



THE ZOOLOGICAL SOCIETY OF LONDON

Annual Report

1960

THE ZOOLOGICAL SOCIETY OF LONDON

The Society was founded in 1826 by Sir Stamford Raffles, Sir Humphry 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 supplementary Charter, extending and modifying the original Charter was granted in 1948.

The Society's Gardens in Regent's Park, which were first opened to the public in 1828, 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 down land at Whipsnade and has developed them into a Zoological Park where there is a minimum of housing and a maximum of open spaces for the animals. Part of the Park is used as a farm which produces much of the fodder for the animals both at Whipsnade and Regent's 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. Being primarily a scientific society it undertakes and encourages scientific research in zoology by members of its staff and by visiting scientists, and 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. Three 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 100,000 volumes, including many complete sets of scientific journals.

The *Proceedings*, published eight times a year, in octavo, forms the main organ of the Society for the publication of the papers read at the Scientific Meetings and also notices of all business transacted at these meetings. The papers cover all fields of zoology and are fully illustrated with plates and text figures. The *Transactions* are published at irregular intervals, and contain such of the communications made to the Scientific Meetings as are better adapted for publication in quarto form because of the illustrations required. A third publication, entitled *Symposia of The Zoological Society of London*, first published in 1960, records the papers read at the Symposia.

The *Zoological Record*, a comprehensive bibliography of zoological literature with subject and systematic indices, is published annually by the Society; it is available either as a complete bound volume or separately in 19 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 1945, with a bibliographical reference to the original description of each. The work contains approximately 250,000 entries, and is published in 5 volumes.

THE ZOOLOGICAL SOCIETY OF LONDON

REPORT
OF THE COUNCIL
FOR 1960

*The Council has pleasure in presenting
its one hundred and thirty-second Annual Report
to the Annual General Meeting of the Society
to be held on Wednesday, 26th April 1961
at 4 p.m. in the Society's Offices
at Regent's Park*

CONTENTS

Report of the Council

GENERAL REPORT FOR THE YEAR	7
FINANCE	11
MEMBERSHIP	12
ZOOLOGICAL GARDENS, REGENT'S PARK	13
WHIPSNADDE PARK	19
SCIENTIFIC ACTIVITIES	21
EDUCATIONAL ACTIVITIES	29
STAFF	31
ACKNOWLEDGMENTS	33

Appendices

1. COMMITTEES
 2. STAFF
 3. PUBLICATIONS BY SOCIETY'S STAFF
 4. LIST OF GENERA, SPECIES AND SUBSPECIES NEW TO THE COLLECTION
 5. DONORS OF ANIMALS
 6. LIST OF ANIMALS BORN IN THE SOCIETY'S COLLECTION
 7. LIST OF ANIMALS RECEIVED
 8. DONATIONS TO ZOOLOGICAL RECORD
 9. BOOKS PRESENTED TO THE LIBRARY
- MEETINGS DURING 1961

Financial Accounts, with Auditors' Report

IN THE POCKET ON BACK COVER

THE ZOOLOGICAL SOCIETY OF LONDON

Patron

HER MAJESTY THE QUEEN

Council 1960-1961

PRESIDENT

H.R.H. The Prince Philip, Duke of Edinburgh, K.G., K.T.

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Air Chief Marshal Sir James Robb, G.C.B., K.B.E., D.S.O., D.F.C., A.F.C., F.S.A.

Peter Scott, Esq., C.B.E., D.S.C., M.A.

Professor J. Eric Smith, M.A., Sc.D., F.R.S., *Vice-President*

Sir Landsborough Thomson, C.B., O.B.E., M.A., D.Sc., LL.D., *Vice-President*

Errol I. White, Esq., C.B.E., Ph.D., D.Sc., F.R.S., F.L.S.

Frank Yates, Esq., Sc.D., F.R.S.

E. Michael Behrens, Esq. [from October 1960]

GENERAL REPORT FOR THE YEAR

The Society was deeply honoured by the gracious acceptance of the Presidency by His Royal Highness, The Prince Philip, Duke of Edinburgh, who was elected at the Anniversary Meeting on the 29th April.

To his predecessor, Sir Landsborough Thomson, the Society owes a considerable debt of gratitude. Beginning in 1954, he held office over a period of six years which rapidly evolved into a vigorous testing time for the Society. The economic conditions of the immediate post-war years, and particularly restrictions on building defined as non-essential, had prevented any major attack before 1953 on the enormous task of making good the damage and dilapidations which had accumulated in the Regent's Park Gardens from the start of the 1939-1945 war. The long promised reconstruction of the London Zoo as a whole and the further development of Whipsnade Park had also been blocked, largely for the same reasons. These tasks were energetically pursued during the period of Sir Landsborough's Presidency, and the first phase of the Regent's Park rebuilding programme was all but completed. Among other important steps taken during his Presidency was the adoption of the 1958 Bye-laws, the purpose of which was to help adjust the structure of the Society to meet present-day realities, and so to make it possible for the Society to discharge its responsibilities as a major scientific institution and educational charity.

In accepting office, the new President sent the following message:

'I should like you to tell the Council of the Zoological Society, and the Annual General Meeting of the Society on the 29th April, that I greatly appreciate the honour of becoming the President of the Society. During my term of Office I shall do my best to further the Society's purposes, and the Society can count on my help in the task of re-landscaping and rebuilding the Regent's Park Gardens. I am delighted that the Society's new plans have got off to such a splendid start.'

In presenting its Report for 1960 the Council is pleased to record that the momentum of this start is being more than maintained. The annual income of the Society is now about half a million pounds, of which all but a very small part is contributed by the public in admission and other charges. This sum balances our present costs, of which more than half go in salaries, wages and pensions. The undertaking of any new major development is thus necessarily dependent on special benefactions.

This year the Society was the recipient of three. In April the Council was happy to announce that the Trustees of the Nuffield Foundation had agreed to grant the

Society £100,000 to found an Institute of Comparative Medicine. In May Mr Jack Cotton undertook to provide £250,000 to help the rebuilding programme. Later in the same month the Ford Foundation gave 550,000 dollars (nearly £200,000) to endow Research Fellowships in animal breeding.

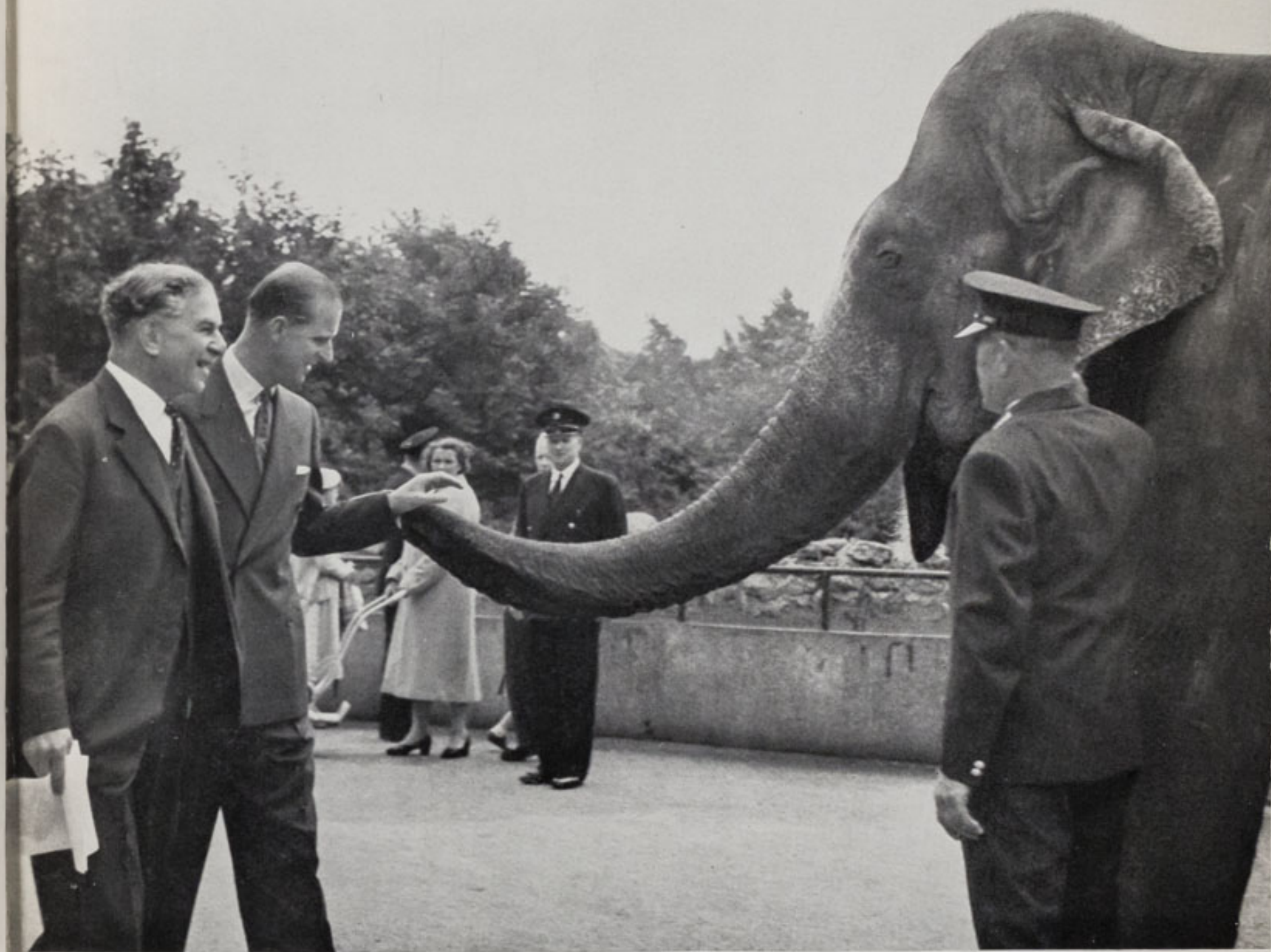
The largest single bequest that the Society had received before these benefactions were made in 1960 was the sum of £70,000. This was willed to us in 1930 by Mr George de Arroyave Lopes. Our new benefactions make it possible for the Society to take a considerable step forward in its rebuilding programme and in extending its scientific activities.

A major part of the latter falls in the field of comparative medicine. Almost from the day that the Regent's Park Gardens were founded in 1826 arrangements were made to provide veterinary care for the animals in the Society's Collection, and to conduct pathological observations on those which died. In 1903 a full-time Pathologist was appointed to the staff, but it was not until 1951 that he was joined by a resident Veterinary Surgeon, the Society until then having relied on the expert advice which could always be called on from the Royal Veterinary College, the London School of Hygiene and Tropical Medicine, and from various interested members of the medical profession. From its inception the Society had also provided research workers in different institutions with material for the study of isolated problems in comparative anatomy, comparative pathology, comparative haematology and comparative parasitology, and had sometimes found 'bench space' for the occasional student.

Unfortunately the laboratory facilities of the Society have been very restricted, and have never been sufficient to permit of any long-continued and exhaustive study in any aspect of comparative medicine; nor has the Society been able to employ a research staff to exploit the opportunities which daily present themselves for studies in comparative medicine.

All this will be transformed as a result of the existence of an Institute of Comparative Medicine, which the Nuffield Foundation, at the request of the Society, has agreed should be associated with the name of Lord Nuffield. The grant is also intended to allow for the creation of two Research Fellowships in Comparative Medicine.

The site chosen for the new Institute is immediately to the west of the main Offices, and Professor Richard Llewelyn Davies, Professor of Architecture in the University of London, has been charged with the design of the building. An *ad hoc* advisory committee under the Chairmanship of Professor Sir Roy Cameron, F.R.S.,



The visit of H.R.H. The Prince Philip, President of the Society, to the Zoological Gardens, Regent's Park, 14th September 1960. *Photographic News Agencies*



Puma cubs, the second pair born in the Zoological Gardens, Regent's Park, in 1960. *Fox Photos*

and a Planning Group of which the Chairman is Professor George Payling Wright, have been set up to guide the development of the project.

The grant from the Ford Foundation has been given for the specific purpose of establishing Research Fellowships and Studentships in animal breeding. Our present knowledge of reproductive processes derives mainly from observations on a limited number of species, e.g. rats, mice, rabbits, monkeys and farm animals, but it is sufficient to show that there is great diversity in reproductive mechanisms. The Ford grant makes it possible to undertake a systematic study of the reproductive habits and physiology of those animals in the Society's Collections which breed readily in captivity. These studies will be supervised by a Committee of well-known scientists distinguished for their contributions to our knowledge of reproductive physiology. On the basis of the advice of this Committee, the Council has already appointed the first three Research Fellows. For the time being, they will work in university laboratories, but the Society is now planning new laboratories – which will fill the vacant site between the Hospital and the Works building – for their accommodation.

Mr Cotton's gift is the key which sets in motion the plan for the reconstruction of the Regent's Park Gardens as devised by Sir Hugh Casson and Mr Peter Shephard in consultation with the Society's resident Architect, Mr F. A. Stengelhofen.

In transmitting his offer of a quarter of a million pounds to the Secretary, Mr Cotton wrote: 'After our several discussions, my interest in the scheme you outlined to me for the reconstruction of the Regent's Park Gardens of the Zoological Society has increased so much that I should like to provide the resources for carrying the project a significant step forward. In so doing I feel that I might be helping to give additional life to a great national institution of which we are all proud.'

Further details about the use to which Mr Cotton's gift is being put are given on pages 16 and 17.

These three munificent bequests not only spell out the purpose which is the basis of the Society's existence – the advancement of Zoology and Animal Physiology and the introduction of new and curious subjects of the Animal Kingdom – but also indicate how much more needs to be done if we are to retain the pre-eminent position we still enjoy among the national Zoological Societies of the world. For great as are the sums with which we have been so generously provided during the year under review, they are only a fraction of what we need both to rebuild our Gardens and to develop the scientific activities which it is our responsibility to foster.

In order that we can effectively manage these funds, and others which we hope

to obtain, and also to assure the privilege we enjoy as custodians of an important area of Crown Land, some further changes in our Constitution will be called for. Energetic measures will be necessary if we are to play the part everyone expects of us in promoting one of the most important and vital functions of the modern zoo—that of being a repository of the world's fauna. The political and economic ferment which is gathering force in previously under-developed territories of the world is inevitably associated with encroachments on the areas in which wild animals previously roamed. It goes without saying that institutions such as our own, which are responsible for keeping wild animals, should also help in the task of seeing that creatures which are becoming rare survive in a state of nature. We should also try to provide the conditions for breeding stocks to be built up in captivity. In this work our own opportunities are in some respects unrivalled, since in addition to Regent's Park we have at our disposal the broad acres of Whipsnade.

Work of conservation, either in the wild or in Zoological Gardens and Parks, cannot however be undertaken by any single institution alone. To this end we have this year launched a new publication, called *The International Zoo Yearbook*, which provides details about all zoological gardens in the world, including information about rare animals which have been bred, as well as up-to-date articles about different aspects of animal husbandry. It is intended that this volume should be brought up to date annually. More than 300 orders for the volume were received before the book was published.

The Council is grateful to all those who have served on its Committees, of which a list is given on page 37. It is also grateful to the Duke of Devonshire, the Earl of Mansfield and Mr Raymond Russell for their initiative in launching the appeal for funds to relieve the Society of the burden of the costs it was forced to incur in the legal action unsuccessfully brought against it by a former Fellow. This appeal brought in the sum of £1,570, of which £1,444 went to pay legal costs; the balance was transferred to the Rebuilding Fund.

FINANCE

Review of the year

1960 was the wettest year in England and Wales since 1872, and during the four months from July to October 1960 the rainfall was the greatest since records were started. It is not surprising, therefore, that attendances both at Regent's Park and Whipsnade were down on 1959. Although actual gate receipts were rather higher than last year, due to the increased admission charges, the total revenue was only just sufficient to balance the higher expenditure incurred during the year. The result is that the margin of income over expenditure, after making the usual contribution of £30,000 to the Pension Fund, is a very slender one.

The higher expenditure referred to is mainly accounted for by a further increase in salaries and wages, by the higher cost of normal maintenance, and by a number of minor improvements, particularly at Whipsnade, which were financed out of revenue. Expenditure on scientific publications also went up in 1960, notably in connection with the new *Symposia of The Zoological Society of London* and the *International Zoo Yearbook*.

On capital account the main items on the receipts side were the donations from the Ford Foundation and the first instalment of Mr Jack Cotton's gift, both of which are referred to elsewhere. On the expenditure side the principal payments were in respect of the Works, Supplies and Garage buildings and the major improvements to the Regent and Members' Restaurants. Other items at Regent's Park were the initial expenses in connection with the rebuilding of the Giraffe House, and further improvements in the Children's Zoo. At Whipsnade the main items were new paddock fences, public lavatories and additional staff accommodation.

Pension Fund

Reference was made in the Annual Report for 1958 to the new Pension Fund which had been set up under Trust Deed to replace the previous arrangements, under which pensions were paid out of current revenue. The Fund has now been in existence for over two years and, although its operations and accounts come under separate Trustees, a note on its progress will not be out of place in this Report.

