

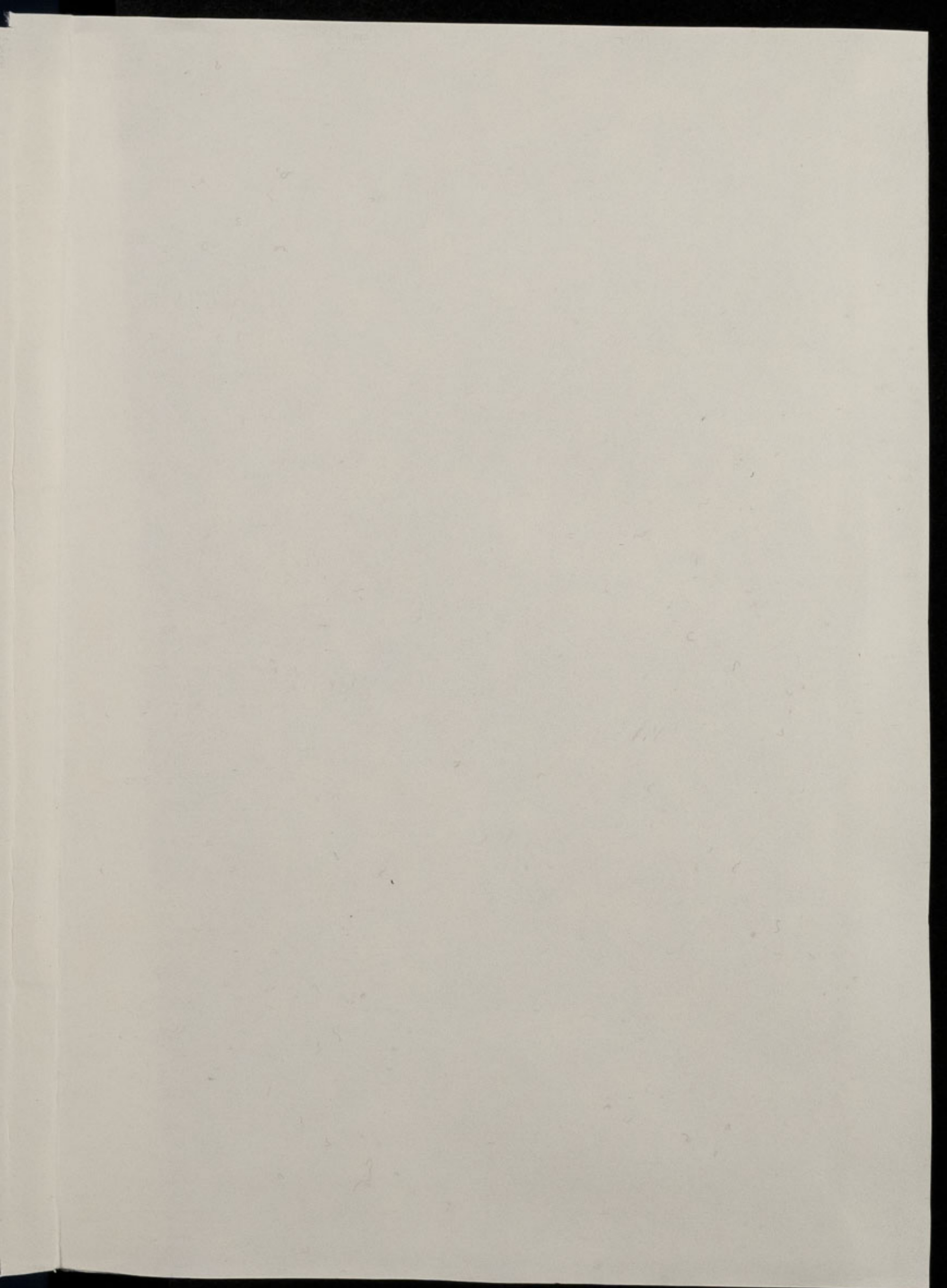
Chester Zoo Library

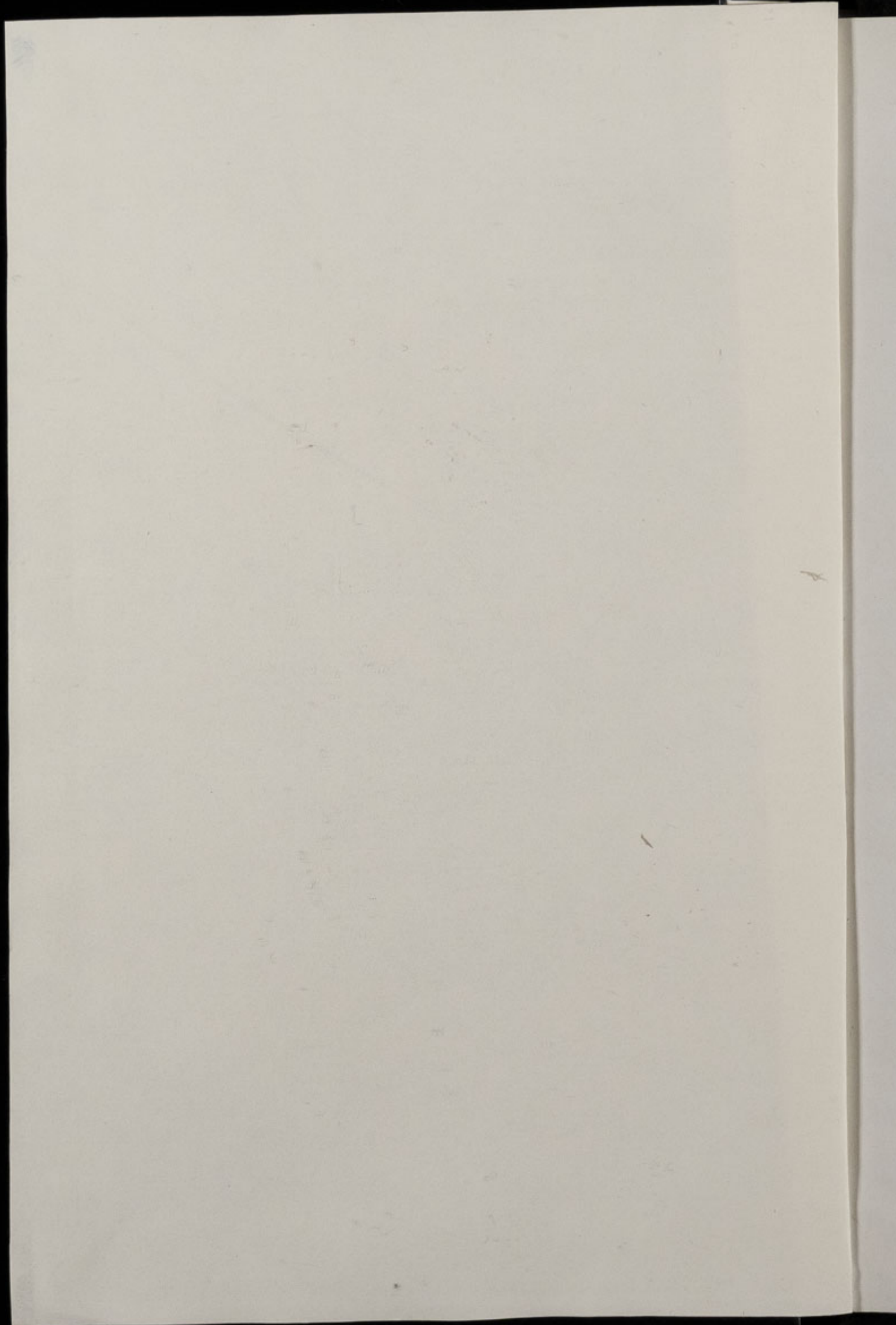


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THE
NORTH OF ENGLAND
ZOOLOGICAL SOCIETY
CHESTER

Report of the Council
and
Statement of Accounts
1975

**NOTICE OF
THE 42nd ANNUAL GENERAL MEETING
OF
THE NORTH OF ENGLAND ZOOLOGICAL SOCIETY
To be held on Saturday, 29th May, 1976 at 3.30 p.m.
at the Russell Allen Lecture Hall
Zoological Gardens, Upton-by-Chester**

PROCEDURE AT THE ANNUAL GENERAL MEETING

- (a) The reading of the Minutes of the previous Annual General Meeting.
- (b) Presentation of the Income and Expenditure Account and Balance Sheet and Auditors' Report thereon.
- (c) Discussion of the Auditors' Report.
- (d) Presentation of the Council's Report.
- (e) Discussion of the Council's Report.
- (f) The appointment of Scrutineers and the opening of the Ballot for the election of members of the Council.
- (g) Receiving the Report of the Scrutineers on the Result of the Ballot.

MEMBERS OF THE COUNCIL — 1975

PROFESSOR J. O. L. KING, Ph.D., M.V.Sc., B.Sc. (Agric.), F.R.C.V.S
(Chairman)

*HER GRACE SALLY, DUCHESS OF WESTMINSTER

F. MOSFORD

H. F. PARKER

*A. J. BLAND, Dipl. Arch., R.I.B.A.

*J. N. WILSON

J. A. KILPATRICK, M.B., Ch.B., F.R.C.S.E.

H. D. COOPER, F.I.M., F.S.F., Cert. A.I.B.

A. K. McGHIE, A.I.B.

G. R. PRYOR, C.Eng., Hon.M.I.Prod.E., F.B.I.M.

*R. P. OWEN, A.R.I.C.S.

*MRS. B. H. IRVINE

