. I. Kalabukhov. 1969.

Animals magazine Vol. 1 (1) 1963 to Vol. 4 (2) 1964.

Born free: a lioness of two worlds. By Joy Adamson. 1960.

Biologiya saigaka. By A. G. Bannikov and others. 1961.

Das Jahr mit den Gibbons. By W. Fischer. 1965.

Foreign finches in captivity. By A. G. Butler. 2nd ed. 1899.

A stereotaxic brain atlas of the Tree shrew (*Tupaia glis*). By J. Tigges and T. R. Shantha. 1969.

A symposium on neoplasms and related disorders of invertebrate and lower vertebrate animals. 1969.

The Zoological Gardens souvenir, Regent's Park, London. Six permanent cabinet photographs from life of the animals.

The Zoo's who's who - monkeys. By W. S. Berridge.

Grappling with a griffon. By R. C. H. Sweeney. 1969.

Fishes of the world. By A. Cooper. 1969.

Life in the sea. By J. Croft. 1969.

Wild animals of Burma. By U Tun Yin. 1967.

The Guinness book of records. 15th ed. Editors and compilers: N. and R. McWhirter. 1969.



## Meetings during 1970

### Scientific Meetings at 5 p.m.

Tuesday, 10th February

Tuesday, 10th March

Tuesday, 14th April

Tuesday, 12th May

Tuesday, 9th June

Tuesday, 13th October

Tuesday, 10th November

Tuesday, 8th December

### Symposia

Thursday and Friday, 28th–29th May, 'Regional variation in Indian Ocean coral reefs'.

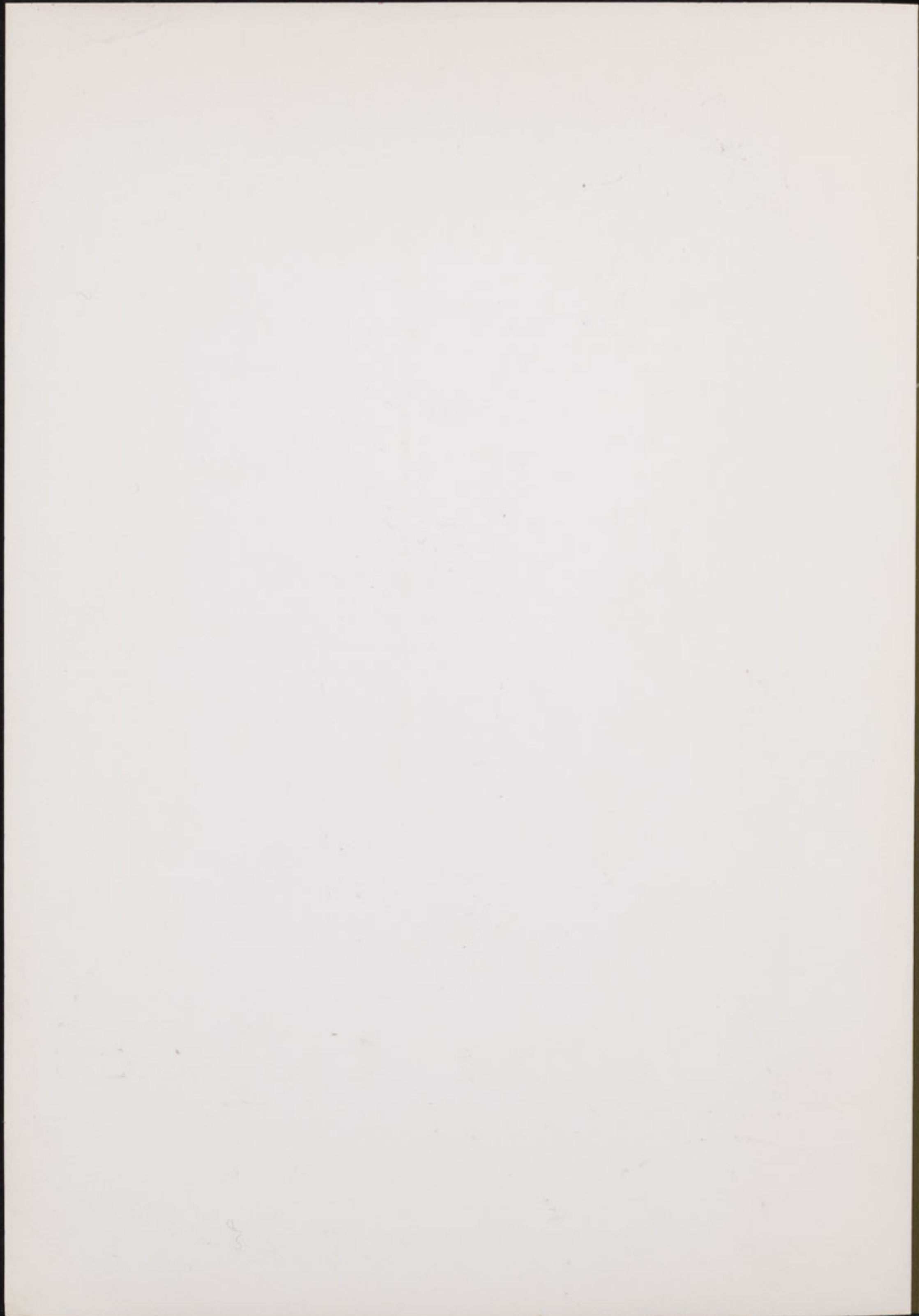
Thursday and Friday, 22nd–23rd October, 'Conservation and productivity of natural waters'.