The Fund was started off by the transfer by the Society of securities to the value of £75,000, since when two annual contributions of £30,000 each have been received and fully invested. Ten pensions, at a total cost of £3,035 per annum, have been admitted, and three benefits for death in service, amounting to £2,140, have been paid.

After careful consideration of all the factors involved, the Council decided not to 'contract out' of the new graduated State Pension Scheme.

THE MEMBERSHIP

Officers and Council

As mentioned earlier, H.R.H. The Prince Philip was elected President at the Annual General Meeting held on Friday, 29th April. Dr T. C. S. Morrison-Scott was re-elected Treasurer and Professor Sir Solly Zuckerman was re-elected Secretary.

The following members of Council retired:

Captain Cyril Diver, C.B., C.B.E.
Sir Allen Lane, M.A.
Michael W. Perrin, Esq., C.B.E., M.A., B.Sc., F.R.I.C.
Colonel H. E. Roberts
Iolo A. Williams, Esq.

The Fellows elected as members of Council to fill the five vacancies were:

Sir Landsborough Thomson, C.B., O.B.E., M.A., D.Sc., LL.D.
The Rt Hon. The Earl of Mansfield.
S. Wilson Kitchen, Esq.
Professor F. W. Rogers Brambell, B.A., Ph.D., D.Sc., F.R.S.
The Rt Hon. Alan Lennox-Boyd (now Viscount Boyd of Merton), C.H.

Viscount Boyd resigned from the Council in October, 1960, owing to his assumption of new duties. In accordance with the procedure laid down in the Bye-laws, Mr Michael Behrens was appointed to this vacancy.

Roll of Fellows

The registration of Fellows and Associates into the new categories of membership was completed during 1960, and at the end of the year the total number of Fellows was 3,964. There were 1,309 Associates.

Obituary

The Council regrets to report the death of:

Mrs D. Pinto-Leite – a Life Fellow since 1933, who was awarded the Society's Silver Medal in 1945.

Colonel H. E. Roberts – Member of Council 1956–1960.

Dr J. H. Oliver – Honorary Hydrologist since 1956. Dr Oliver's researches in the Aquarium laboratory have been of great importance and were largely instrumental in enabling the Society to breed octopus in the Aquarium.

Dr Alfredo Ramalho – A distinguished marine biologist and a Corresponding Member since 1933.

ZOOLOGICAL GARDENS, REGENT'S PARK

Visitors

The number of visitors to the Gardens at Regent's Park was 1,833,938, compared with 1,955,356 in 1959. The number of visitors to the Aquarium during 1960 was 366,726, compared with 387,171 during 1959. From April to September the Aquarium remained open to visitors until 8 p.m., while the Gardens closed at 7 p.m. The Children's Zoo was open to visitors throughout the year, the number of visitors being 355,564 compared with 215,182 during 1959, when it was open from July to December, and 194,530 during the summer season of 1958.

Students Tickets

For some years, tickets at very reduced rates have been available to students. In order to encourage the use of this facility it has been decided that, from 1st January, 1961, these tickets will be valid for admission on Sunday mornings.

Mammal Section

In addition to the improvements mentioned in the section outlining the progress of the redevelopment plan, various minor improved displays have been introduced. A transparent foam concrete burrow in the South Mammal House has been installed for some months, and is operating successfully as a display technique for small rodents. The initial humidity difficulties inside the tunnels have been overcome by air-conditioning the burrows with a small pump.

An alternative method of displaying burrowing rodents has also been successfully developed by using granulated cork; in this case the animals form their own burrows in the cork, which is specially prepared as a solid slab. These slabs can be inserted into the burrow container and replaced when necessary. In this way small rodents can design their own living accommodation.

Additional equipment has been devised for the Chimpanzee Den in the Children's Zoo, and a slot machine device has been constructed and installed from which chimpanzees may purchase food rewards with coins. It is hoped to extend this method of reward in the near future by using more elaborate apparatus.

Aquarium

During the year two female octopus received from Madeira laid eggs in the special octopus tank in exactly the same position as in 1957. These eggs proved fertile; the larvae hatched out after a brooding period of some 40 days, but, as has always happened in aquaria, they survived only some 8 days. The maintenance and breeding of octopus in an inland aquarium is largely dependent upon the quality of the sea water, and in the Society's Aquarium regular analyses ensure that the composition of the water in the octopus tank is known at all times.

In the tropical freshwater section of the Aquarium extensive new reserve accommodation has been established during the year. This allows a greater number of species to be kept. Special attention has also been paid to setting up suitable accommodation for growing tropical aquatic plants for use in the Aquarium tanks.

Flower Gardens

Under the guidance of the Horticulture Sub-committee the replanning of various parts of the gardens has continued. The flower beds along the Main Walk have been planted for 1961 with several varieties of the new tulip *Darwin* × *Fosteriana*. Two small areas have been taken over from the Ministry of Works; one of these – the shrubbery east of the main Office building – has been converted to a herbaceous border with flowering shrubs at the back. The other, at the extreme north-west corner of the Gardens, will be made into a small animal paddock.

The Society is grateful to the Royal Botanic Gardens, Kew, Mr R. J. Lewis and Mr H. Mills for their gifts of plants.

Catering

The major improvements carried out last year to the upper floor of the Regent Building have enabled improved services to be offered to the visiting public and have increased the turnover in the public restaurant. Zoo Restaurants Limited have also benefited to a considerable extent as the increased and improved accommodation has enabled the Company to undertake catering arrangements for much larger functions. It continues to grow as more and more people become aware of the facilities available.

Automatic vending has again proved to be a useful addition to catering sales, and, in spite of the bad weather experienced during the year and the decreased number of visitors to the Gardens, the sales, particularly of cigarettes and chocolate, have again increased over previous figures.

General

Keepers from the Zoological Gardens, Basle, visited London in September and the Society was delighted to welcome them, both at Regent's Park and Whipsnade.

Animals at Zoological Gardens, Regent's Park

The Society has been fortunate in acquiring a male Mountain Gorilla, *Gorilla gorilla beringei*, and four Brown Lemurs, *Lemur fulvus*.

Two litters of Pumas, *Felis concolor*, have been born during the year, and other notable births include a Ring-tailed Lemur, *Lemur catta*, three Jungle Cats, *Felis chaus*, a Hog Deer, *Axis porcinus*, and a Timor Deer, *Cervus timorensis*.

A Christmas Island Frigate-bird, *Fregata andrewsi*, Inca Terns, *Larosterna inca*, a Rufous Fishing Owl, *Scotopelia ussheri*, and Quetzals, *Pharomachrus mocinno*, were outstanding among the year's additions, which also included a Great Grey Tinamou, *Tinamus tao*, and two Sarus Cranes, *Grus antigone antigone*, bred in the Gardens.

Animals of all kinds (except Fish and Invertebrates) on 1st January, 1960	2,700
Animals of all kinds (except Fish and Invertebrates) received in 1960 by presentation, exchange, deposit and purchase, and transferred from Whipsnade	1,176
Animals of all kinds (except Fish and Invertebrates) born in the Menagerie during 1960	182
	<hr/>
	4,058
Animals of all kinds (except Fish and Invertebrates) dead, sold, sent in exchange or returned to depositors, and transferred to Whipsnade during 1960	1,213
Animals of all kinds (except Fish and Invertebrates) in the Gardens on 31st December, 1960	<hr/>
	2,845
	<hr/>

REDEVELOPMENT PLAN 'THE NEW ZOO'

The year 1960 has seen further progress in the redevelopment plans for the Regent's Park Gardens, of which an outline was given in last year's Report.

Phase 1. Service buildings

The main item has been the completion and occupation of the fine new Supplies Building, designed by Mr F. A. Stengelhofen, the Society's Architect. For the first time in the 130 years the Gardens have existed, the storage of grain, hay and forage, butcher's shop, refrigeration and all other stores and services for which the Supplies Officer is responsible, are concentrated under one roof. The building also provides offices for the Architect and his staff.

The structure is a pre-cast concrete frame with cavity brick wall panels. On the ground floor there are store-rooms, staff rooms, preparation and refrigeration rooms, lift and plant rooms, with heating from the central plant by coils and convector heaters. Accommodation for all vehicles used by the Society is also provided. On the first floor there are offices, additional store-rooms and hay storage.

The building is situated on the south side of the Outer Circle, and the direct access from the road and also from the Gardens greatly facilitates the unloading and distribution of the hundreds of tons of bulk foodstuffs and other materials handled.

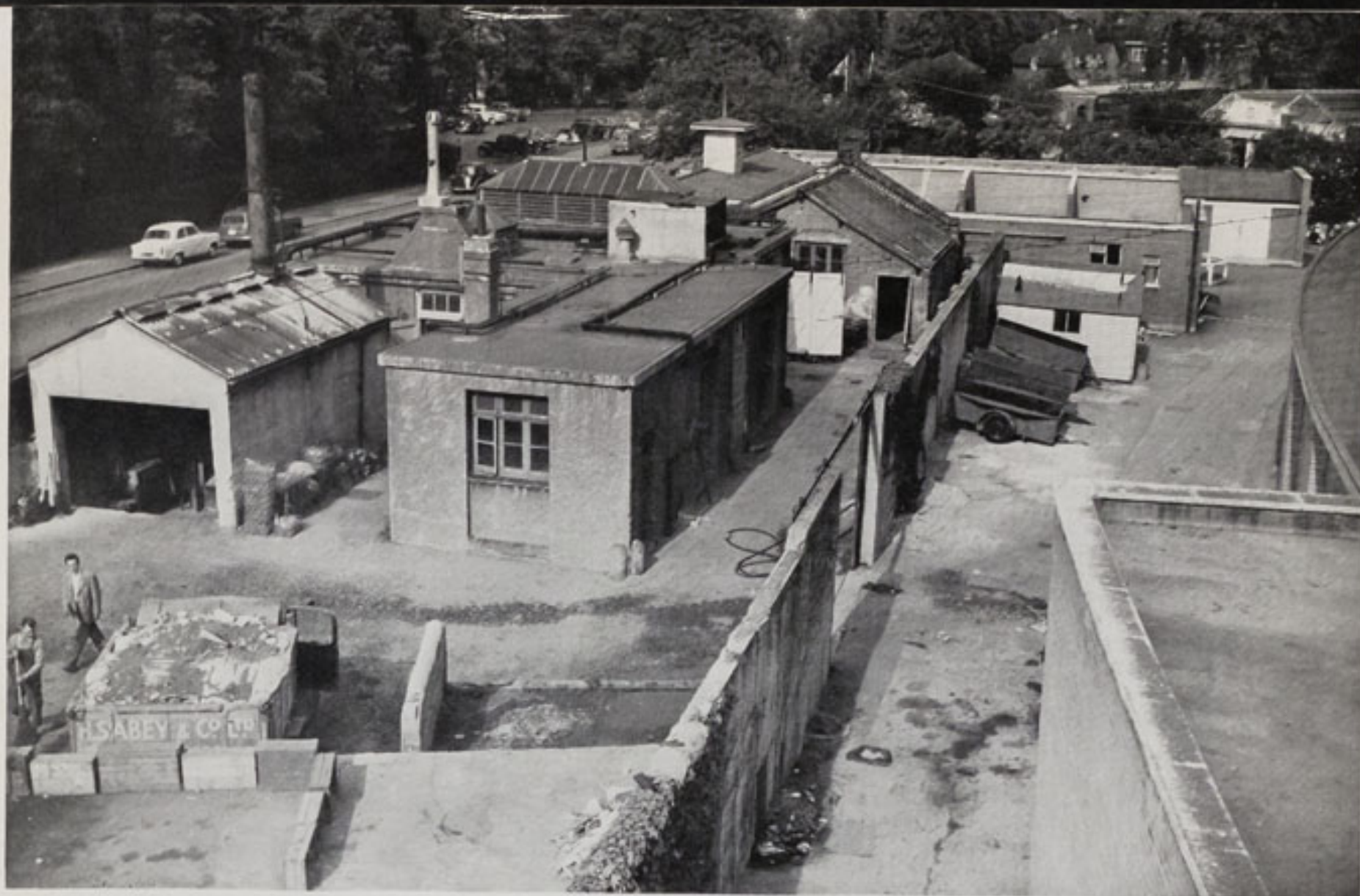
There is storage space for the holding of grain, fodder, meat and fresh foods in sufficient quantities to offset the occasional minor emergencies and the fluctuating market conditions which occur in the supply of perishable foods.

Provision has been made for machinery for the milling of grain, the preparation of root vegetables and for the hydroponic cultivation of grain food for use during the winter months. The installation of this equipment, which is almost complete, should prove of great benefit to the health of the animals.

The completion of these buildings, together with the conversion of the old Pony Stables to modern garages, also finished during the year, rounds off Phase 1 of the Plan.

Phase 2. Canal banks

When the Casson Plan for the rebuilding of the Zoo was published in March 1959, the landscaping and redevelopment of both banks of the Regent's Canal and the



Service area, July 1959. *Fox Photos*



Service area (Showing new Supplies building) December 1960. *Fox Photos*



Giraffe watches with interest the demolition of the wing of the Giraffe House.

western end of the Middle Garden, was envisaged as a major addition to the amenities of the Regent's Park Gardens, and Mr Cotton stipulated that his gift of £250,000 should be used specifically for this area.

This work – defined as Phase 2 – has now begun. Decimus Burton's Giraffe House, which suffered considerable bomb damage during the war, is being restored and its facilities improved, whilst its two wings (which do not form part of the original building) are being completely rebuilt. One of these will, it is hoped, eventually house Okapi; the other will provide reserve accommodation for giraffes, including a maternity wing. The rear of the Giraffe House is being re-modelled and will incorporate, at basement level, keepers' quarters and service rooms, as well as two public lavatories.

The plans for landscaping the south bank and part of the north bank of the canal, and for laying them out as quarters and paddocks for antelope, passed through all their stages during the year, and construction is due to begin early in 1961. This part of the scheme, for which the architect is Mr Peter Shephard, also provides for the building of two large houses, one on each flank of the Giraffe House, for zebra and camels respectively. In the houses themselves the only barrier between animals and the public will be a dry ditch; for the outside paddocks the barriers will be moats.

The new footbridge over the canal, designed by Sir Hugh Casson, is also being built during this phase. It will, it is hoped, be in use in the early summer of 1961 and should help to reduce the congestion which will inevitably occur this year when parts of the Middle and North Gardens are closed to the public whilst work is in progress.

Phase 3. Elephant House

Phase 3 of the plan will consist of the building of the new Elephant House. This too is being designed by Sir Hugh Casson, whose plans are well forward. Building cannot begin, however, until Phase 2 is sufficiently advanced to permit the transfer of the ungulates from the Antelope House to their new quarters in the Middle Garden. Included in the Elephant House project will be the first section of the overhead walks which will, in due course, form such a distinctive feature of the Zoo.

Long-term planning

In addition to the well defined phases of the main scheme, as described above, longer term planning on such basic necessities of redevelopment as future water supplies and drainage is going on continuously. Experiments have also been initiated in the techniques of animal display, with special reference to the use of modern methods and materials for containing mammals and birds with the least possible obstruction to view.

Major improvements to existing buildings or enclosures

Although not strictly part of the Redevelopment Plan itself, considerable improvements were made during the year to certain buildings which are likely to remain as part of the 'New Zoo' for many years. A note of them is, therefore, included in this section.

The most striking of these is the conversion of the Tropical Bird House to a 'Walk-through Aviary' to house Hummingbirds, Sunbirds and Honeycreepers (Sugarbirds), and there are now no barriers between the visitors and the birds. Decorations include a small stream and a profusion of tropical plants.

The old Panda Pit has been converted to a Seal Pond, giving the seals better accommodation than they had formerly in the Middle Garden. An ingenious system of delivering fish to the seals from an electrically driven box, which travels round the edge of the pond, provides exercise for the seals and amusement for the spectators. Plans are in hand to improve the public viewing facilities at this pond.

Minor Works

Other minor improvements have been the construction of a summer pool for terrapins and a small lawn for tortoises; an improved appearance for the main entrance gate; the removal of the old Kites Aviary and its replacement by a flower border; the construction of a sweet and ice-cream kiosk near the Monkey House, and the beginning of a three year programme for replacing the present metal garden seats by teak ones.

WHIPSNADE PARK

On 12th May, 1960 a ceremony was held at the Memorial to Sir Peter Chalmers Mitchell, which was attended by Lady Chalmers Mitchell, members of the Council and a few close friends.

Visitors

The number of visitors to Whipsnade Park during 1960 was 641,446, compared with 666,655 in the previous year. 175,904 people visited the Children's Zoo compared with 172,520 in 1959. Once again, there were more visitors to the Children's Zoo than in any year since it was opened in 1956, and more than one in four of the total visitors to the Park visited the Children's Zoo.

H.H. Sheikh Ahomed Ben Abdulla Althani of Qatar visited the Park on 17th September, 1960.

The number of cars brought into the Park by visitors in 1960 was 29,183, compared with 27,614 in 1959, the highest figure previously recorded.

Occurrences of Special Interest

The notable births at Whipsnade include one Indian Rhinoceros, two Snow Leopards, two Tigers, two Pumas, one White-tailed Deer and one Moose.

This is the fourth time an Indian Rhinoceros has been born in captivity in the world, and the second time at Whipsnade. It is the first time Snow Leopards, White-tailed Deer and Moose have been born in the Society's Collection at Regent's Park or Whipsnade.

Developments and Works

During the year the developments needed to accommodate the increasing number of visitors to Whipsnade Park, and the parallel increase in the number of cars brought into the Park, were examined. Both these factors are of vital importance to further planning, for the present arrangements for admitting visitors have become quite inadequate during the summer season. After a careful survey of alternative solutions it was decided to remodel the present entrance completely. In the new layout pedestrians will enter the Park on a different axis from vehicular traffic and will cross the main road from the Car Park by a subway. Work on the latter has been started, and should be completed by the summer of 1961.

In order to allow a reasonable flow of motor traffic and to improve viewing facilities, the roads in the Park are being widened and unnecessary hedges removed.

During the year public lavatories, staff quarters and staff houses have been built. A new Rhinoceros Enclosure and House has been constructed and occupied by a young pair of African Rhinoceros. An annual programme for the replacement of high wire fences by ditches and low fences has been started. Fences on the road side of Round Close and Woodfield Paddock have been completed, and the pond in Round Close has been completely reinstated.

Whipsnade Green

A charge of 2s. 6d. per car was again made during the summer season for parking on that part of the Green adjoining the Park. The total amount received was £603 5s. 0d., of which £135 8s. 7d. was expended on collecting, clearing and improving the whole of Whipsnade Green. Public lavatories were also provided on the Green.

Animals at Whipsnade Park

Animals of all kinds (except Fish and Invertebrates) on 1st January, 1960	1,744
Animals of all kinds (except Fish and Invertebrates) received in 1960 by presentation, exchange, deposit and purchase, and transferred from Regent's Park	200
Animals of all kinds (except Fish and Invertebrates) born in the Park during 1960	553
	<hr/> 2,497
Animals of all kinds (except Fish and Invertebrates) dead, sold, sent in exchange or returned to depositors, and transferred to Regent's Park in 1960	545
Animals of all kinds (except Fish and Invertebrates) on 31st December, 1960	<hr/> 1,952

SCIENTIFIC ACTIVITIES

Scientific Meetings

Eight Scientific Meetings were held during the year and 67 papers accepted for publication were communicated or read in title. Many other communications were made at the meetings, including the presentation of a film on open-boat whaling in the Pacific by W. H. Dawbin; a description of the fine structure of foetal-maternal relationships in the placenta of Cervidae by Professors R. J. Harrison and W. Hamilton with Dr B. A. Young; Professor C. G. Sibley discussed hybridization in the Red-eyed Towhees of Mexico, giving a study of the evolution of reproductive isolation in birds; Dr Desmond Morris gave his views on the origins of courtship displays; Professor R. D. Purchon showed a film entitled 'The Malayan seashore' and Dr M. Hildebrand gave an illustrated talk on slow motion studies of the running cheetah and horse; Mr R. N. Fiennes described the comparative anatomy of the posterior vena cava with reference to the mechanisms of shock and Dr L. Harrison Matthews presented a film entitled 'Faune Cavernicole'.

Symposia

Symposia were held on 4th March, 24th May and 9th November. The Symposium in March was organised in collaboration with Professor O. E. Lowenstein, F.R.S., of Birmingham University and was entitled 'Sensory specialization in response to environmental demands'; the subject of the May Symposium was 'Tuberculosis in animals', which was organised in collaboration with Sir John Ritchie, C.B.E., of the Ministry of Agriculture, Fisheries and Food; the November meeting on 'Vertebrate Locomotion' was organised in collaboration with Professor J. E. Harris, F.R.S., of Bristol University. All Symposia, which were open to any scientist who wished to be present as well as to Fellows of the Society, were very well attended.

Publications

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON

Ten Parts of the 'Proceedings' were published, including Parts 3 and 4 of Volume 133, which had been held over from 1959 because of the delay caused by a dispute in the printing industry. Volume 134 was completed in four parts on the 2nd September and Volume 135 on the 9th December. The papers contained in these volumes

represented a wide range of subjects in the zoological sciences including: W. F. H. ANSELL, 'Breeding of some larger mammals in Northern Rhodesia'; HERWART BOHLKEN, 'Remarks on the stomach and the systematic position of the Tylopoda'; E. ELKAN, 'Some interesting pathological cases in amphibians'; R. N. T-W-FIENNES, 'Report of the Society's Pathologist for the year 1958'; F. I. VAN EMDEN, 'Keys to the Ethiopian Tachinidae - III Macquartiinae'; S. A. BARNETT, 'Social behaviour among tame rats and among wild white hybrids'; C. J. DUNCAN, 'The evolution of the pulmonate genital system'; P. L. KROHN, 'The duration of pregnancy in Rhesus monkeys *Macaca mulatta*'; J. R. NAPIER, 'Studies of the hands of living primates'; NELLIE F. PATERSON, 'The inner ear of some members of the Pipidae (Amphibia)'; R. D. PURCHON, 'The stomach in the Eulamellibranchia: stomach types IV and V'; M. L. RYDER, 'A study of the coat of the mouflon *Ovis musimon* with special reference to seasonal change'; H. K. BUECHNER, A. M. HARTHOORN and J. A. LOCK, 'The immobilization of African animals in the field, with special reference to their transfer to other areas (U.S. Translocation)'; P. H. GREENWOOD and K. S. THOMSON, 'The pectoral anatomy of *Pantodon buchholzi* Peters (a freshwater flying fish) and the related Osteoglossidae'; EDWARD J. POPHAM, 'On the respiration of aquatic Hemiptera Heteroptera with special reference to the Corixidae'; KATHLEEN J. RIGG, R. FINLAYSON, C. SYMONS, K. R. HILL and R. N. T-W-FIENNES, 'Degenerative arterial disease of animals in captivity with special reference to the comparative pathology of atherosclerosis'; THELMA E. ROWELL, 'On the retrieving of young and other behaviour in lactating golden hamsters'; OLIVE S. TATTERSALL, 'Report on a small collection of Mysidacea from Singapore waters'; H. and MARGARET BARNES, 'Recent spread and present distribution of the barnacle *Elminius modestus* Darwin in North-west Europe'; A. BOLLIGER and T. C. BACKHOUSE, 'Blood studies of the echidna *Tachyglossus aculeatus*'; ARTHUR M. CHICKERING, 'Six new species of *Micrathena* (Araneae, Argiopidae) from South America with notes on known species'; T. S. JONES and A. J. E. CAVE, 'Diet, longevity and dental disease in the Sierra Leone chimpanzee'; E. J. W. BARRINGTON, 'Some features of the vascularization of the hypothalamus and pituitary stalk in the minnow *Phoxinus phoxinus* L.'; JOHN A. WALLWORK, 'Observations on the behaviour of some oribatid mites in experimentally-controlled temperature gradients'.

TRANSACTIONS OF THE ZOOLOGICAL SOCIETY OF LONDON

A monograph by Professor D. M. S. Watson on the anomodont skeleton was published as Part 3 of Volume 29 of the 'Transactions' on the 31st October.

SYMPOSIA OF THE ZOOLOGICAL SOCIETY OF LONDON

Three numbers of this new series, instituted to contain the communications presented at the Symposia held by the Society, were published. The first number, published on the 13th June under the general title of 'Hormones in fish', contains the proceedings of the Symposium held on 13th October 1959, and No. 2 entitled 'Cyclical activity in endocrine systems', containing the papers communicated at the Symposium held on 8th December 1959, was published on the 24th August. The papers read and discussed at the Symposium held on 4th March 1960 were published in No. 3 under the title of 'Sensory specialization in response to environmental demands'.

NOMENCLATOR ZOOLOGICUS

Dr A. Tindell Hopwood, the honorary editor of the 'Nomenclator Zoologicus', is preparing the copy for the supplementary volume containing the names of new genera and sub-genera from the literature for 1946-1955.

ZOOLOGICAL RECORD

Volume 94, recording the zoological literature published mainly in the year 1957, was published in October. Five further sections of Volume 95, a record of the literature for 1958, have been published and the remaining sections are in the press. Two sections, Porifera and Aves, of Volume 96, recording the literature for 1959, have been published and the sections, Mammalia, Arachnida and Comprehensive Zoology are in the press.

Beginning with Volume 96 the Zoological Record will be of a larger format, designed to decrease the bulk of the volume and make for easier reference. Because of heavy printing costs it has been necessary to increase the price of the volume and of the separate sections. The income from sales does not cover the cost of production of this bibliography and its continued publication depends to a large extent on donations to the Zoological Record Fund. A complete list of the donations received during 1960 is given in Appendix 8, page 51.

The amount of published literature to be recorded increases annually and the Society is greatly indebted to the individual Recorders who carry out the heavy task of compiling this valuable reference work.

INTERNATIONAL ZOO YEARBOOK

The International Zoo Yearbook, a new publication designed to provide an authoritative channel for the international exchange of information about zoos, was launched this year.

Early in 1960 the Secretary of the Society wrote to the Zoo Directors of the world asking for their co-operation in compiling the Yearbook. The response was generous and more than 200 zoos replied to the detailed questionnaire sent out by the Yearbook editors, Dr Desmond Morris and Miss Caroline Jarvis. The present volume is the result.

The Yearbook is divided into three sections. The first deals with a special topic, the keeping of apes in captivity, to which various authorities were invited to contribute. The second section deals with the general problems which affect the maintenance and administration of zoos and with new developments which have taken place in zoos throughout the world during 1959. The third is a reference section providing information of the type that can be tabulated or listed. It includes lists of the zoos in the world; of the senior zoo staff of the world; of the zoology departments of the universities of the world and the names of their professors; international animal dealers; of the magazines, pamphlets and journals published by zoos; and of the species of mammals and birds bred by zoos during 1959 and the zoos where they were bred, in addition to a survey of mammalian gestation periods. The Yearbook is illustrated and costs £2 per copy.

Research

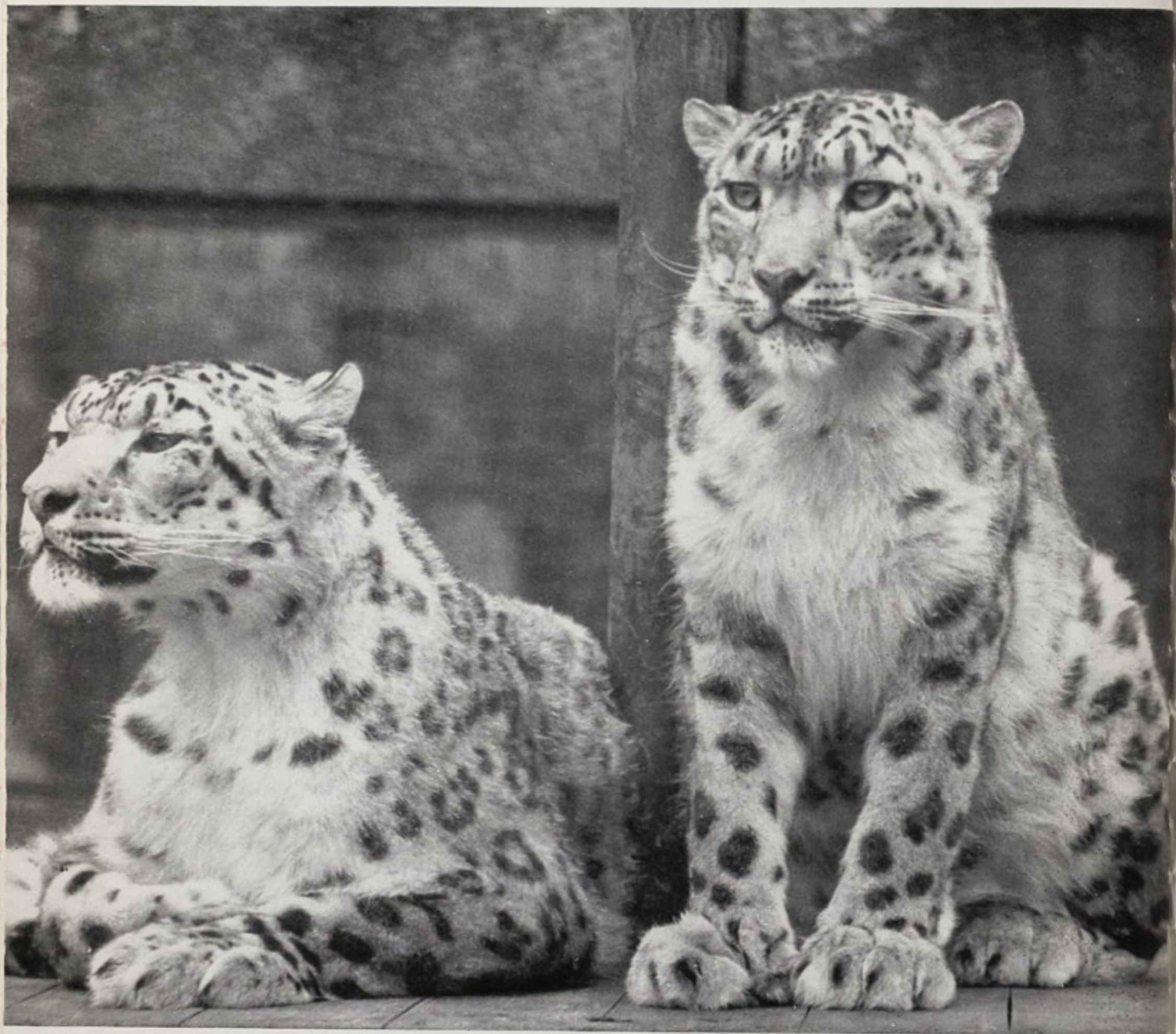
In collaboration with Professor N. Millott of Bedford College, Dr H. G. Vevers is continuing his investigation of the histochemistry of the axial organ in echinoids. This organ, of uncertain function, has been found to contain significant amounts of mucopolysaccharide. The occurrence of melanin in the tropical echinoid *Diadema antillarum* was to be expected, but it has now been found that much of the red-brown coloration of the axial organ in this species is due to the presence of chromolipoid.

The breeding of octopus in the Society's Aquarium has provided an opportunity to study the behaviour of the female at this time. A short paper on this subject is in preparation and the resident Film Unit (jointly established by the Society and Granada TV Network) has produced a film showing the brooding by the female octopus, the position of the eggs and the newly-hatched larvae.

Dr W. C. Osman Hill, the Prosector, has continued his researches in primate anatomy with special reference to the Platyrrhini. In the early months of 1960 he secured a fresh specimen of the rare Woolly Spider Monkey, *Brachyteles arachnoides*, and the remainder of the year has been taken up in its detailed study. This work has now been completed and the results will shortly be published. Further progress has also been made on the study of cutaneous glands in Primates.



Indian Rhinoceros – 'Mohini' – and second calf, born August 1960. *Keystone Press*



Snow Leopards in Whipsnade Park. *Zoological Society of London*

Mr R. N. Fiennes, the Pathologist, has continued his research on 'stress' conditions in animals, on diseases of the skeleton, on the anatomy of the venous system in relation to disease, and on cardio-vascular diseases, in collaboration with a group of external workers. A detailed study of the vascular system has been made over the past three years in the case of some 500 specimens from mammals, birds and reptiles.

Dr D. J. Morris, the Curator of Mammals, has continued the supervision and development of technical research into animal display techniques by the Zoological Technician.

Under the supervision of Dr Morris, Mr J. van Hooff of Utrecht University has been making an investigation into function, causation and evolution of facial expressions in mammals. These behaviour patterns play an important role in the social communication systems of certain groups of mammals, notably the higher primates, the Canidae and Felidae. An analysis of these expressions and their motivational relationships is of great value, both to our understanding of mammalian communication and from the point of view of the welfare of captive animals.

Mr L. E. Richdale has been provided with a room and library facilities while he writes up his work done in New Zealand on tubinarine birds.

Research grants have been made to Mr Guy Mountfort, Honorary Secretary of the British Ornithologists' Union, towards the cost of an expedition to Bulgaria, and to Mr V. Reynolds to enable him to complete his studies on the social behaviour and structure of the colony of Rhesus monkeys at Whipnade.

Clinical Departments

VETERINARY SECTION, REGENT'S PARK

Mr O. Graham-Jones, the Veterinary Officer, has undertaken a considerable amount of clinical research to estimate the efficiency and desirability of many ataractic drugs, the so-called tranquillisers. It is hoped that they may prove of use in the easier handling of patients, and in assisting a newly arrived animal to settle down. No effort has been spared to maintain the efficiency of the animals' health service and, where possible, to improve it; one important new feature is an electrically driven animal ambulance specially designed to transport animals to and from the Hospital with the minimum of noise or disturbance. The average recovery rate of all notified sick animals for the year was 85%; during the third quarter the recovery rate was 90% – the highest yet achieved.