The Zoological  
Society  
of London  
Annual Report  
1965



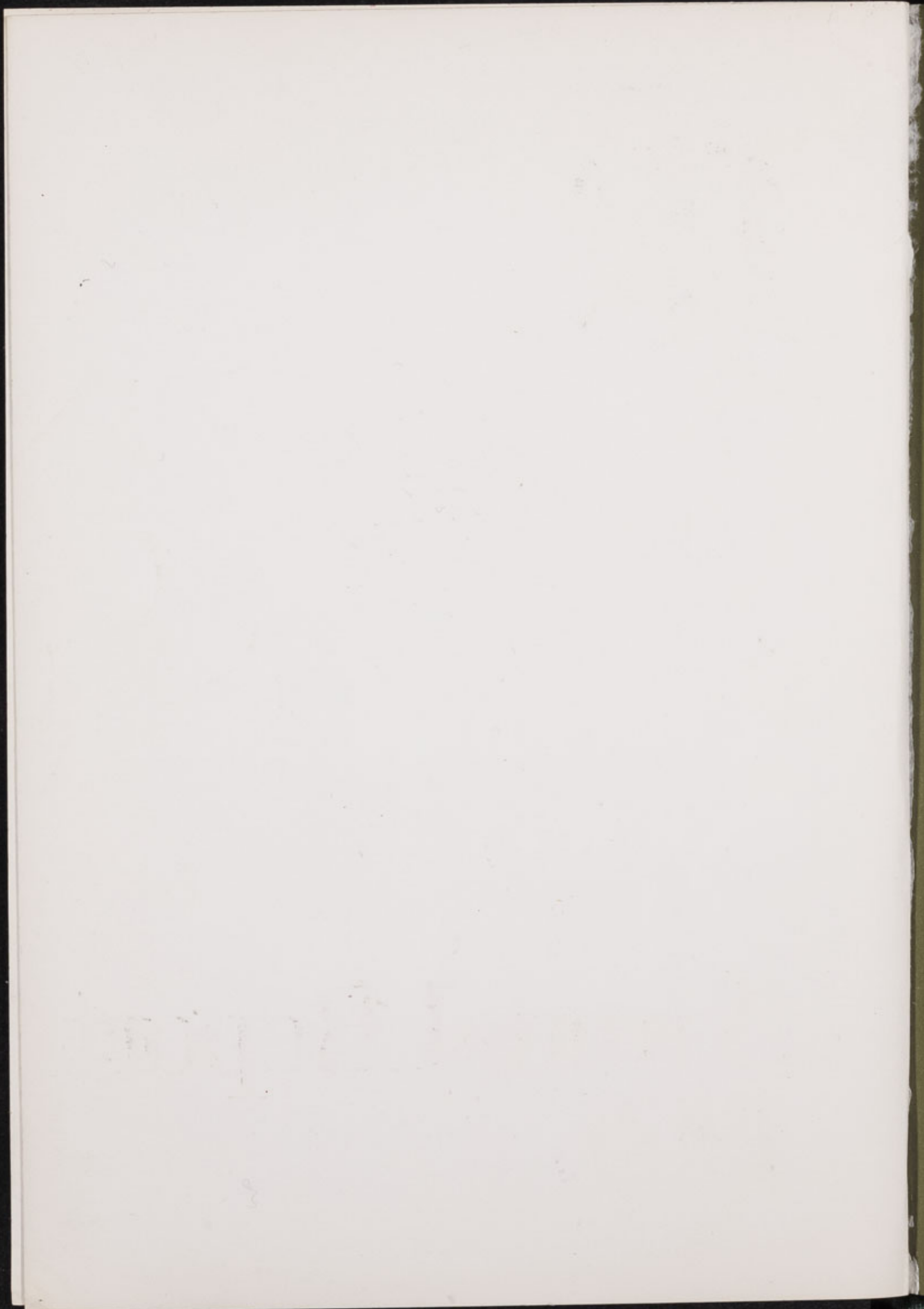






The Zoological  
Society  
of London  
Annual Report  
1966









The Zoological  
Society  
of London  
Annual Report  
1967



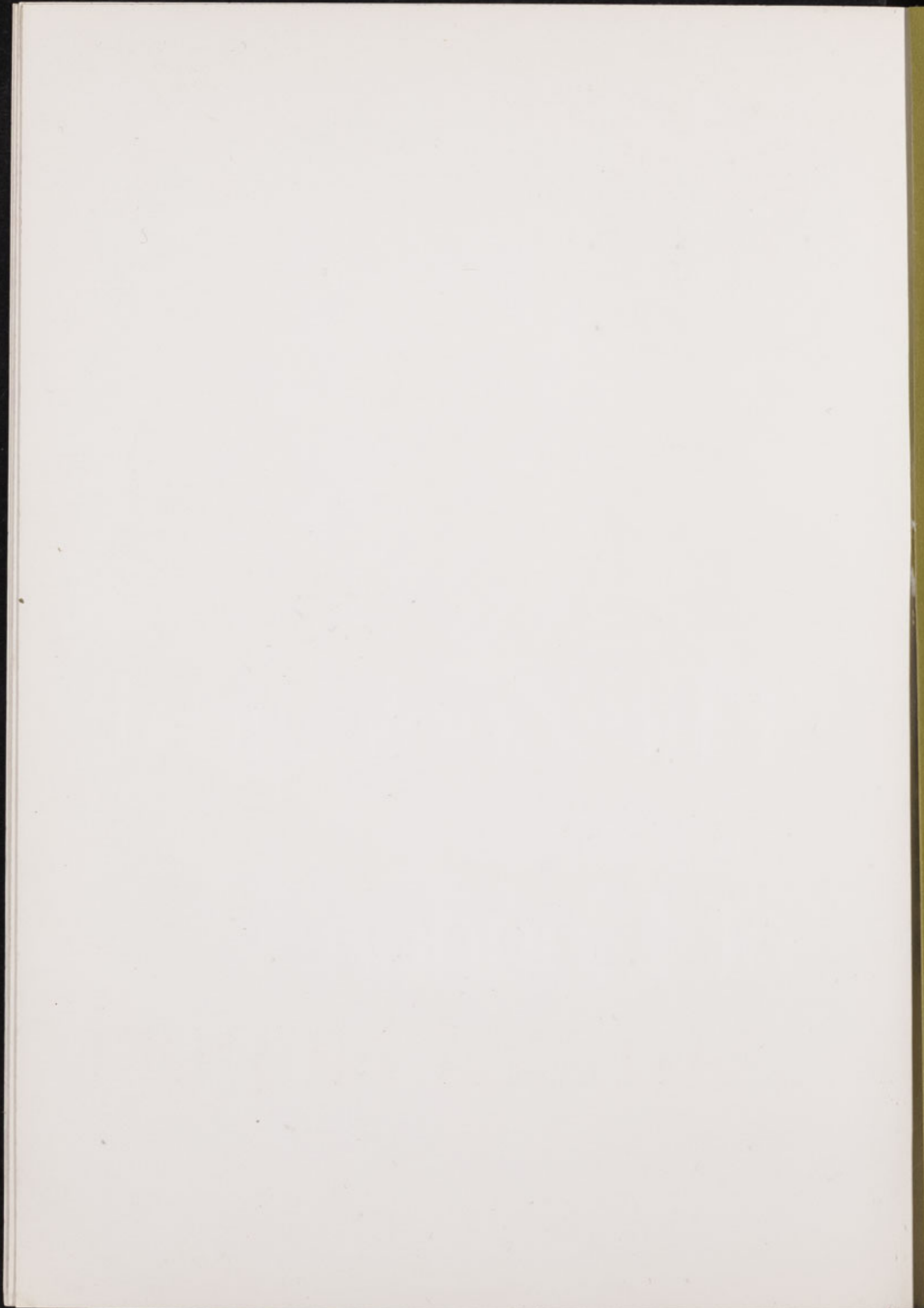






The Zoological  
Society  
of London  
Annual Report  
1968









The Zoological  
Society  
of London  
Annual Report  
1969



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# Report of the Auditors on the accounts of the Zoological Society of London

## for the year ended 31st December 1966

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 1966, including those relating to the Ford Research Fund, and have found them to be in order. Having received all the information and explanations we have required, we are of the opinion that the attached Balance Sheets, the accompanying Income and Expenditure Accounts and Notes show a true and fair view of the position as shown by the books of the Society. We have verified the Investments and the Cash Balances.