The total number of cases passing through the Hospital was 232 and the number of animals passing through under quarantine regulations was 42. 239 cases were

referred to the Out Patients' Department: 86 budgerigars, 26 monkeys and 127 various animals. 141 new arrivals were admitted for a health check.

WHIPSNADE PARK

Veterinary activities during 1960 have again been directed primarily towards preventive medicine and the maintenance of general health. Professor B. G. Peters, of Imperial College, arranged for a team of students to spend part of their Easter vacation on a field investigation to determine the degree of infestation of the pasture of a small selected group of paddocks, having regard to the known infestation of the stock therein. Pasture samples showed very variable results. The proper maintenance of the pasture was shown to be a major factor in keeping down the danger of reinfestation, particularly the value of keeping the herbage short so that eggs and larvae of parasitic worms are exposed to a high degree of desiccation.

PATHOLOGY LABORATORY

During the year 396 autopsies were made on animals from amongst the resident acclimatised populations at Regent's Park. A further 378 autopsies were made on newly arrived unacclimatised animals and animals received from external sources. The death rate is again the lowest recorded. Diagnostic reports were made during the year on 650 specimens from living animals.

Specimens for pathological examination (skin, lungs, kidneys, serum specimens, blood and bile), have been supplied to a number of external workers with whom close contact has been maintained.

WHIPSNADE PARK

Mr Martin Senior carried out 259 necropsies: 133 on birds, 124 on mammals, 2 on reptiles. Mr C. Halnan carried out 11 necropsies: 6 on birds, 4 on mammals, 1 on a reptile. The Pathologist at Regent's Park carried out 6 necropsies on mammals and the Prosector 1 necropsy on a mammal.

The Ministry of Agriculture, Fisheries and Food at Weybridge carried out 4 necropsies: 2 on birds, 2 on mammals. The Cooper Research station carried out 1 necropsy on a mammal.

PROSECTORIUM

A considerable quantity of material has been prepared for further study and disposal to other workers. Most of this has been received from the Pathologist after autopsy, but a proportion of the material previously reserved for morphological examination has been subjected to post-mortem examination by the Prosector and reports thereon sent to the Pathologist.

The stock of preserved material has now been completely catalogued, after two years' work.

The following workers have been given laboratory space during the year:—

Dr H. H. Fleishhacker, working on cerebral anatomy.

Mr B. Hephrun, working on blood and vascular anatomy.

Library

Extensive use was made of the Library by Fellows, staff, the TV Unit and visiting scientists from abroad, and book loans numbered 4,996. 172 books and 6,940 parts of 979 periodicals were added to the Library during the year.

The retyping of the Author Catalogue has been completed.

Conferences and Visits

Dr L. Harrison Matthews attended the Annual Conference of the International Union of Directors of Zoological Gardens, at Cologne and Paris. Dr Matthews continues to serve as a member of the Board of Studies in Zoology and Comparative Anatomy (including Paleo-zoology) in the University of London and was President of the Association of British Zoologists (1959-60).

Major-General C. J. G. Dalton and Miss E. Owen visited six continental zoos, and Mr F. A. Stengelhofen visited the Zoological Gardens, Basle, during the course of the year.

Mr R. N. Fiennes attended, as a member, the first meeting of the World Health Organization Advisory Committee on Comparative Aspects of Cardio-vascular Diseases, held in Geneva.

Dr W. C. Osman Hill attended the first Reunion of European Anatomists at Strasbourg and made a communication on 'The Soft Parts of a North American Indian'.

Dr H. G. Vevers attended the International Congress of Aquariology at Monaco, where he gave a paper on the maintenance and breeding of *Octopus vulgaris* in an inland aquarium and exhibited a film on this subject made in the Society's Aquarium by the Zoological Society/Granada Film Unit.

Dr Vevers continued to serve as Honorary Secretary of the Association of British Zoologists and was elected Zoological Secretary of the Linnean Society of London.

Mr E. H. Tong attended the Annual Conference of the International Union of Directors of Zoological Gardens, and visited Frankfurt and Clères Zoos. Mr Tong was elected Treasurer of the International Union of Directors of Zoological Gardens, and re-elected Chairman of the Selection Committee for new members and Chairman of the Constitution Steering Committee.

EDUCATIONAL ACTIVITIES

Lecture-Demonstrations for School Pupils

The Education Scheme continues to meet with increasing success. During 1960 the length of the autumn term was increased, with a corresponding increase in the number of visits by pupils from Secondary Schools and students from Technical Colleges.

During the past year 17,166 pupils have taken part in the scheme. This represents an increase of 23.5% over the numbers attending in 1959. As is to be expected, the majority of these pupils come from schools in the Greater London area, but schools from towns as far away as Rye, Cheltenham and Birmingham have also sent pupils. Additionally, a number of students from Teachers' Training Colleges have attended the lectures to observe the teaching methods and visual aids employed, and to study the work-sheets provided for use by pupils during the tour of selected animal houses which follows each lecture.

The programme provides lectures on various topics for three different levels of pupils, and many schools attend every lecture appropriate for their pupils. New topics introduced during the past year include 'Animal behaviour' for pupils studying for Advanced Level of the General Certificate of Education, 'The variety of mammals' for those working for the ordinary level of G.C.E., and 'The food of animals' for pupils of 11-13 years of age. The lectures are well illustrated by films, especially film loops, illustrating animal movement and behaviour, and live animals are used for demonstration purposes.

During the spring two courses for University Students were held, and were well attended, as was a two-day course for students from Training Colleges.

Young Zoologists' Club

Membership of the Club, which exists to foster the interests of young people between 11 and 18 years of age, in natural history and zoology, has been maintained during the year.

Zoo Magazine, the Club Journal, has been published three times during the year in an enlarged form, and has received favourable comment from several educational authorities. The centre pages of the magazine constitute a guide to popular groups of animals, and reprints of these pages have been made available for purchase by non-members of the Club. Thanks are due to those who have generously contributed articles to the magazine.

Club meetings, which are held at Regent's Park during the school holidays, have been well attended. Meetings this year have included a Brains Trust, at which members were able to put questions to a panel consisting of the Earl of Cranbrook,

Mr Maxwell Knight, Dr H. G. Vevers and Dr D. J. Morris, under the chairmanship of Dr L. Harrison Matthews. At other meetings members saw films, kindly lent by Granada TV Network, and heard lectures by the Earl of Cranbrook, Lord Medway and Dr W. P. Crowcroft.

The Club competitions have proved increasingly popular, and some of the entries have reached a very high standard.

Members continue to bombard the Club Information Bureau with questions, some of which prove surprisingly difficult to answer, and reveal the breadth and scope of the members' interest in animals. There can be no doubt that the Club is fulfilling a very real need in catering for such interests.

TV and Film Unit

During 1960 the filming activities of the Unit have been considerably increased. A series of 26 films under the generic title of 'A - Zoo' was undertaken; these are designed primarily for Children's Hour viewing on TV, and deal each week with a different letter of the alphabet. However, these films are not restricted to animals with names which happen to begin with the appropriate letter, but cover a wider field. For instance, under the letter 'H' a film was made about the Zoo's new Hospital; under 'T' the subject of 'Tails' was discussed and illustrated. The first of this series was transmitted on Wednesday, 19th October.

In addition, considerable progress has been made with filming for another series dealing more specifically with animal behaviour.

It is interesting to note that some of the Animal Story series made during 1959 have recently been transmitted at the adult viewing hour of 10.30 p.m., and it is encouraging that the viewing figures were the highest recorded for this particular time.

The film library of animal material continues to expand and has been recently reinforced by some 12,000 feet of colour material shot in Africa. The material in the library, which is indexed and cross-referenced, is available for scientific purposes.

Apart from films, sixteen 'Zoo Time' outside broadcasts have been transmitted from the Zoo over the TV network during 1960.

There seems no doubt that there is a widespread appetite for zoological programmes and for real information about animals, their habits and relationships.

Christmas Lectures

Three meetings for the children of Fellows and Associates of the Society and their friends were held during the Christmas holidays. Two lectures - 'The behaviour of animals in zoos' by Dr D. J. Morris, and 'Bats' by the Earl of Cranbrook, and a showing of Mr David Attenborough's film 'Zoo Quest in West Africa' - were all well attended by appreciative audiences.

STAFF

At the end of the year the staff of the Society, excluding the Catering Department where the numbers fluctuate considerably, totalled 366. A list of senior members of the staff is given in Appendix 2.

Retirements

Several members of the staff retired on pension during the year, including:

Mr S. A. Westwood – retired 30th November, 1960, owing to ill-health. He joined the staff as Assistant Accountant in April 1938, and was appointed Accountant in May, 1942. Since December 1945 he held the joint appointment of Accountant and Clerk to the Council, and the Council take this opportunity of recording their gratitude for his devoted service to the Society.

Mrs J. O’Gorman – retired 30th June, 1960 after 36 years’ service in the Members’ Restaurant.

Mrs A. Renton – retired 30th June, 1960 after 38 years’ service in the Members’ Restaurant.

Mrs A. Rycroft – retired 30th June, 1960 after 28 years’ service in the Members’ Restaurant.

Obituary

The Council regrets to report the death of Mrs L. Strange on 28th November, 1960. She had been housekeeper in the Keepers’ Lodge at Regent’s Park since June, 1940.

The Council records, with great regret, the death of Mr E. W. Dexter, Head Keeper of Reptiles, who lost his life on Wednesday, 28th December, in an accident which occurred while a firm of Artesian Well Engineers were modernising the deep well in the Reptile House. Two of the workmen were overcome by carbon dioxide gas; Mr Dexter who went to their aid was also overcome by the fumes, and all three died later from carbon dioxide poisoning. At the inquest a verdict of accidental death was recorded by the Coroner. Mr A. Hodgson, a helper in the Reptile House, also answered the call for help and at the time of going to press was still desperately ill.

Mr Dexter, who had been employed by the Society since 1928, was a very valued and skilled member of the staff and will be sadly missed by his colleagues.

Appointments and Promotions

Mr M. K. Boorer was appointed to the post of Education Officer on 29th February, 1960, in place of Mr D. G. Lambert.

Mr W. N. Pickford was appointed to the post of Chief Accountant on 1st November, 1960 in succession to Mr S. A. Westwood.

Mr C. H. Johns, previously Assistant Accountant, was appointed to the post of Establishments Officer.

Mr J. W. West was appointed to the new post of Deputy to the Director, Whipsnade Park, on 16th September, 1960.

Mr B. W. Smith was promoted to the new post of Deputy Overseer (Mammals) at Regent's Park on 21st November, 1960.

Mr M. Carding was appointed, on 17th October, 1960 to the new post of Clerk of Works for the rebuilding work at Regent's Park and Whipsnade.

Other Staff Matters

An extensive survey of the administrative organization was carried out during 1960 by professional consultants and, as a result of their recommendations, it has been possible to regroup and 'streamline' certain departments with a view to achieving greater efficiency and economy.

New salary and wages scales were negotiated for all sections of the staff during the year. Agreement was also reached on new conditions of service for all manual workers (other than catering employees) at both Regent's Park and Whipsnade.

Retirement Presentations

The Council decided to make a presentation to retiring members of the staff who had faithfully served the Society for not less than 25 years; a brooch in enamel and silver representing the crest of the coat of arms was designed for women members of the staff, and a clock bearing the full coat of arms was chosen for the men.



Mountain Gorilla: 'Reuben'. *Fox Photos*



Rufous Fishing Owl (right) and Spix's Scops Owl (left). *Fox Photos*

ACKNOWLEDGMENTS

The Society is indebted for gifts of specimens to: H.H. The Ameer of Bahawalpur, G.C.I.E., K.C.S.I., K.C.V.O., Mr D. A. Brameld, The Rt Hon. The Earl of Cranbrook, Mr J. C. Davidson, Mr G. B. Eastmure, Dr A. J. Haddow, C.M.Z.S., Mr A. I. Lee-tham, Mr J. A. Looker, Mr J. Menzies, Mr G. H. Newmark, Mr J. R. Newmark, Mr G. Randau, Mr S. M. Reynolds, Capt. D. Scorgie, Dr K. C. Searle, C.M.Z.S., Dr R. Paulian, Mr T. Spence, Mr J. E. Sutton, Mr Michael J. Tyler, and to the Game Warden and members of the Game and Fisheries Department in Uganda for assistance in obtaining the Mountain Gorilla.

In addition the following Zoological Societies have made valuable gifts or sent interesting animals to Regent's Park on an exchange basis: The Royal Zoological Society of Antwerp, The Zoological Gardens, Calcutta, The Zoological Gardens, Copenhagen, The Zoo Centre, Moscow, The Monaco Aquarium, The New York Zoological Society, The North of England Zoological Society, The Paignton Zoological and Botanical Gardens and The South Australian Zoological and Acclimatization Society.

Senhora Hermione Blandy de Freitas Martins and Senhor João de Freitas Martins, C.M.Z.S., of Madeira, who have continued to take a lively interest in the Society's Aquarium, sent several valuable collections of marine animals.

The following have rendered valuable assistance to the Veterinary Officer: Professor W. Weipers, Professor G. Howe, Professor W. Miller, Dr E. L. Taylor, Astro-Hewlett Ltd., The Royal National Orthopaedic Hospital, Stanmore, The Royal Veterinary College, Dr K. Tolderlund of the Statensseruminstitut, Copenhagen, The Wellcome Foundation, the Pfizer Laboratories Limited, John Wyeth and Sons, Roche Laboratories, Parke-Davis Laboratories and the Glaxo Laboratories.

The Society is grateful to the following for assistance at Whipsnade: Mr J. E. Nigel Sloan, parasitologist at the Cooper, MacDougall and Robertson Field Research Station at Berkhamsted, for identification of parasites; Dr H. D. Holt, Director of the Public Health Laboratory, Luton, for bacteriological investigation; Dr J. Brian Shaw, of the Luton Chest Clinic; Dr J. Kelsall Thomas of Dunstable; Dr P. Jewel and Dr P. Keene of The Royal Veterinary College.

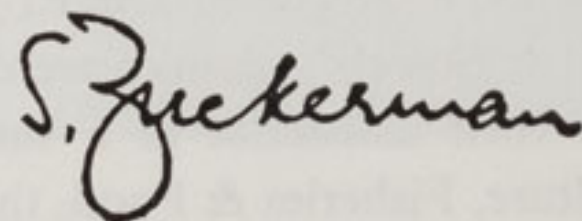
The Society's thanks are due to the following Ministries and public Institutions for their assistance in a variety of ways: The Admiralty, the Ministry of Agriculture, Fisheries & Food, the Board of Trade, H.M. Customs & Excise, the British Museum (Natural History), the Royal Botanic Gardens, Kew, the Public Health

Departments of the Corporation of the City of London, and of the Metropolitan Boroughs of Hampstead and St Marylebone.

In the sphere of shipping and transport the following companies and corporations have given valuable co-operation: Air France, the American Express Company Incorporated, the Antwerp Steamship Company Limited, Ben Line Steamers Limited, the Booker Line, British European Airways, the British India Steam Navigation Company Limited, the British Overseas Airways Corporation, British Railways, British United Airways Limited, Brown, Jenkinson & Company Limited, the Canadian Pacific Steamships Limited, the Donaldson Line Limited, the Elder Dempster Lines Limited, T. & J. Harrison Line, Hernu Peron & Stockwell Limited, Houlder Brothers & Company Limited, Killick Martin & Company Limited, the London Transport Executive, McAndrews & Company Limited, L. W. Morland & Company Limited, Wm H. Muller & Company Limited, Munro Transport, J. F. Obree & Son Limited, Pacific Steam Navigation Company, Pan American World Airways, the P. & O. Steam Navigation Company Limited, the Port Line Limited, Qantas Airways, the Royal Dutch Airlines, the Royal Mail Lines Limited, Sabena Belgian World Airlines, the Shaw Savill Line, the South American Saint Line Limited, Frank Strick & Company Limited, the Union-Castle Mail Steamship Company Limited, the United Shipping Company Limited, J. B. Westray & Company Limited and Mark Whitwell & Son Limited.

As in the past, the Society is grateful to the Rt Hon. The Earl of Leicester for his kindness in providing evergreen oak for the giraffes, and thanks are also due to the following who have presented quantities of bamboo for the Giant Panda: Dr F. Alberts, Mrs C. L. Arnold, Mr H. A. Bartlett, Miss F. M. Bennett, Mr E. W. S. Berry, Mrs W. Blazier, the Rev. F. J. E. Britnell, Mr A. Cake, Mr M. C. Clark, Mrs M. Davidson, Mrs E. H. Eckersley, Mrs P. Jackman, Miss D. Leschallas, Mr H. N. Mackin, Miss P. K. McLeod, Mr W. K. McDermott, Mrs G. Matthews, The Odney Club, Mrs D. Paddock, Mrs E. Painter, Mr E. W. Pike, The Polkerris Boy Scout Troop, Mrs N. Probyn, Mrs M. Stanton, Mrs E. E. Thomas, Mr T. P. Vandeleur, Mrs S. E. Williams, The Lady Clementine Waring.

Mr Ivan Seymour has rendered valuable assistance by providing a continuous supply of earthworms for the kiwi.



SECRETARY

APPENDIX 1

Committees 1960-61

Gardens and Park Committee

The Rt Hon. Viscount Boyd of Merton, C.H.
 The Rt Hon. The Earl of Cranbrook, C.B.E., M.A.,
 Treas.L.S.
 The Hon. Mrs Hugh Fraser
 S. Wilson Kitchen
 The Rt Hon. The Earl of Mansfield
 Lady Bridget Parsons
 Michael W. Perrin, C.B.E., M.A., B.Sc., F.R.I.C.
 Air Chief Marshal Sir James Robb, G.C.B., K.B.E.,
 D.S.O., D.F.C., A.F.C., F.S.A.
 Air Vice-Marshal G. Silyn Roberts, C.B., C.B.E., A.F.C.,
 M.Sc., F.R.Ae.S.
 Peter Scott, C.B.E., D.Sc., M.A., *Chairman*
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 Frank Yates, Sc.D., F.R.S.
Secretary: The Controller

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 Raymond Greene, M.A., D.M., F.R.C.P.
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 D. M. Ross, M.A., Ph.D.
 T. H. Savory, M.A.
 Geoffrey Schomberg
 Professor J. Eric Smith, M.A., Sc.D., F.R.S.
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N. B. Marshall, M.A.
The Hon. Ivor Montagu
H. W. Parker, C.B.E., M.A., D.Sc.
N. D. Riley, C.B.E.
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Lt-Col. W. P. C. Tenison, D.S.O., F.L.S.
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LL.D., *Chairman*
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E. O. Pearson, M.A.
N. D. Riley, C.B.E.
Cyril J. Stubblefield, D.Sc., F.R.S.
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Consulting Architect: Sir Hugh Casson, M.A., R.D.I.,
F.R.I.B.A., F.S.I.A.
Consulting Landscape Architect: Peter F. Shephard,
B.Arch, F.R.I.B.A., A.M.T.P.I., F.I.L.A.
Honorary Parasitologist: Mrs H. G. Fantham (Dr Annie
Porter), D.Sc., F.L.S.
Honorary Herpetologist: A. d'A. Bellairs, M.A., D.Sc.,
M.R.C.S.
Honorary Consulting Ophthalmologist: Sir Benjamin
Rycroft, O.B.E., M.D., Ch.B., D.O.M.S., F.R.C.S.
Consulting Veterinary Surgeon (Whipsnade): Martin
Senior, M.R.C.V.S.
Honorary Consultant: Geoffrey M. Vevers, F.R.C.S.
Adviser on Labour Relations: E. Bishop, O.B.E.
Medical Referee: J. P. Horder, M.A., M.B., B.Ch.(OXON),
M.R.C.P.(LOND.)

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

APPENDIX 2

Staff

HEADQUARTERS

Scientific Staff

Scientific Director: L. Harrison Matthews, M.A., Sc.D.,
F.R.S.
*Curator of the Aquarium (Acting Curator of Reptiles,
Acting Curator of Invertebrates):* H. Gwynne Vevers,
M.B.E., M.A., D.Phil., Sec.L.S.
Curator of Birds: J. J. Yealland, F.L.S.
Curator of Mammals: D. J. Morris, B.Sc., D.Phil.
Veterinary Officer: O. Graham-Jones, M.R.C.V.S.
Prosecutor: W. C. Osman Hill, M.D., F.R.S.E., F.L.S.
Pathologist: R. N. Fiennes, M.A., M.R.C.V.S.
Librarian and Clerk of Publications: G. B. Stratton,
M.B.E., A.L.S.

Administrative Staff

Controller: Major-General C. J. G. Dalton, C.B., C.B.E.
Chief Accountant: W. N. Pickford, M.M., A.C.I.S.
The Private Secretary: Miss Grace E. Gay
Architect: F. A. Stengelhofen, L.R.I.B.A.
Establishments Officer: C. H. Johns, D.P.A.
Head of General Department: Miss E. Owen, O.B.E., B.A.
Education Officer: M. K. Boorer, B.Sc.

REGENT'S PARK

Administration

Catering Manager: W. N. Hill, F.H.C.I.
Supplies Officer: C. G. Nicholls, M.P.O.A.
Transport Executive: C. G. Harwood
Head Gardener: H. Hemmings
Gardens Executive: L. M. Flewin
Clerk of Works: F. J. Myers

Overseers

Aquarium: F. C. Akhurst
Insects: G. J. Ashby
Birds: J. Ward
Reptiles: A. R. Lanworn
Mammals: H. Vinall
Deputy Overseer Mammals: B. W. Smith

Senior Head Keepers

North Mammal House: J. C. T. Alldis
Cattle Sheds: J. Pullen
Monkeys: L. G. Smith

Head Keepers

Pheasantry: R. Barrow
Antelope and Zebra: A. J. Cotterill
Reptiles:
Insects: R. P. Humphrys
Elephants: F. E. G. Jones
Bird House: D. G. Newson
Aquatic Birds and Birds of Prey: G. F. Newson
Children's Zoo: W. E. Peckett
Giraffe House: H. G. N. Robinson
Lion House: T. W. Sangster
Ostrich House and Eastern Aviary: A. E. Scrivener
Parrot House: A. F. Shambrook
Camel House and Mappin Terrace: R. S. Smith
Small Mammals: H. W. Styles
Aquarium: H. L. Ward
Bears and Mappin Terrace: S. Morton

Hospital Superintendent: A. T. Wilson

WHIPSNADDE PARK

Administration

Director: E. H. Tong, F.L.A.S.
Deputy to the Director: J. W. West, B.Sc.
Assistant to the Director: E. D. Day
Catering Manager: E. G. Rhodes
Head Gardener: R. Tully
Overseer: O. C. Chamberlain
Head Attendant, Children's Zoo: Miss G. Impey

Senior Head Keeper

Elephant Section: L. Gladman

Head Keepers

Bird Section: R. Hazzard
Bear Section: A. Matthews
Carnivores Section: F. Meakins
Giraffe Section: L. Warner
Pheasant and Parrakeet Aviaries: B. Simmons
Camel Section: G. Stanbridge

Publications by Society's Staff

- FIENNES, R. N. T-W- (1960) Tuberculosis of a Puma cub (*Felis concolor*) accompanied by skeletal deformities resembling rickets.
Proc. zool. Soc. Lond., **133**, 593-595.
- FIENNES, R. N. T-W-, & JONES, O. Graham (1960) Studies of a nutritional disease (*Osteodystrophia fibrosa*) of a young lion associated with changes of the skeleton and symptoms of muscular weakness.
Proc. zool. Soc. Lond., **133**, 573-591
- FIENNES, R. N. T-W-, RIGG, Kathleen J., FINLAYSON, R., SYMONS, C., & HILL, K. R. (1960) Degenerative arterial diseases of animals in captivity with special reference to the comparative pathology of atherosclerosis.
Proc. zool. Soc. Lond., **135**, 157-164.
- FOX, H. Munro and VEVERS, Gwynne (1960) *The nature of animal colours*. London, Sidgwick & Jackson.
- HILL, W. C. Osman, & WADSWORTH, J. R. (1960) Some comments on neoplasia in cage birds.
Mod. vet. Pract. Mar. 1, p.53.
- HILL, W. C. Osman (1960) Mesogastric viscera in *Ateles* (Spider-monkeys).
Proc. zool. Soc. Lond., **133**, 651-652.
- HILL, W. C. Osman (1960) *PRIMATES; Comparative anatomy and taxonomy*, Vol. IV - Cebidae, Edinburgh, University Press.
- JONES, O. Graham (1960) Some notes on the monkey.
J. small anim. Prac., **1**, no. 1, April.
- JONES, O. Graham (1960) A case of strangulated scrotal (inguinal) hernia in a monkey.
J. small anim. Prac., **1**, no. 2, August.
- MATTHEWS, L. Harrison (1960) Integumentary sex characters in vertebrates.
Mem. Soc. Endocrin., no. 7, 134-143.
- MATTHEWS, L. Harrison (1959) Man and the world's Fauna.
The Advancement of Science, no. 62, 43-54.

Publications based or partly based on material received from The Zoological Society

- BOWDEN, R. E. M., MAHRAN, Z. Y., & GOODING, M. R. (1960) Communications between facial and trigeminal nerves in certain mammals.
Proc. zool. Soc. Lond., **135**, 587-611.
- JAMES, W. Warwick (1960) *The Jaws and Teeth of Primates*. London, Pitman Medical Publishing Co.
- LLOYD, H. E. D. (1959) Arteriosclerosis in certain wild animals dying in captivity.
J. comp. Path., 69-98.
- NAPIER, J. R. (1960) Studies of the hands of living Primates.
Proc. zool. Soc. Lond., **134**, 647-657.
- NIMMO-SMITH, R. H. (1960) Aromatic N-deacylation by chick kidney mitochondria.
Biochem. J., **75**, 284.

List of Genera, Species and Subspecies new to the Collection

44 new genera, species and subspecies were added to the collection in the year as compared with 60 for 1959.
(The figures placed before each name indicate its approximate position in the current Vertebrate List.)

Mammalia

- 107b *Lagothrix cana olivacea* (Spix). Olivaceous Woolly Monkey. (South America)
 118b *Ateles geoffroyi ornatus* (Gray). Ornate Spider Monkey (Costa Rica)
 178a* *Setifer setosus setosus* (Schreber). Spiny Tenrec. Madagascar
 178b* *Setifer setosus nigrescens* (E. Geoffroy). Spiny Tenrec. Madagascar
 194a* *Eptesicus serotinus* (Schreber). Serotine Bat. (Europe and Africa)
 861a *Choloepus hoffmanni capitalis* (J. A. Allen). White-headed Sloth. (South-eastern Colombia)
 943a *Caluromys derbianus* (Waterhouse). Derbian Opossum. (South and Central America)

Aves

- 1537a *Fregata andrewsi* Mathews. Christmas Island Frigate Bird. (Eastern Indian Ocean)
 2292a *Ortalis erythroptera* Sclater & Salvin. Chestnut-winged Guan. (Western Ecuador and N.W. Peru)
 1840a *Glareola maldivarum* J. R. Forster. Eastern Pratincole. (Eastern Asia—Australia)
 1881a* *Larosterna inca* (Lesson). Inca Tern. (Western Coast of South America)
 1131c *Myiopsitta monachus cotorra* (Vieillot). Quaker Parrakeet. (Paraguay)
 1341a *Scotopelia ussheri* Sharpe. Rufous Fishing Owl. (Tropical West Africa)
 991d *Colibri delphinae* (Lesson). Brown Violet-eared Humming Bird. (Central and Tropical South America)
 985b *Amazilia tzacatl jucunda* (Heine). Heine's Humming Bird. (Ecuador)
 1023a *Momotus momota microstephanus* Sclater. Sclater's Motmot. (North-western parts of South America)
 1036a *Eurystomus glaucurus glaucurus* (P.L.S. Muller). Cinnamon Roller (Madagascar and East Africa)
 580a* *Dendronanthus indicus* (Gmelin). Forest Wag-tail. (East and South-east Asia)
 757a *Luscinia brunnea* (Hodgson). Indian Blue Robin. (Himalayas, India and Ceylon)
 861b *Muscicapa sibirica* Gmelin. Sooty Flycatcher. (East and South-east Asia)
 657b *Aegithaliscus concinnus rubricapillus* (Ticehurst). Red-headed Tit. (Eastern Himalayas)
 362a *Cyanerpes caeruleus isthmicus* Bangs. Isthmian Honey Creeper (Central America)
 265b *Ploceus galbula* Ruppell. Ruppell's Weaver. (North-eastern Africa and Western Arabia)

* Genus new to the collection

Reptilia

- 6a *Kinosternon flavescens* (Agassiz). Yellow Mud-Terrapin. Western North America.
 140a *Amyda ferox aspera* (Agassiz). Gulf Coast Soft-shelled Turtle. South-eastern United States.
 198b *Phelsuma lineatum* Gray. Day Gecko. Madagascar.
 253b *Hoplurus sebae* (Dumeril & Bibron). Madagascar
 261a *Agama leucostigma* Reuss. Arabia.
 290b *Chamaeleo bitaeniatus ellioti* Günther. Montane Side-striped Chameleon. Mountains of Western Uganda, Belgian Ruanda-Urundi and the adjacent Congo.
 329b *Riopa anchietae* (Bocage). Western Serpentine Skink. Western Kenya, Tanganyika and south to Northern Rhodesia and Angola.
 541b *Coluber (Zamenis) florulentus smithi* (Boulenger). Southern Flowered Snake. Ethiopia and Somalia, south to Kenya.
 592a *Lampropeltis doliata amaura* Cope. Louisiana Milk Snake. Southern Central North America.
 608b *Atractus reticulatus paraguayensis* Werner. Paraguayan Reticulated Snake. Paraguay.
 712b *Atheris nitschei* Tornier. Great Lakes Bush-Viper. Uganda; S.W. Tanganyika Territory, Belgian Ruanda-Urundi; Congo, Misubu Mountains and N.W. Nyasaland and N. Rhodesia.

Amphibia

- 42a *Pseudhymenochirus merlini* Chabanaud. French and Portuguese Guinea and Sierra Leone.
 116a *Rana (Conrana) goliath* Boulenger. Goliath Frog. British and French Cameroons to Spanish Guinea.

Pisces

- Polypterus retropinnis* Boulenger. Congo
Denticeps clupeoides Clausen. Nigeria
Arapaima gigas (Cuvier). Arapaima. Tropical South America
Chriopeops goodei Jordan. Blue-fin Top Minnow. Florida
Anabas testudineus (Bloch). Climbing Perch. India, Ceylon and S.E. Asia
Belontia signata (Günther). Combtail. Ceylon
Colisa fasciatus (Bloch & Schneider). Giant Gourami. India
Trichogaster trichopterus (Pallas). Three-spot Gourami. S.E. Asia

APPENDIX 5

List of Donors of Animals to the Society

REGENT'S PARK

- Aal, Mrs J., 1 British Jay
 Adams, Miss D., 2 American Catfish
 Alexander, F. C., 1 Pike
 Alexander, Mrs P., 1 Rabbit
 Almgill, P., 1 Stag Beetle
 Amitai, P., 1 Grey Monitor, 1 Dark Green Snake
 Andrews, J., 1 Ring-necked Parrakeet
 Armstrong, Mrs L., 1 Fischer's Lovebird
 Austin, Major F., 1 White-cheeked Bulbul
 Ayling, E., 1 Larger Patagonian Conure

 Baber, J., 3 Common Bream, 1 Common Tench
 Bahawalpur, H.H. The Ameer of, 2 Yak
 Bates, Miss L., 1 Rabbit
 Batey, Mrs H., 1 Common Marmoset
 Batts, B. C., 1 Kestrel
 Bennett, Miss C., 1 Greek Tortoise
 Berman, H., 2 Raft Spiders
 Black, J., 1 Tettigoniid Grasshopper
 Boardman, Miss H., *Bombyx mori* larvae
 Bowden, J., C.M.Z.S., 1 Eritrean Shikra, 2 Masked Lovebirds
 Braithwaite, Mrs B. M., 1 Blackish Terrapin
 British Broadcasting Corporation Television Service, The, 1 Ruffed Lemur, 10 Mouse Lemurs, 1 Tailless Tenrec, 7 Spiny Tenrecs, 1 Vasa Parrot, 5 Madagascar Lovebirds, 1 Cinnamon Roller, 1 Dwarf Mannikin, 9 Madagascar Weavers, 4 Radiated Tortoises, 1 Green Gecko, 1 Fringed Gecko, 8 Chameleons (not yet identified), 2 *Hoplorus sebae*, 3 Sganzin's Tree Boas, 5 Millipedes, 80 Pill Millipedes
 Brown, J., 4 Cape Lopez Lyretails
 Brown, N. H., 1 Knot
 Buckley, Professor J. J. C., 2 Springhaas
 Bucknall, 2/Lt. N. C., 1 Indian Cobra, 1 King Cobra
 Bunney, R. W., 7 Kingfishers
 Burgess, Miss C., 1 Fischer's Chameleon
 Burkett, J., 1 Stoat

 Campanini, J., 2 Catfish, *Clarias*, 1 Firemouth Cichlid
 Campbell, Miss J., Stick Insects
 Channing, Mrs Y., 1 Grey Singing Finch, 1 Cuban Finch, 1 Golden-breasted Waxbill, 3 Cordon-bleu, 1 Green Avadavat, 1 Lavender Finch, 1 Long-tailed Grass Finch, 1 Zebra Finch, 1 Orange Weaver, 1 Combasou
 Chaplin, The Rt Hon. The Viscount, 2 Pacific Coast Hylas
 Christenson, Master J., 1 Stag Beetle
 Christie, L., 3 Silver Water Beetles