W. B. KEEN & CO *Chartered Accountants*  
Finsbury Circus House, Blomfield Street, London EC2  
20th February 1967



THE ZOOLOGICAL

Balance Sheet at

1965			£	£
£	£			
	72,341	Sundry Creditors and Receipts in Advance		53,523
	—	Government Loan		250,000
	291,621	Short term loans and Bank overdraft		383,193
	91	Heer Bequest		91
	5,000	Fantham Bequest (note 1)		5,000
	14,782	Nuffield Institute Fund (note 2)		6,963
	—	Wolfson Donation Fund		25,000
		Publications Funds (note 3)		
14,554		Zoological Record Fund	14,861	
12,814		Neave Lloyd Fund	14,152	
<u>      </u>	27,368		<u>      </u>	29,013
	13,199	Whipsnade Catering Improvements Fund (note 4)		3,029
	18,537	Composition Fund		18,087
	1,118	Staff Compensation Fund		1,118
		Reserves		
140,000		General Reserve (note 5)	140,000	
88,322		Buildings Replacement Fund (note 5)	119,303	
100,000		Pensions Contributions Reserve	100,000	
<u>      </u>	328,322		<u>      </u>	359,303
	120,508	General Purposes Account		120,508
	<u>      </u>			<u>      </u>
	<u>£892,887</u>			<u>£1,254,828</u>

For the notes which form part of these accounts see pages 7 and 8







## Income and Expenditure Account for the year ended 31st December 1966

1965				1965				1965			
£	£	£	£	£	£	£	£	£	£	£	£
25,130			25,240		67,255						76,735
5,045			3,847		24,000						26,000
	20,085			21,393		24,959					36,699
10,942			13,335		16,920						
5,108			5,166		36,048						
57			57								
	16,107		18,558		52,968						50,463
17,095			26,671		21,168						
4,608			5,072		7,402						
2,656			2,524		31,879						
5,300			6,919								
	29,659		41,186		11,049						
					17,421						
392,912			469,808		4,904						
19,353			22,941		3,219						
21,466			20,316		6,215						
1,253			1,374		103,257						
3,519			4,120								
3,027			3,413								
39,309			37,556		4,373						
21,070			26,617		165,276						
			64,173		39,887						
19,618			18,738		30,459						
6,324			4,834		18,323						
667			815								
4,449			4,273								
	532,967		614,805								
129,919			132,335		24,866						
8,777			7,550		17,342						
38,402			37,558		7,350						
2,157			2,672		404,348						
3,244			3,009								
678			616		4,897						
10,226			10,935		62,929						
1,217			1,075		18,957						
5,190			3,765		7,461						
5,813			6,862		9,960						
11,847			10,772								
164			300		16,752						
	217,634		217,449		1,099						
					10,829						
					6,102						
					3,822						
					142,808						
3,143			2,316								
<u>£819,595</u>			<u>£915,707</u>		<u>£819,595</u>						<u>£915,707</u>

For the notes which form part of these accounts see pages 7 and 8



# Ford Research Fund

## BALANCE SHEET AT 31st DECEMBER 1966

	£	£	£		£
Sundry Creditors and Receipts in Advance			3,481	Sundry Debtors and Payments in Advance	1,715
Capital Account (Ford Foundation Fund and Research Fund)	229,879			Investments at Cost (market value £219,148)	237,875
Add Profit on Sale of Investments	5,838			Deposits and cash	1,462
	<u>          </u>		235,717		
<i>Equipment Fund</i>					
Balance 1st Jan. 1966	967				
Add Transfer - Income and Expenditure A/c	750				
	<u>      </u>	1,717			
Less Purchase of equipment		10			
		<u>      </u>	1,707		
<i>Revenue Account Surplus</i>					
Balance 1st Jan. 1966		715			
Less Excess of Expenditure over Income		568			
		<u>      </u>	147		
			<u>          </u>		<u>          </u>
			£241,052		£241,052

## INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER 1966

	£		£
Interest and Dividends	15,554	Salaries (including Pension Contributions)	20,434
Society's Contribution	10,000	Laboratory and other scientific expenses	1,913
Sundry	150	Administration charges	1,190
Excess of Expenditure over Income	568	Heating, Lighting and Maintenance	1,158
		Travelling and Miscellaneous	827
		Transfer - Equipment Fund	750
	<u>          </u>		<u>          </u>
	£26,272		£26,272



THE ZOOLOGICAL SOCIETY OF LONDON

# Notes on the Accounts 31st December 1966

## 1. Fantham Bequest

	£	£	£
Balance at 1st January 1966			5,000
Investment Income			281
			<u>5,281</u>
<i>Less: Expenditure on Research Fellowship</i>			281
Balance at 31st December 1966			<u>£5,000</u>

## 2. Nuffield Institute Fund

Balance at 1st January 1966			14,782
Donations and Grants			43,099
Society's Contribution			43,731
			<u>101,612</u>
<i>Less: Salaries (including Pension contributions)</i>		49,919	
Scientific Expenses		35,025	
Other Expenses		9,705	
			<u>94,649</u>
Balance at 31st December 1966			<u>£6,963</u>

## 3. Publications Funds

		<i>Zoological Record Fund</i>	<i>Neave Lloyd Fund (Nomenclator Zoologicus)</i>
Balance at 1st January 1966		14,554	12,814
Investment Income		780	750
Sales and Donations		28,512	1,555
		<u>43,846</u>	<u>15,119</u>
<i>Less: Publication and Distribution Costs</i>		28,985	967
Balance at 31st December 1966		<u>£14,861</u>	<u>£14,152</u>

## 4. Whipsnade Catering Improvements Fund

Balance at 1st January 1966		13,199
<i>Less: Catering Improvements</i>		10,170
Balance at 31st December 1966		<u>£3,029</u>

## 5. Reserves

		<i>General</i>	<i>Buildings Replacement Fund</i>
Balance at 1st January 1966		140,000	88,322
Investment Income		—	4,981
Realised profits on investments		7,253	—
Fees of deceased compounders (from Composition Fund)		735	—
Income and Expenditure Account - Contribution		—	26,000
		<u>147,988</u>	<u>119,303</u>
<i>Less: Transfers - Income and Expenditure Account</i>	2,316		
Regent's Park Rebuilding Fund	5,672		
		7,988	
Balance at 31st December 1966		<u>£140,000</u>	<u>£119,303</u>

## 6. Stocks

No values are included in the Balance Sheet for:

- a. Animals
- b. Library books and pictures

- c. Plant, vehicles, fittings and furniture
- d. Farm and Garden stocks (Whipsnade)



### 7. Regent's Park Rebuilding Fund

Balance at 1st January 1966	£	£
New Works		238,643 Dr.
		<u>307,744</u>
Less: Miscellaneous Donations	5,976	546,387 Dr.
Transfer - General Reserve Fund	<u>5,672</u>	<u>11,648</u>
Balance at 31st December 1966		<u>£534,739 Dr.</u>

### 8. Whipsnade Building Fund

Balance at 1st January 1966		82,354 Dr.
New Works		<u>45,008</u>
Balance at 31st December 1966		<u>£127,362 Dr.</u>

### 9. De Arroyave Fund

The capital of the De Arroyave Fund is held by the Official Trustee of Charitable Funds. The income from the Fund was £5,200, and from this £34 was spent on the upkeep of the Lopes grave and mausoleum, in accordance with the terms of the Trust.

### 10. Davis Fund

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



# Report of the Auditors on the accounts of the Zoological Society of London

for the year ended  
31st December 1968

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 1968, including those relating to the Ford Research Fund, and have found them to be in order. Having received all the information and explanations we have required, we are of the opinion that the attached Balance Sheets, the accompanying Income and Expenditure Accounts and Notes show a true and fair view of the position as shown by the books of the Society. We have verified the Investments and the Cash Balances.

W. B. KEEN & CO *Chartered Accountants*  
Finsbury Circus House, Blomfield Street, London EC2  
20th February 1969



## Balance Sheet at

1967				
£	£		£	£
	102,273	Sundry Creditors and Receipts in Advance		86,847
	249,692	Government Loan (note 1)		249,362
	494,677	Short term loans and Bank overdraft		655,818
	91	Heer Bequest		91
	5,215	Fantham Bequest		5,436
	5,226	Nuffield Institute Fund (note 2)		10,250
	26,541	Wolfson Donation Fund		28,446
		Publications Funds (note 3)		
16,158		Zoological Record Fund	30,301	
13,771		Neave Lloyd Fund	14,854	
—	29,929		—	45,155
	17,722	Composition Fund		17,697
	1,108	Staff Benevolent Fund		1,156
		Reserves		
136,137		General Reserve (note 4)	134,711	
182,158		Buildings Replacement Fund (note 5)	217,475	
100,000		Pensions Contributions Reserve	100,000	
—	418,295		—	452,186
	120,508	General Purposes Account		120,508
	<u>£1,471,277</u>			<u>£1,672,952</u>