 Chruleo, Mrs C. J., 1 Goldfinch
 City of Durban, T.M.V., 1 Black-footed Penguin
 Clark, D., Spiders, *Dolomedes fimbriatus* and *Atypus affinis*
 Clarke, H., 1 Greek Tortoise
 Cobain, W. T., 1 Rhinoceros Beetle
 Coleridge, W. L., Cocoon of *Heteropoda venatoria*
 Cook, M. S. J., 2 Crab-eating Opossums
 Cornelius, L. W., 1 Common Scoter
 Corner, D., 1 Vervet Monkey
 Cosgrove, H. O., 1 Tropical House Spider
 Coulter, W., 1 Long-horned Grasshopper, 1 Stag Beetle
 Court, P., 1 Three-striped Boa
 Cranbrook, The Rt Hon. The Earl of, 2 Serotine Bats
 Crouch, R. T., 1 Long-tailed Glossy Starling
 Curry, Mrs L., 1 Cordon-bleu

 Dancer, Mrs J., 1 Rabbit
 Darch, Mrs J., bequest, 1 Greek Tortoise
 Davidson, J. C., 1 Angwantibo
 Davies, The Reverend Conway, 1 Short-tailed Vole
 Davies, Mrs P., 1 Red-crested Cardinal
 Davis, D. A., 2 Ornate Terrapins
 Delahunty, B., 1 Coypu
 Denne, J., 1 Common Chameleon
 Derek, D. S., 1 Serrated Terrapin
 Drury, R. W., 1 Mrs Wilson's Tanager, 1 Isthmian Honey Creeper
 Dunger, Dr Gerald T., 2 Red-and-Black Skinks, 1 Royal Python, 1 Egg-eating Snake, 1 Blanding's Snake, 2 Night Vipers
 Dutton, P., 1 Fischer's Lovebird, 1 Hybrid Fischer's x Masked Lovebird

 Easten, Miss E. H., 1 Greek Tortoise
 Eastmure, G. B., 1 Hoolock Gibbon, 1 Leopard (black variety)
 Edney, Professor E. B., 1 Meller's Chameleon
 Edrich, B., 2 Rabbits
 Eldridge, V. G., 1 Rosy-faced Lovebird
 England, Mrs M., 1 Greek Tortoise

 Fairley, Miss S., 1 Ornate Terrapin
 Farner, H., 1 Scolopendra
 Farquharson, F. L., 6 *Peripatopsis*, 4 *Opisthopatis*
 Fiennes, Master G., 1 Alexandrine Parrakeet
 Flower, Mrs S., 1 Greek Tortoise
 Foster, Mrs A. R., 1 Mona Monkey
 Fox, Professor H. Munro, 1 Connemara Sucker
 Freshwater Biological Association, 36 Char

- Gardiner, W. A., 1 Hunting Spider, *Torania variata* with cocoon
 Garner, L. T., 2 Green Lizards
 Gates, The Reverend R. H., 2 Indian Shamas
 Glasgow, H., 1 Common Marmoset
 Glass, Miss S., 1 Striped Skunk
 Golding, Mrs K., 1 Greek Tortoise
 Goldsmith, V., 1 Royal Python
 Gomez, Dr S. C., 1 Rufous-necked Weaver
 Good, Mrs M., 1 Guinea Pig
 Gorham, S. W., 1 Stink-pot Mud Terrapin, 6 Painted Terrapins, 1 Sculptured Terrapin, 4 Ribbon Snakes, 1 Mud-puppy, 12 Spring Peepers, 9 Common American Tree Frogs, 4 Wood Frogs
 Granada Television Network Film Unit, The, 3 Flying Lizards, 10 Miller's Thumbs
 Green, F. J., 1 *Petrognatha gigas*
 Green, Miss J., 1 Rabbit
 Griffin, R., 1 Stag Beetle
 Gunner, C. P., 1 Guillemot
- Haddow, Dr A. J., B.Sc., C.M.Z.S., 3 de Brazza's Monkeys, 1 Grey-cheeked Mangabey, 4 Agile Mangabeys, 12 Great Field Rats
 Hall, J. H., Mole Crickets
 Hallott, R. C., 1 Giant Toad
 Hamilton, D. S., 2 Marbled Cichlids, 1 Sucker Fish
 Hamilton, H. and Ionides, C. J. P., C.M.Z.S., 1 African Sand Snake, 1 Boomslang, 1 Gaboon Viper
 Hamman, J., 1 Spix's Hyla
 Hanison, H., 1 Spider, *Brachypelma vagans*
 Hanmon, Master P., 2 Spanish Terrapins
 Harwood, S. M., 1 Greek Tortoise
 Heath, Miss G., 1 Axolotl
 Henchy, Mrs E. M. A., 1 Black-headed Honey Creeper
 Henry, D. M. Reid-, 1 Cheela Eagle
 Hibbert, Mrs R., 1 Tufted Capuchin
 Hill, Mr and Mrs N. T., 1 Garden Tree Boa, 1 Cascavel Rattlesnake
 Hipperson, Mrs E., 2 Troost's Terrapins, 1 Elegant Terrapin, 1 Spanish Terrapin
 Hooper, Mrs B. and Oxford, Miss J., 24 Millipedes, 1 Bird-eating Spider, 2 Hermit Crabs
 Horniman Museum, The, 1 Mississippi Alligator
 Horton, B., 1 *Scolopendra*
 Howard, K., 1 Grey Monitor
 Howard, Mrs K. M., 4 Greek Tortoises
 Humphreys, Mrs P., 1 Guinea Pig
 Hunt, Mrs D., 2 European Hares
 Hutton, A. F., 1 Western Serpentine Skink, 1 Green Night Viper
- Inkston, Mrs J., 2 Budgerigars
 Ionides, C. J. P., C.M.Z.S., 2 Storm's Water Cobras, 1 Black-and-White Cobra
- Jackson, J., 1 Domestic Sheep
 Jarrold, A. H., 1 Indian White-Eye, 1 Virginian Cardinal, 1 White-throated Finch, 1 Green Singing Finch, 1 Common Waxbill, 1 St. Helena Waxbill, 1 Golden-breasted Waxbill, 1 Avadavat Finch, 1 Parson Finch, 2 Indian Silverbills, 1 Java Sparrow, 1 Combasou, 15 Canaries
 Jarvis, C., 1 *Scutigera*
 Johnson, Dr R., 1 Flat-headed Terrapin
 Jones, D. D., 1 Ring-tailed Lemur
 Jones, F. Elwyn, Q.C., 1 Grey Parrot
 Jones, Miss S. Puys-, 1 Rabbit
- Kefford, R. W. K., 1 Crab Spider
 Kelly, P., 1 Bird-eating Spider, *Tapinauchenius*
 Kemp, Miss S. W., 1 Moth, *Telea polyphemus*
 Kenyon, Mrs F. W., 1 Greater Sulphur-crested Cockatoo
 Kilburn, R. B., 2 Cordon-bleu
 King, T., 1 Giant Tortoise
 Kitchener, H. J., Atlas moth eggs and cocoons
 Knudsen, The Reverend P., 1 Tufted Capuchin
- Laden, L., 1 Clown Barb
 Lawson, F., 2 Greek Tortoises
 Leakey, Dr L. S. B., C.M.Z.S., 1 Southern Flowered Snake
 Leatham, A. I., 2 Leopards (1 black variety)
 Lilley, T., Small number of tropical ants
 Litchfield, Mrs E., 2 Avadavat Finches
 Looker, J. A., 1 Jungle Cat, 2 Small Indian Civets, 2 Indian Palm Squirrels
 Lord, D. J., 2 Upland Geese
 Lovelock, Mrs L., 1 Greek Tortoise
 Lunn, Dr H. Fletcher, 1 Mantis *Sphodromantis centralis*
- Macintosh, Mrs L., 2 Greek Tortoises
 Manton, Dr S., 2 Margay Cats, 2 Crab-eating Opossums
 Marks, Miss A. Y., 2 Guinea Pigs
 Marks, B. M., 6 *Arapaima gigas*
 Matthews, Dr L. Harrison, Cochineal insects
 Mayzner, Mme André, 1 Syrian Bulbul
 Meggitt, Mrs E., 1 Greek Tortoise
 Menzies, J. I., 1 Rufous Fishing Owl, 1 Schweigger's Hinged Tortoise, 2 Blackish Terrapins, 5 Frogs, *Pseudhymenochirus merlini*, 1 Lepidopteran pupa, Mud cells of Mining Bees (Andrenidae)
 Metropolitan Police, The, 1 Greek Tortoise, 1 Great House Gecko
 Miller, J., 1 Guillemot, 2 Five-bearded Rockling, 1 Greater Pipefish, 2 Common Blennies, 2 Dabs, 17 Common Sole, 18 Hermit Crabs
 Mills, E. W., 1 Spectacled Cayman
 Mills, M. J., 1 Crab-eating Monkey, 1 Olive Baboon
 Ministry of Agriculture, Fisheries and Food, 2 Spiders, *Heteropoda venatoria*

Mitchell, H. R., 1 Bird-eating Spider
Morgan, Master P., 1 European Pond Tortoise
Mullins, R., 1 Short-horned Grasshopper, 1 Millipede,
1 Tropical House Spider
Muscat, Major J. H., 1 Grey Monitor

Newberry, Mrs C., 8 Bitterling
Newmark, G. H. and J. R., F.Z.S., 2 Eastern Pratincoles,
1 Bengal Pitta, 3 Forest Wagtails, 1 Indian Blue
Robin, 2 Sooty Flycatchers, 2 Red-headed Tits, 2
Himalayan Yellow-backed Sunbirds, 1 Mrs Wilson's
Tanager, 2 Yellow-shouldered Marsh Birds, 1
Madagascar Weaver, 1 Napoleon Weaver, 2 Kenya
Vitelline Weavers, 2 Ruppell's Weavers, 1 Moorish
Magpie, 1 Bearded Greaved Tortoise, 6 Moorish
Geckos, 1 Bibron's Agama, 4 Algerian Skinks, 3
Eyed Skinks, 1 Algerian Sand Lizard, 2 Leconte's
Sharp-nosed Snakes, 1 Montpellier Snake, 2 Pleuro-
dele Newts, 1 Painted Frog, 4 Moroccan Toads,
1 Elephant-trunk Fish, 1 Mole Cricket, *Gryllotalpa*,
1 Ant Lion larva, *Myrmeleon*, Eggs of Praying Mantis,
3 Hunting Beetles (Carabidae), 3 Tiger Beetles
(Cicindelidae), 3 Beetles (Buprestidae), 9 Oil Beetles
(Meloidae), 10 Dung Beetles (Scarabeidae), 40
Desert Beetles (Tenebrionidae), 1 Beetle (Staphy-
linidae), 1 Fire-fly Beetle (Lampyridae), 2 Silver
Striped Hawk Moths, 6 *Latrodectus tredecimguttatus*,
1 Crab Spider (Sparassidae), 5 Hunting Spiders,
Lycosa, 1 False Spider, 26 Desert Scorpions, 1
Brown Clawed Scorpion
Newsome, Dr J., 1 Sacred Baboon
Nicholls, Mr and Mrs A. C., 1 Abyssinian Lovebird
Northcote, Mrs J. Stafford, 1 Cuckoo
Nottingham University, Plant Bugs, *Oncopeltus* and
Dysdercus
Nutkins, T., 2 Rabbits

Oakley, Mrs J., 1 Common Marmoset
Oliphant, J. M., 1 ootheca of *Sphodromantis lineola*
Omis, Master S. J., 12 House Mice

Paulian, Dr R., 4 Brown Lemurs
Paxman, P., 1 Chameleon
Pearson, M., 4 Golden Hamsters
Penfold, Mrs V., 1 Little Owl
Phillips, Eric J., C.M.Z.S., 1 Broad-snouted Cayman,
5 Sharp-nosed Syclop Lizards, 1 Rainbow Boa,
1 Emperor Boa, 1 Rope Snake, 1 Merrem's Boipeva
Snake, 1 Paraguayan Reticulated Snake, 1 Triply-
barred Coral Snake, 1 Reinhardt's Tree Snake, 1
Schott's Snake, 1 Short-tailed Coral Snake, 2
Crossed Vipers, 9 South American Dwarf Toads
Philpott, Mrs B., 2 Guinea Pigs
Presco, Mrs. J., 1 Catfish, *Clarias*, 2 Marbled Cichlids

Quick, Miss L., 50 Stick Insects and eggs

Randau, G., 2 Blue-breasted Humming Birds, 4 Blue-
backed Manakins, 1 Violet Tanager, 1 Blue Dacnis
Rapperswil, Young people of the town of, 1 Fallow
Deer

Read, G., 1 Blanding's Snake
Reay, W. H., 20 Land Hermit Crabs (Coenobitidae),
2 *Achatina* snails
Reeves, Mrs M., 1 Barn Owl
Reynolds, S. M., 1 Arabian Fox
Robynfirth, Miss J., 1 Elliot's Two-banded Chameleon
Roots, C., 68 Land Hermit Crabs
Roxburgh, Mrs L., 2 Nonpareil Buntings
Royal College of Nursing, 30 Rainbow Trout
Royal Society for the Prevention of Cruelty to Animals,
The, 1 Common Chameleon, 1 Dark Green Snake
H.M.S. Ruthven, The Captain and Ship's Company,
1 Somali Black-headed Fat-tailed Sheep

Sampson, Mrs G. N., 1 Crab-eating Monkey
Sams, I., 2 Smooth Snakes
Schickendantz, J. H., 2 Rosy-faced Lovebirds
Schiller, P. W. C., 2 Snake-headed Fish
Scorgie, Captain D., 1 Red-footed Gannet, 1 Christmas
Island Frigate Bird, 107 Land Hermit Crabs, 14
Land Crabs (Gecarcinidae), 1 Racing Crab
Scotland, The Royal Zoological Society of, 1 Robust
Plated Lizard
Searle, Dr K. C., C.M.Z.S., and Brameld, D. A., 2
Malaysian Fruit Bats, 1 Malay Civet, 3 Black
Prevost's Squirrels, 2 Blue-crowned Hanging
Parrakeets, 3 Two-banded Monitors
Selman, F. C., 1 Guillemot
Semakula, S. B., 29 Cockroach ootheca, 11 Butterfly
chrysalids, 1 Millipede
Seychelles, Government of, 3 Giant Tortoises
Shorey, D. J., 1 *Agama leucostigma*, 1 Thomas's Dabb
Lizard, 2 Desert Skinks
Sibthorp, Miss D., 1 Bird-eating Spider, *Avicularia*
Simmonds, Dr F. J., 1 Senegal Chameleon
Skeaping, C. and C., 24 *Mantis religiosa* (and 4
oothecae)
Smith, Master H., 6 Beetles, *Copris hispanicus*, 1
Beetle, *Geotrupes mosnus*
Spence, T., 1 Horned Screamer, 1 Razor-billed
Curassow, 1 Prince Albert's Curassow, 1 Chestnut-
winged Guan, 2 Green Peafowl, 1 Uganda Green
Pigeon, 1 Orange-breasted Green Pigeon, 2 Hooded
Crows
Sport, I. W., 1 Ornate Spider Monkey
Spurling, J., 1 Stag Beetle
Steel, O., 9 Guinea Pigs
Stobbs, A. R., 1 Chimpanzee
Stokes, E. G., 1 Illiger's Macaw
Strelley, S. L., 4 Pike, 2 Indian Catfish, *Clarias*

- Sugden, Dr E. C., 1 Temminck's Snapper, 1 Black-pointed Tegu
 Sutcliffe, Dr A. J., 2 Great Lakes Bush-Vipers
 Sutcliffe, D., 1 Elegant Terrapin
 Sutton, J. E., 1 Cheetah
 Sylvester, M. G., 3 British Great Spotted Woodpeckers
- Temple, C. W. J., 1 Greek Tortoise
 Terrey, Miss Marilyn, 1 Golden Hamster
 Thomas, E. C., 1 Ornate Terrapin
 Thorne, Mrs J., 1 Greek Tortoise
 Thorneloe, Mrs E., 1 Smoky Woolly Monkey
 Tillot, Dr S., 1 Slow Loris
 Tombs, F., 6 Rosy Tetras, 6 Harlequin Fish, 4 Bronze Catfish, 6 Platys, 2 Argus Fish, 4 Firemouth Cichlids, 8 Keyhole Cichlids, 2 Barred Cichlids, 4 Dwarf Cichlids
 Transcontinental Film Productions (London) Limited, 1 Indian Grey Mongoose
 Turner, Mrs D. M., 2 Greek Tortoises
 Tyler, M. J., 2 Silver-grey Phalangiers
- van den Brink, J. J., 1 Quetzal
 van Hooff, R. H. Th., 3 Lions
 Voak, B., 1 Rhinoceros Beetle
- Vosper, H. J., Helomyzid flies and spiders, *Meta menarchi* and *M. merianae*
- Wade, M. H., 1 Cheetah
 Waite, J. B., 1 Common Chameleon
 Wall, Mrs E., 1 Quaker Parrakeet
 Wallis, T., 1 Greek Tortoise
 Ward, The Reverend K. E., 1 European Pond Tortoise
 Warren, Mrs J. M., 2 Serrated Terrapins
 Whitaker, N. H., 3 Land Crabs, *Cardisoma*, 2 Land Snails, *Achatina*
 Williams, Mrs I., 1 Festive Parrot
 Williams, J., Mantis oothecae, Pentatomid bugs, Hawk-Moth pupae, Spider cocoons
 Wilson, J., 1 Land Hermit Crab
 Winner, Mrs P., 1 Tufted Capuchin
 Wood, Mrs H., 1 Ornate Terrapin
 Worms, M. J., 1 Black-tailed Mongoose
 Worrall, A. T., 1 Crossbill
 Worsfold, E. A., 1 Sclater's Spot-nosed Monkey
- Yuile, P. G., 1 Thick-tailed Bush Baby
- Zarb, Miss E. M., 1 Long-eared Hedgehog
 Zilliacus, Mrs J., 1 Mona Monkey

WHIPSNADDE PARK

- Albany, Mrs, 2 Blue-rumped Parrots, 1 Alexandrine Parrakeet
 Crome, Mrs, 1 Roseate Cockatoo
 Mclagen, Mrs, 1 Green-winged Macaw
 Nairobi National Park, 2 Caracal Lynx
- Senior, Martin, 6 Buff Pekin Bantams
 Thorneloe, Mrs, 1 Smoky Woolly Monkey
 van den Brink, J. J., 2 Lesser White-fronted Geese
 Vernon, H. P. Mrs, 12 Barbary Turtle Doves (white variety)

APPENDIX 6

*List of Animals (Excluding Domestic Varieties)
Born in the Society's Collection*

(The figure in brackets following an item indicates the number which have died.)