For the notes which form part of these accounts see pages 7 and 8







# Income and Expenditure Account for the year ended 31st December 1968

1967				1967				1967			
£	£	£	£	£	£	£	£	£	£	£	£
25,376		28,301		80,562							79,093
4,020		4,204		56,000							26,000
<u>21,356</u>		<u>24,097</u>		33,563							46,375
				17,490							17,490
11,541		7,993		14,205							
5,248		5,139		35,720							13,030
57		57		49,925							37,331
<u>16,846</u>		<u>13,189</u>									<u>50,361</u>
				17,585							
25,490		24,915		10,000							19,569
5,983		6,376		33,615							8,151
2,624		2,562		12,953							38,468
8,574		10,549		17,090							<u>66,188</u>
<u>42,671</u>		<u>44,402</u>		7,823							14,851
				3,386							21,842
567,526		578,209		8,338							7,821
25,882		29,165		110,790							3,613
24,108		22,677									10,618
1,385		1,258									<u>124,933</u>
3,854		3,346		4,645							4,981
3,631		3,706		207,131							220,466
70,907		66,687		45,753							45,729
17,920		20,188		39,449							42,235
2,941		3,454		26,495							29,661
899		2,160									<u>343,072</u>
4,283		4,676		86,204							85,960
<u>723,336</u>		<u>735,526</u>		34,728							17,170
				18,928							<u>103,130</u>
143,870		128,427		13,882							18,683
9,157		8,991		10,474							28,867
38,422		36,160		487,689							4,332
4,037		3,123									<u>498,084</u>
2,347		1,788		5,003							5,269
725		598		81,365							90,766
12,364		10,938		22,423							28,357
1,092		1,245		12,349							13,296
6,864		4,233		15,684							13,120
10,311		8,792									<u>150,808</u>
1,405		1,465		22,744							26,835
<u>230,594</u>		<u>205,760</u>		12,989							5,847
				13,246							<u>32,682</u>
				6,302							12,048
				9,238							8,433
				201,343							6,721
											<u>210,692</u>
2,559		30,054									
<u>£1,037,362</u>		<u>£1,053,028</u>		<u>£1,037,362</u>							<u>£1,053,028</u>

For the notes which form part of these accounts see pages 7 and 8



# Wellcome Institute of Comparative Physiology

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER 1968

	£		£
Ford Research Fund – Interest and Dividends	13,645	Salaries (including Pension Contributions)	18,670
Research Funds transferred from Birmingham University	8,103	Laboratory and other Scientific Expenses	5,926
Balance of Revenue Account Surplus	203	Administrative Charges	1,570
Society's Contribution	8,151	Travelling and Miscellaneous	3,062
	<hr/>	Transfer – Equipment Fund	874
	30,102		<hr/>
Project Grant (World Health Organisation)	7,024	Expenditure from Project Grant:	30,102
		Salaries	3,977
		Scientific Expenses	2,580
		Other Expenses	467
			<hr/>
			7,024
	<hr/>		<hr/>
	<u>£37,126</u>		<u>£37,126</u>

## Ford Research Fund

BALANCE SHEET AT 31st DECEMBER 1968

	£	£	£		£
Sundry Creditors and Receipts in Advance			1,024	Sundry Debtors and Payments in Advance	4,502
Capital Account:				Investments at Cost	228,098
Balance 1st Jan. 1968	231,758			(Market Value £306,951)	
Add Profit on Investments	4,736			Cash on Deposit and in hand	7,757
	<hr/>	236,494			
<i>Equipment Fund:</i>					
Balance 1st Jan. 1968	2,196				
Add Transfer – Income and Expenditure A/c	874				
	<hr/>	3,070			
Less Maintenance and Renewals		231			
		<hr/>	2,839		
<i>Revenue Account Surplus</i>					
Balance 1st Jan. 1968	203				
Less Transfer to Income and Expenditure A/c	203				
	<hr/>				
		<hr/>	<u>£240,357</u>		<hr/>
					<u>£240,357</u>



# Notes on the Accounts 31st December 1968

## 1. Government Loan

	£	£
Balance at 1st January 1968		249,692
Less: Repayment		330
Balance at 31st December 1968		<u>£249,362</u>

## 2. Nuffield Institute Fund

		£
Balance at 1st January 1968		5,226
Donations and Grants		72,094
Society's Contribution		38,468
		<u>115,788</u>
Less: Salaries (including Pension Contributions)	68,288	
Scientific Expenses	24,112	
Other Expenses	13,138	
	<u>105,538</u>	
Balance at 31st December 1968		<u>£10,250</u>

## 3. Publications Funds

	<i>Zoological Record Fund</i>	<i>Neave Lloyd Fund (Nomenclator Zoologicus)</i>
Balance at 1st January 1968	16,158	13,771
Investment Income	1,085	731
Sales and Donations	45,718	2,151
	<u>62,961</u>	<u>16,653</u>
Less: Publication and Distribution Costs	32,660	1,799
Balance at 31st December 1968	<u>£30,301</u>	<u>£14,854</u>

## 4. General Reserve Fund

		£
Balance at 1st January 1968		136,137
Fees of deceased Compounders (from Composition Fund)		730
Net Profit on Investments		27,568
		<u>164,435</u>
Less: Transfer – Income and Expenditure Account	30,054	
Deduct: Government Loan repayment	330	
	<u>29,724</u>	
Balance at 31st December 1968		<u>£134,711</u>

## 5. Buildings Replacement Fund

		£
Balance at 1st January 1968		182,158
Investment Income		9,317
Income and Expenditure Account – Contribution		26,000
		<u>£217,475</u>
Balance at 31st December 1968		<u>£217,475</u>

## 6. Stocks

No values are included in the Balance Sheet for:

- Animals
- Library books and pictures

- Plant, vehicles, fittings and furniture
- Farm and Garden stocks (Whipsnade)



## 7. Building Accounts

	£	£ <i>Regent's Park</i>	£ <i>Whipsnade</i>
Balance at 1st January 1968		642,279 Dr.	227,783 Dr.
New Works		102,766	54,276
		<u>745,045 Dr.</u>	<u>282,059 Dr.</u>
Less: Charles Clore Donation (instalment)	20,000		
Miscellaneous Donations	983		
	<u>20,983</u>	20,983	32
Balance at 31st December 1968		<u>£724,062 Dr.</u>	<u>£282,027 Dr.</u>

## 8. De Arroyave Fund

The capital of the De Arroyave Fund is held by the Official Trustee of Charitable Funds. The income from the Fund was £5,158, and from this £19 was spent on the upkeep of the Lopes grave and mausoleum, in accordance with the terms of the Trust.

## 9. Davis Fund

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



# Report of the Auditors on the accounts of the Zoological Society of London

for the year ended  
31st December 1969

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 1969, including those relating to the Ford Research Fund, and have found them to be in order. Having received all the information and explanations we have required, we are of the opinion that the attached Balance Sheets, the accompanying Income and Expenditure Accounts and Notes show a true and fair view of the position as shown by the books of the Society. We have verified the Investments and the Cash Balances.

W. B. KEEN & CO *Chartered Accountants*  
Finsbury Circus House, Blomfield Street, London EC2  
25th February 1970



## Balance Sheet at

1968			
£	£		£      £
	86,847	Sundry Creditors and Receipts in Advance	77,311
	249,362	Government Loan	249,362
	655,818	Short term loans and Bank overdraft	752,229
	91	Heer Bequest	91
	5,436	Fantham Bequest (note 1)	5,711
	10,250	Nuffield Institute Fund (note 2)	15,644
	28,446	Wolfson Donation Fund (note 3)	30,435
		Publications Funds (note 4)	
30,301		Zoological Record Fund	41,254
14,854		Neave Lloyd Fund	16,063
—	45,155		— 57,317
	17,697	Composition Fund	17,117
	1,156	Staff Benevolent Fund	1,156
		Reserves	
134,711		General Reserve (note 5)	140,000
217,475		Buildings Replacement Fund (note 6)	228,596
100,000		Pensions Contributions Reserve	100,000
—	452,186		— 468,596
	120,508	General Purposes Account (note 7)	120,621
	<u>£1,672,952</u>		<u>£1,795,590</u>