REGENT'S PARK

Mammalia

- 1 de Brazza's Monkey
- 1 Mandrill (1)
- 2 Common Marmosets (1)
- 1 Ring-tailed Lemur
- 2 Senegal Bush Babies
- 4 European Hedgehogs (3)
- 1 Malaysian Fruit Bat
- 3 Jungle Cats (1)
- 6 Pumas
- 9 Dingoes (6)
- 3 Polecat-Ferrets
- 1 Syrian Bear
- 15 Great Field Rats (1)
- 4 Orange-rumped Agoutis
- 1 Chinchilla
- 1 Big-horned Sheep
- 5 Mouflon (1)
- 10 Barbary Wild Sheep (2)
- 1 Saiga Antelope (1)
- 2 Beisa Oryx (2)

- 1 Giraffe
- 1 Spotted Deer
- 2 Hog Deer
- 1 Timor Deer

Aves

- 1 Great Grey Tinamou
- 2 Black-footed Penguins (1)
- 3 Cormorants
- 1 Night Heron
- 1 Red-breasted Goose
- 1 Upland Goose
- 2 Common Shelduck
- 2 Chiloe Wigeon
- 1 Red-crested Pochard
- 3 Californian Quail
- 1 Temminck's Tragopan
- 1 Impeyan Pheasant
- 2 Black-breasted Kalij Pheasants
- 2 Swinhoe's Pheasants

- 2 Reeves's Pheasants
- 2 Elliot's Pheasants
- 1 Sonnerat's Jungle Fowl
- 2 Ceylon Jungle Fowl
- 5 Lady Amherst's Pheasants
- 3 Common Peafowl (white variety)
- 2 Sarus Cranes (1)
- 4 Silver Gulls
- 10 Cockatiels (1)
- 2 Rosy-faced Lovebirds (2)
- 5 Fischer's Lovebirds
- 3 Snowy Owls
- 3 Spotted Eagle Owls
- 2 Great Eagle Owls
- 10 Zebra Finches

Reptilia

- 20 Ribbon Snakes
- 5 Boa Constrictors (3)

WHIPSNADDE PARK

Mammalia

- 1 Rhesus Monkey
- 2 Tigers
- 2 Pumas
- 2 Snow Leopards
- 8 Timber Wolves (2)
- 6 Brown Bears
- 1 Prairie Marmot
- 4 Alpine Marmots
- 1 Beaver
- 1 Crested Porcupine
- 1 Mongolian Wild Horse
- 1 Common Zebra
- 1 Great Indian Rhinoceros
- 2 American Bison
- 6 Mouflon (5)
- 1 White-tailed Gnu
- 4 White-bearded Gnus (2)
- 5 Thomson's Gazelles (2)
- 2 East African Eland
- 3 Nilgai (2)
- 2 Muntjac

- 6 Fallow Deer (4 dark variety)
- 1 Spotted Deer
- 3 Hog Deer
- 2 Swamp Deer (1)
- 1 Sika Deer
- 8 Formosan Deer
- 12 Red Deer
- 4 Wapiti Deer (1)
- 5 Père David's Deer
- 1 White-tailed Deer
- 1 Moose
- 64 Chinese Water Deer (4)
- 2 Bactrian Camels
- 6 Llamas (1)
- 3 Guanacos (1)
- 9 Collared Peccaries (1)
- 1 Hippopotamus (1)
- 60 Bennett's Wallabies

Aves

- 1 Black-footed Penguin

- 4 Whooper Swans (2)
- 2 Black-necked Swans
- 12 Greater Snow Geese (2)
- 5 Grey Lag Geese
- 7 Barnacle Geese (1)
- 18 Canada Geese
- 9 Red-breasted Geese
- 2 Upland Geese
- 5 Egyptian Geese
- 1 South African Shelduck
- 1 Carolina Duck
- 1 Mandarin Duck
- 4 Reeves's Pheasants
- 10 Golden Pheasants
- 3 Lady Amherst's Pheasants
- 50 North American Turkeys (2)
- 45 Common Peafowl (6)
- 1 Great Black-backed Gull
- 5 Cockatiels
- 3 Yellow-headed Conures
- 1 Masked Lovebird
- 1 Red-rumped Parrakeet

APPENDIX 7

List of Animals Received

(Presented, Purchased, Received in Exchange, Born or Deposited in the Menageries.)

REGENT'S PARK

Mammalia*Order Primates*

- 1 Mountain Gorilla
- 2 Chimpanzees
- 1 Schweinfurth's Chimpanzee
- 1 Hoolock Gibbon
- 4 de Brazza's Monkeys
- 2 Mona Monkeys
- 1 Sclater's Spot-nosed Monkey
- 1 Green Monkey
- 1 Vervet Monkey
- 1 Grey-cheeked Mangabey
- 4 Agile Mangabeys
- 2 Crab-eating Monkeys
- 1 Barbary Ape
- 1 Black Ape
- 1 Olive Baboon
- 1 Sacred Baboon
- 1 Mandrill
- 2 Drills
- 2 White-headed Sakis
- 3 Tufted Capuchins
- 2 Smoky Woolly Monkeys
- 1 Olivaceous Woolly Monkey
- 1 Ornate Spider Monkey
- 5 Common Marmosets
- 3 Red-mantled Tamarins
- 3 Negro Tamarins
- 1 Cotton-headed Tamarin
- 5 Golden Lion Marmosets
- 1 Ruffed Lemur
- 4 Brown Lemurs
- 4 Ring-tailed Lemurs
- 10 Mouse Lemurs
- 1 Slow Loris
- 1 Potto
- 1 Angwantibo
- 2 Senegal Bush Babies
- 2 Thick-tailed Bush Babies (1 black variety)

Order Insectivora

- 4 European Hedgehogs
- 1 Long-eared Hedgehog
- 1 Tailless Tenrec
- 7 Spiny Tenrecs

Order Chiroptera

- 3 Malaysian Fruit Bats
- 2 Serotine Bats

Order Carnivora

- 3 Lions
- 3 Leopards (2 black variety)
- 1 Jaguar
- 4 Jungle Cats
- 2 Bobcats
- 6 Pumas
- 3 Margay
- 2 Cheetahs
- 1 Malay Civet
- 2 Small Indian Civets
- 3 Indian Grey Mongooses
- 1 Black-tailed Mongoose
- 9 Dingoes
- 2 Coyotes
- 2 Black-backed Jackals
- 1 Arabian Fox
- 1 Azara's Fox
- 1 Stoat
- 3 Polecat-Ferrets
- 1 Striped Skunk
- 1 Crab-eating Raccoon
- 7 Red Pandas
- 2 Polar Bears
- 1 Syrian Bear
- 1 Spectacled Bear

Order Pinnipedia

- 2 Californian Sea Lions
- 1 Baikal Seal

Order Rodentia

- 2 Indian Palm Squirrels
- 3 Black Prevost's Squirrels
- 7 Prairie Marmots
- 1 Cameroons Bushy-tailed Dormouse
- 27 Great Field Rats
- 1 Short-tailed Vole
- 4 Springhaas
- 2 Euphrates Jerboas
- 2 Lesser Egyptian Jerboas
- 2 Brazilian Tree Porcupines
- 1 Coypu
- 4 Orange-rumped Agoutis
- 5 Green Acouchys
- 1 Chinchilla
- 2 European Hares

Order Artiodactyla

- 2 Yak

- 1 Cape Buffalo
- 1 Big-horned Sheep
- 5 Mouflon
- 11 Barbary Wild Sheep
- 1 Saiga Antelope
- 2 Blackbuck
- 2 Beisa Oryx
- 1 Giraffe
- 1 Musk Deer
- 1 Fallow Deer
- 1 Spotted Deer
- 2 Hog Deer
- 1 Timor Deer
- 3 Reindeer
- 1 Bactrian Camel
- 1 Guanaco
- 1 Kenya Bush Pig

Order Xenarthra

- 2 White-headed Sloths

Order Marsupialia

- 1 Great Grey Kangaroo
- 2 Black-faced Kangaroos
- 2 Kangaroo Island Kangaroos
- 2 Wallaroos
- 5 Red Kangaroos
- 4 Dama Wallabies
- 1 Highlands Short-headed Flying Phalanger
- 2 Silver-grey Phalangiers
- 4 Crab-eating Opossums
- 1 Derbian Opossum

Order Monotremata

- 1 Echidna

Domestic

- 9 Husky Dogs
- 15 Golden Hamsters (1 albino)
- 12 House Mice
- 65 Guinea Pigs
- 35 Rabbits
- 1 Domestic Ox
- 1 Domestic Sheep
- 2 Domestic Sheep (four-horned)
- 3 Somali Black-headed Fat-tailed Sheep
- 21 Goats
- 4 Pigs
- 7 Viet Nam Pot-bellied Pigs

- Aves**
- Order Tinamiformes*
1 Great Grey Tinamou
- Order Sphenisciformes*
3 Black-footed Penguins
6 Humboldt's Penguins
- Order Pelecaniformes*
1 Red-footed Gannet
3 Cormorants
1 Christmas Island Frigate Bird
- Order Ciconiiformes*
1 Night Heron
2 White Storks
4 Black-necked Storks
- Order Anseriformes*
1 Horned Screamer
1 Red-breasted Goose
3 Upland Geese
2 Common Shelduck
2 Ringed Teal
2 Chiloe Wigeon
1 Red-crested Pochard
2 Pochard
2 Barrow's Golden-Eyes
3 Mandarin Ducks
1 Common Scoter
- Order Falconiformes*
1 Eritrean Shikra
1 Cheela Eagle
1 Kestrel
- Order Galliformes*
1 Razor-billed Curassow
1 Prince Albert's Curassow
1 Chestnut-winged Guan
3 Californian Quail
2 Bob-white Quail
1 Red-legged Partridge
2 Partridges
1 Crimson Horned Tragopan
1 Temminck's Tragopan
1 Impeyan Pheasant
1 Pallas's Eared Pheasant
2 Manchurian Eared Pheasants
2 Black-breasted Kalij Pheasants
2 Swinhoe's Pheasants
1 Edwards's Pheasant
1 Sonnerat's Jungle Fowl
2 Ceylon Jungle Fowl
2 Reeves's Pheasants
2 Elliot's Pheasants
5 Lady Amherst's Pheasants
- 3 Common Peafowl (white variety)
2 Green Peafowl
3 North American Turkeys
- Order Gruiformes*
2 Eastern Sarus Cranes
1 Gough Island Moorhen
- Order Charadriiformes*
1 Knot
2 Eastern Pratincoles
4 Silver Gulls
2 Inca Terns
3 Guillemots
- Order Columbiformes*
1 Uganda Green Pigeon
2 Thick-billed Green Pigeons
1 Orange-breasted Green Pigeon
2 Tambourine Doves
- Order Psittaciformes*
1 Kea
1 Greater Sulphur-crested Cockatoo
10 Cockatiels
1 Hahn's Macaw
1 Illiger's Macaw
1 Larger Patagonian Conure
4 Quaker Parrakeets
1 Festive Parrot
1 Yellow-vented Parrot
1 Grey Parrot
1 Ring-necked Parrakeet
1 Alexandrine Parrakeet
1 Queen Alexandra's Parrakeet
1 Vasa Parrot
7 Madagascar Lovebirds
2 Red-faced Lovebirds
5 Rosy-faced Lovebirds
1 Abyssinian Lovebird
8 Fischer's Lovebirds
1 Hybrid Fischer's x Masked Lovebird
2 Masked Lovebirds
2 Blue-crowned Hanging Parrakeets
- Order Cuculiformes*
2 Senegal Violet Plantain-eaters
2 Senegal Touracos
1 Cuckoo
- Order Strigiformes*
1 Little Owl
3 Spotted Eagle Owls
- 2 Great Eagle Owls
1 Kenya Eagle Owl
3 Snowy Owls
1 Rufous Fishing Owl
1 Barn Owl
- Order Apodiformes*
1 Brown Violet-eared Humming Bird
2 Violet-eared Humming Birds
3 Waterton's Wood Nymph Humming Birds
7 Blue-breasted Humming Birds
4 Red-throated Sapphire Humming Birds
1 Heine's Humming Bird
- Order Trogoniformes*
4 Quetzals
- Order Coraciiformes*
7 Kingfishers
2 Sclater's Motmots
1 Cinnamon Roller
2 Abyssinian Ground Hornbills
- Order Piciformes*
1 Sulphur-and-white-breasted Toucan
3 British Great Spotted Woodpeckers
- Order Passeriformes*
1 Bengal Pitta
4 Blue-backed Manakins
3 Forest Wagtails
1 Syrian Bulbul
1 White-cheeked Bulbul
2 Indian Shamas
1 Indian Blue Robin
2 Sooty Flycatchers
2 Black-headed Sibias
2 Striated Jay Thrushes
2 Red-headed Tits
2 Himalayan Yellow-backed Sunbirds
1 Malachite Sunbird
3 Tacazze Sunbirds
1 Golden-winged Sunbird
1 Buff-bellied Sunbird
1 Uganda Green-headed Sunbird
1 Indian White-Eye
1 Yellow-plumed Honey-eater
1 Violet Tanager
2 Mrs Wilson's Tanagers
1 Blue Dacnis

1 Black-headed Honey Creeper
 11 Yellow-winged Honey Creepers
 1 Isthmian Honey Creeper
 1 Virginian Cardinal
 1 Red-crested Cardinal
 2 Nonpareil Buntings
 1 White-throated Finch
 2 Yellow-shouldered Marsh Birds
 1 Goldfinch
 2 Siskins
 1 Green Singing Finch
 1 Grey Singing Finch
 3 Bramblings
 3 British Bullfinches
 1 Crossbill
 1 Cuban Finch
 1 Common Waxbill
 1 St Helena Waxbill
 2 Golden-breasted Waxbills
 6 Cordon-bleu
 3 Avadavat Finches
 1 Green Avadavat
 1 Common Fire Finch
 1 Lavender Finch
 1 Quail Finch
 1 Crimson Finch
 1 Painted Finch
 1 Fire-tailed Finch
 1 Long-tailed Grass Finch
 1 Parson Finch
 11 Zebra Finches
 2 Indian Silverbills
 1 Java Sparrow (white variety)
 1 Chestnut-breasted Finch
 1 Dwarf Mannikin
 1 Scaly-crowned Weaver
 1 Speckled-fronted Weaver
 10 Madagascar Weavers
 2 Rufous-necked Weavers
 1 Napoleon Weaver
 1 Orange Weaver
 2 Kenya Vitelline Weavers
 2 Ruppell's Weavers
 2 Combassous
 2 Jackson's Whydah Birds
 1 Long-tailed Glossy Starling
 1 Black-headed Oriole
 2 Lanceolated Jays
 1 British Jay
 1 Moorish Magpie
 2 Hooded Crows

Domestic

3 Chinese Geese
 3 Barbary Turtle Doves
 72 Budgerigars
 15 Canaries

Reptilia

Order Testudines

1 Snapper
 1 Temminck's Snapper
 1 Stink-pot Mud-Terrapin
 3 Yellow Mud-Terrapins
 8 Painted Terrapins
 8 Serrated Terrapins
 2 Troost's Terrapins
 3 Elegant Terrapins
 5 Ornate Terrapins
 1 Salt-water Terrapin
 1 Mississippi Map-Terrapin
 3 Spanish Terrapins
 1 Sculptured Terrapin
 2 European Pond Tortoises
 2 Carolina Box Terrapins
 1 Schweigger's Hinged Tortoise
 1 Home's Hinged Tortoise
 31 Greek Tortoises
 2 Leopard Tortoises
 4 Radiated Tortoises
 4 Giant Tortoises
 3 Blackish Terrapins
 6 Bearded Greaved Tortoises
 1 Flat-headed Terrapin
 2 Gulf Coast Soft-shelled Turtles