For the notes which form part of these accounts see pages 7 and 8











# Wellcome Institute of Comparative Physiology

## INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER 1969

	£	£		£	£
Ford Research Fund – Interest and Dividends		15,047	Salaries (including Pension Contributions)		21,922
Research Funds transferred from Birmingham University		10,406	Laboratory and other Scientific Expenses		5,208
Society's Contribution		6,953	Administrative Charges		1,517
		<u>32,406</u>	Heating, Lighting and Miscellaneous		3,009
			Transfer – Equipment Fund		750
					<u>32,406</u>
Project Grants:			Expenditure from Project Grants:		
World Health Organisation	4,384		Salaries	3,392	
Medical Research Council	301		Scientific Expenses	841	
	<u>4,685</u>		Other Expenses	452	
				<u>4,685</u>	
		<u>£37,091</u>			<u>£37,091</u>

## Ford Research Fund

### BALANCE SHEET AT 31st DECEMBER 1969

	£	£	£		£
Sundry Creditors and Receipts in Advance			900	Sundry Debtors and Payments in Advance	3,962
Capital Account:				Investments at Cost	235,399
Balance 1st Jan. 1969	236,494			(Market Value £263,992)	
Less Loss on Investments	826			Cash on Deposit and in hand	146
	<u>235,668</u>				
Equipment Fund:					
Balance 1st Jan. 1969	2,839				
Add Transfer – Income and Expenditure A/c	750				
	<u>3,589</u>				
Less Maintenance and Renewals	650				
	<u>2,939</u>				
		<u>£239,507</u>			<u>£239,507</u>



# Notes on the Accounts 31st December 1969

## 1. Fantham Bequest

	£	£
Balance at 1st January 1969		5,436
Investment Income		275
		<u>£5,711</u>
Balance at 31st December 1969		

## 2. Nuffield Institute Fund

Balance at 1st January 1969		10,250
Donations and Grants		81,776
Society's Contribution		36,930
		<u>128,956</u>
<i>Less:</i> Salaries (including Pension Contributions)	78,004	
Scientific Expenses	22,500	
Other Expenses	<u>12,808</u>	
		<u>113,312</u>
Balance at 31st December 1969		<u>£15,644</u>

## 3. Wolfson Donation Fund

Balance at 1st January 1969		28,446
Investment Income		1,989
		<u>£30,435</u>
Balance at 31st December 1969		

## 4. Publications Funds

	<i>Zoological Record Fund</i>	<i>Neave Lloyd Fund (Nomenclator Zoologicus)</i>
Balance at 1st January 1969	30,301	14,854
Investment Income	1,624	786
Sales and Donations	51,051	2,275
	<u>82,976</u>	<u>17,915</u>
<i>Less:</i> Publication and Distribution Costs	41,722	1,852
Balance at 31st December 1969	<u>£41,254</u>	<u>£16,063</u>

## 5. General Reserve Fund

Balance at 1st January 1969		134,711
Fees of deceased Compounders (from Composition Fund)		815
Net Profit on Investments		87,263
		<u>222,789</u>
<i>Less:</i> Transfers - Income and Expenditure Account	53,938	
General Purposes Account	113	
Rebuilding Fund	<u>28,738</u>	
		<u>82,789</u>
Balance at 31st December 1969		<u>£140,000</u>

## 6. Buildings Replacement Fund

Balance at 1st January 1969		217,475
Investment Income		11,121
		<u>£228,596</u>
Balance at 31st December 1969		



## 7. General Purposes Account

	£	£	£
Balance at 1st January 1969			120,508
Transfer - General Reserve			113
Balance at 31st December 1969			<u>£120,621</u>

## 8. Freehold Property at Cost

Balance at 1st January 1969		120,508
Expenditure on Whipsnade Staff Housing during year		113
Balance at 31st December 1969		<u>£120,621</u>

## 9. Stocks

No values are included in the Balance Sheet for:

- a. Animals
- b. Library books and pictures
- c. Plant, vehicles, fittings and furniture
- d. Farm and Garden stocks (Whipsnade)

## 10. Building Accounts

Balance at 1st January 1969		<i>Regent's Park</i>	<i>Whipsnade</i>
New Works		724,062 Dr.	282,027 Dr.
		22,927	54,874
		<u>746,989 Dr.</u>	<u>336,901 Dr.</u>
Less: Charles Clore Donation (instalment)	20,000		
Miscellaneous Donations	6,791		324
Transfer - General Reserve	28,738		
	<u>55,529</u>		
Balance at 31st December 1968		<u>£691,460 Dr.</u>	<u>£336,577 Dr.</u>

## 11. De Arroyave Fund

The capital of the De Arroyave Fund is held by the Official Trustee of Charitable Funds. The income from the Fund was £5,436, and from this £167 was spent on the upkeep of the Lopes grave and mausoleum, in accordance with the terms of the Trust.

## 12. Davis Fund

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