Order Crocodylia

1 Mississippi Alligator
 1 Broad-snouted Cayman
 5 Spectacled Cayman

Order Sauria

1 Great House Gecko
 6 Moorish Geckos
 1 Green Gecko
 3 Day Geckos
 1 Fringed Gecko
 12 Carolina Anolis Lizards
 5 Sharp-nosed Syclop Lizards
 6 Banded Basilisks
 4 Iguanas
 3 Flying Lizards
 2 *Hoplurus sebae*
 1 *Agama leucostigma*
 1 Bibron's Agama
 1 Thomas's Dabb Lizard
 4 General Hardwicke's Dabb Lizards
 4 Chameleons
 1 Senegal Chameleon
 2 Flap-necked Chameleons
 9 Hoehneli's Two-banded Chameleons
 15 Montane Side-striped Chameleons
 5 Fischer's Chameleons
 3 Jackson's Chameleons

1 Meller's Chameleon
 8 Chameleons (not yet determined)
 2 Stump-tailed Skinks
 2 Red-and-Black Skinks
 1 Western Serpentineform Skink
 4 Algerian Skinks
 2 Desert Skinks
 3 Eyed Skinks
 1 Robust Plated Lizard
 5 Green Lizards
 12 Common Lizards
 3 Wall Lizards
 1 Algerian Sand Lizard
 1 Black-pointed Tegu
 3 Grey Monitors
 3 Two-banded Monitors

Order Serpentes

1 Indian Python
 2 Royal Pythons
 1 Rainbow Boa
 1 Garden Tree Boa
 3 Sganzin's Tree Boas
 5 Boa Constrictors
 1 Emperor Boa
 1 Russell's Sand Boa
 1 Three-striped Boa
 12 Grass Snakes
 24 Ribbon Snakes
 1 Rope Snake
 1 Lindheimer's Chicken Snake
 3 Aesculapian Snakes
 2 Dark Green Snakes
 1 Southern Flowered Snake
 1 Merrem's Boipeva Snake
 2 Smooth Snakes
 2 Leconte's Sharp-nosed Snakes
 1 Louisiana Milk Snake
 1 Paraguayan Reticulated Snake
 1 Egg-eating Snake
 2 Blanding's Snakes
 1 Triply-barred Coral Snake
 1 Reinhardt's Tree Snake
 1 Schott's Snake
 1 Montpellier Snake
 1 African Sand Snake
 1 Boomslang
 2 Storm's Water Cobras
 1 Black-and-White Cobra
 4 Indian Cobras
 1 King Cobra
 1 Short-tailed Coral Snake
 2 Night Vipers
 1 Green Night Viper
 2 Long-nosed Vipers
 2 Gaboon Vipers

- 2 Great Lakes Bush-Vipers
- 2 Crossed Vipers
- 1 Cascavel Rattlesnake

Amphibia

Order Caudata

- 1 Mud-puppy
- 2 Pleurodele Newts
- 1 European Spotted Salamander

Mammalia

Order Primates

- 1 Rhesus Monkey

Order Carnivora

- 2 Tigers
- 2 Snow Leopards
- 3 Northern Lynxes
- 2 Caracal Lynxes
- 2 Pumas
- 2 Brown Hyaenas
- 8 Timber Wolves
- 1 Polar Bear
- 6 Brown Bears

Order Rodentia

- 9 Prairie Marmots
- 4 Alpine Marmots
- 1 Beaver
- 1 Crested Porcupine
- 3 North American Porcupines

Order Perissodactyla

- 1 Mongolian Wild Horse
- 1 Common Zebra
- 1 Great Indian Rhinoceros
- 3 Black Rhinoceroses

Order Artiodactyla

- 3 American Bison
- 6 Mouflon
- 1 White-tailed Gnu
- 4 White-bearded Gnus
- 5 Thomson's Gazelles
- 2 East African Eland
- 3 Nilgai
- 2 Muntjac
- 13 Fallow Deer (4 dark variety)
- 1 Spotted Deer
- 3 Hog Deer
- 2 Swamp Deer
- 1 Sika Deer

Order Salientia

- 5 *Pseudhymenochirus merlini*
- 1 Surinam Toad
- 1 Painted Frog
- 4 Moroccan Toads
- 1 Giant Toad
- 3 European Tree Frogs
- 12 Spring Peepers
- 9 Common American Tree Frogs

2 Pacific Coast Hylas

- 1 Spix's Hyla
- 5 Blacksmith Tree Frogs
- 2 Ridged Escuerzos
- 1 Goliath Frog
- 7 Edible Frogs
- 4 Wood Frogs
- 9 South American Dwarf Toads

WHIPSNADE PARK

- 8 Formosan Deer
- 12 Red Deer
- 4 Wapiti Deer
- 12 Père David's Deer
- 1 White-tailed Deer
- 1 Moose
- 64 Chinese Water Deer
- 2 Bactrian Camels
- 6 Llamas
- 3 Guanacos
- 9 Collared Peccaries
- 1 Hippopotamus

Order Marsupialia

- 61 Bennett's Wallabies

Domestic

- 11 Viet Nam Pot-bellied Pigs

Aves

Order Sphenisciformes

- 1 Black-footed Penguin

Order Ciconiiformes

- 6 Purple Herons
- 10 African Cattle Egrets
- 2 Black Storks
- 2 Black-necked Storks
- 3 Indian Adjutant Storks

Order Anseriformes

- 4 Whooper Swans
- 2 Black-necked Swans
- 12 Greater Snow Geese
- 5 Grey Lag Geese
- 2 Lesser White-fronted Geese
- 7 Barnacle Geese
- 18 Canada Geese
- 9 Red-breasted Geese
- 1 Hawaiian Goose
- 2 Upland Geese
- 5 Egyptian Geese

1 South African Shelduck

- 1 Carolina Duck
- 1 Mandarin Duck

Order Galliformes

- 4 Reeves's Pheasants
- 10 Golden Pheasants
- 3 Lady Amherst's Pheasants
- 2 Manchurian-eared Pheasants
- 52 Common Peafowl (7 white variety)
- 53 North American Turkeys

Order Gruiformes

- 3 Common Cranes
- 2 Lilford's Cranes
- 11 Demoiselle Cranes
- 5 Grey-necked Crowned Cranes
- 6 Purple Gallinules

Order Charadriiformes

- 1 Great Black-backed Gull

Order Psittaciformes

- 1 Roseate Cockatoo
- 5 Cockatiels
- 1 Lear's Macaw
- 1 Green-winged Macaw
- 3 Yellow-headed Conures
- 2 Dufresne's Parrots
- 1 Alexandrine Parrakeet
- 2 Blue-rumped Parrots
- 1 Masked Lovebird
- 1 Red-rumped Parrakeet

Order Passeriformes

- 1 Red-billed Blue Magpie

Domestic

- 48 Red Jungle Fowl
- 12 Barbary Turtle Doves (white variety)
- 3 Budgerigars

APPENDIX 8

Donations to Zoological Record

received during 1960

	£	s	d
Acadian Entomological Society	8	19	0
American Museum of Natural History	177	12	7
American Ornithologists' Union, for Vol. 95	17	13	8
American Ornithologists' Union, for Vol. 96	17	12	9
American Society of Ichthyologists and Herpetologists, for Vol. 95	49	12	2
American Society of Ichthyologists and Herpetologists, for Vol. 96	74	15	7
American Society of Mammalogists	35	6	8
Anonymous	100	0	0
Auckland Institute and Museum	5	5	0
Bombay Natural History Society	5	0	0
British Herpetological Society	2	0	0
British Museum (Natural History)	450	0	0
British Ornithologists' Club	5	5	0
British Ornithologists' Union	15	15	0
British Trust for Ornithology	2	0	0
Chace, Dr F. A.	8	16	0
Challenger Society, for Vol. 96	5	5	0
Challenger Society, for Vol. 97	5	5	0
Chicago Natural History Museum	17	12	9
Conchological Society of Great Britain and Ireland	2	0	0
Duke University, Department of Zoology	17	13	3
Entomological Society of Alberta	3	12	4
Entomological Society of America	70	15	11
Entomological Society of Canada, for Vol. 96	37	3	11
Entomological Society of Canada, for Vol. 97	36	1	1
Entomological Society of Ontario	35	10	6
Harvard University, for Vol. 94	44	6	10
Harvard University, for Vol. 95	44	6	10
Hawaiian Entomological Society	17	12	11
International Council of Scientific Unions	714	5	9
Linnean Society of London	20	0	0
Linnean Society of New South Wales	11	19	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
Marine Biological Association of the United Kingdom	5	10	0
Michigan, University of	35	8	4
Naples Zoological Station	10	0	0
New York Zoological Society	35	9	3
Palaeontological Society, for Vol. 94	17	14	2
Palaeontological Society, for Vol. 95	17	12	5
Royal Entomological Society	25	0	0
Royal Society of Tropical Medicine and Hygiene	5	5	0
Smithsonian Institution	35	8	11
Society of Systematic Zoology, for Vol. 94		6	11
Society of Systematic Zoology, for Vol. 95	4	18	2
Society of Systematic Zoology, for Vol. 96	1	19	9
Wellcome Laboratories of Tropical Medicine	17	10	0
Total	2,278	14	5

APPENDIX 9

*Books Presented to the Library**Donor*

- AMERICAN MUSEUM OF NATURAL HISTORY
ANNAMALAI UNIVERSITY
BARNES, CLAUDE T.
BRITISH MUSEUM (NATURAL HISTORY)
TRUSTEES OF
CARRINGTON, RICHARD T. M.
CENTRE CULTUREL AMERICAIN
CHAPMAN AND HALL LTD.
DUNOD (PUBLISHERS) PARIS
ELKAN, E., M.D., L.R.C.P., L.R.C.S.,
L.R.F.P.S.
ELLIOT, MISS M. C.
FALCÃO, DR E. DE CERQUEIRA
GIJZEN, A.
HILL, W. C. OSMAN, M.D., F.R.S.E.,
F.L.S.
HORNIMAN MUSEUM
HOWES, W. J.
HUXLEY, SIR JULIAN SORELL, M.A.,
D.SC., F.R.S.
ILES, GERALD
- Mostly about museums, from the papers of A. E. Parr. 1959
Cytological studies of Melaniidae, with special reference to parthenogenesis and polyploidy. By Joseph Jacob. 1959
The natural history of a Wasatch winter. By Claude T. Barnes. 1959
British Caenozoic Fossils (Tertiary and Quaternary). 1959
Bulletin of the British Museum (Natural History)—
Entomology. Vol. 8, nos. 1-10. Vol. 9, no. 3.
Geology. Vol. 4, nos. 1-5, 7-9. Vol. 5, no. 1
Zoology. Vol. 5, no. 10. Vol. 6, nos. 1-6. Vol. 7, no. 11
Insects and their world. By Harold Oldroyd. 1960
A monograph of the immature stages of neotropical timber beetles (Cerambycidae). By E. A. J. Duffy. 1960
A biography of the sea. By Richard Carrington. 1960
East from Tunis. A record of travels on the north coast of Africa. By Richard Carrington. 1957
John James Audubon: peintre naturaliste américain. 1960
Comparative endocrinology. Proceedings of the Columbia University symposium on comparative endocrinology held at Cold Spring Harbor, New York, May 25 to 29, 1958. Edited by Aubrey Gorbman. 1959
L'Évolution des vertébrés inférieurs. Quelques problèmes. By J. P. Lehman. 1959
Terrarienkunde. By Wilhelm Klingelhöffer. 1931
The UFAW handbook on the care and management of laboratory animals. Edited by Alastair N. Worden. 1947.
Birds and I. By Leslie Brown. 1947
Birds on the wing. By John Barlee. 1947
Pirajá da Silva. O incontestável descobridor do "*Schistosoma mansoni*". By E. de Cerqueira Falcão. 1959
Das Okapi (*Okapia johnstoni* Sclater). By A. Gijzen. 1959
Primates: comparative anatomy and taxonomy. IV. Cebidae. Part A. By W. C. Osman Hill. 1960
A survey of the animal kingdom (A handbook to the collections in the Horniman Museum), 3rd edn. By G. E. Williams. 1959
Tropical aquaria. 1960
The quest for barbel. By W. J. Howes. 1960
Ptitsy Sovetskogo Soyuz, 6 vols. By G. P. Dementev and others. 1951-54
At home in the Zoo. By Gerald Iles. 1960

- IRAQ NATURAL HISTORY MUSEUM
- Birds of Iraq. Vol. 1. General ornithology. Podicipitiformes-Falconiformes. By Bashir E. Allouse. 1960
- Reptiles of Iraq, with some notes on the amphibians. By Kamel T. Khalaf. 1959
- JAMES, W. WARWICK, O.B.E.,
F.R.C.S., F.L.S.
- The jaws and teeth of primates. By W. Warwick James. 1960
- KALABUKHOV, PROF. DR N. I.,
C.M.Z.S.
- Ékologiya zveriĭ i ptits lesostepnyĭkh dubrav. By G. A. Novikov. 1959
- Fiziologiya sutochnogo ritma zhiivotnyĭkh. By M. E. Lobashev and V. B. Savvateev. 1959
- KOHTS, ALEXANDER ERIC, PROF. DR.
- Album of photographs in commemoration of the Centenary of Darwinism 1859-1959. By Prof. Dr Alexander Kohts.
- LANE, FRANK W.
- Das Betteln der Zoo-Tiere. By K. H. Winkelsträter. 1960
- Soziales Verhalten einer Mantelpavian-Gruppe. By Hans Kummer. 1957
- MATTHEWS, L. HARRISON, M.A., SC.D.,
F.R.S., F.L.S.
- What animal is it? By R. Bigalke. 1954
- MONTAGU, THE HON. IVOR G. S.,
F.Z.S.
- De sista av sin art: vilda djur som hotas utrotning. By Bengt Sjögren. 1960
- POLISH ACADEMY OF SCIENCES,
INSTITUTE OF ZOOLOGY LIBRARY
- Zwierzęta bliskie i dalekie. By J. Styczynski and J. Zabinski. 1958
- PORTER, ANNIE, D.SC., F.L.S.
(Mrs. H. B. Fantham)
- Tropical Diseases Bulletin. Vol. 6 nos. 7-9; Vol. 7; Vol. 8; Vol. 9, no. 1
- ROLANDI, DOTT. ING. GIORGIO
- Catalogo della Collezione di Coleotteri del Dr Roberto Haas. By Roberto Haas. 1960
- SENCKENBERGISCHEN NATURFORSCHENDEN GESELLSCHAFT
- Die Amphibien und Reptilien Europas. By Robert Mertens and Heinz Wermuth. 1960
- Der Flug der Tiere. Edited by Herta Schmidt. 1960
- SIDGWICK AND JACKSON LTD.
- The nature of animal colours. By H. Munro Fox and Gwynne Vevers. 1960
- SOCIÉTÉ JERSIAISE
- A checklist of the birds of Jersey. By C. G. Pile and M. L. Long. 1960
- SWEENEY, R. C. H.
- A preliminary annotated checklist of the mammals of Nyasaland. By R. C. H. Sweeney. 1959
- TATTERSALL, MRS OLIVE S., D.SC.,
F.Z.S.
- Discovery reports. Vol. XXVIII: Mysidacea. By Olive S. Tattersall, 1955
- A review of the Mysidacea of the United States National Museum. By Walter M. Tattersall
- A supplement to W. M. Tattersall's review of the Mysidacea. By Albert H. Banner
- THOMSON, SIR A. LANDBOROUGH,
C.B., O.B.E., M.A., D.SC., LL.D.
- Atlas of European birds. By K. H. Voous. 1960
- TOMKINSON, MISS M. R.
- Sea terns or sea swallows: their habits, language, arrival and departure. By George and Anne Marples. 1934
- What bird is that? A guide to the birds of Australia. By Neville W. Cayley. 1950
- Wild life in South Africa. By J. Stevenson-Hamilton. 1950

TREMBLEY, FERNAND

Correspondance inédite entre Réaumur et Abraham Trembley
comprenant 113 lettres recueillies et annotées. By Maurice
Trembley. 1943

UNIVERSITY OF WASHINGTON PRESS

Marine boring and fouling organisms. Edited by Dixy Lee Ray.
1959

VERESHCHAGIN, NIKOLAI KUZMICH

Mlekopitayushchie Kavkaza. By N. K. Vereshchagin. 1959

VIE ET MILIEU, PARIS

Biologie des eaux souterraines littorales et continentales. By C. D.
Deboutteville. 1960

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Tuesday, 14th February
Tuesday, 14th March
Tuesday, 11th April
Tuesday, 9th May
Tuesday, 13th June
Tuesday, 10th October
Tuesday, 14th November
Tuesday, 12th December

Symposia at 10.30 a.m.

Wednesday, 8th March
Wednesday, 3rd May
Wednesday, 8th November

Ordinary General Meetings at 4.30 p.m.

Wednesday, 18th January
Wednesday, 19th April
Wednesday, 19th July
Wednesday, 18th October

Annual General Meeting at 4 p.m.

Wednesday, 26th April

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