Dr. J. E. D. CHARLES-JONES, M.B., B.S., M.R.C.G.P.

DINAH, LADY TOLLEMACHE

DIRECTOR-SECRETARY

G. S. MOTTERSHEAD, O.B.E., M.Sc.

There are five vacancies on the Council. Members indicated thus * offer themselves for re-election.

If any member wishes to be nominated for election to the Council he/she must find seven fully paid-up members to nominate him/her.

Notice in writing must be received by the Secretary **not later than 14 days** before the Annual General Meeting.

BALANCE SHEET AS AT 31st DECEMBER, 1975

| | 1975 | £ | 1974 | £ |
|---|---------|----------|---------|----------|
| FIXED ASSETS | | | | |
| FREEHOLD PROPERTY | | | | |
| Balance as per Schedule annexed | 306,656 | | 221,408 | |
| SPECIAL BUILDINGS, ENCLOSURES AND EQUIPMENT | | | | |
| Balance as per Schedule annexed | 246,001 | | 262,783 | |
| STOCK OF ANIMALS, REPTILES, BIRDS, ETC. | | | | |
| Balance as per Schedule annexed | 127,963 | | 126,955 | |
| (Market Valuation £304,065) | | | | |
| TOTAL FIXED ASSETS | | 680,620 | | 611,146 |
| CURRENT ASSETS | | | | |
| Stocks of Feeding Stuffs, Goods for resale and Fuel at cost | 19,991 | | 23,199 | |
| Stock of Farm Livestock, Produce and Seeds at cost | 6,431 | | 8,057 | |
| Debtors and Prepayments | 18,438 | | 29,432 | |
| Loans — Long Term | 100,000 | | | |
| — Short Term | 180,000 | | | |
| | | 280,000 | | 335,000 |
| Balance at Bank | 5,244 | | 2,474 | |
| Cash in Hand | 2,245 | | 1,371 | |
| TOTAL CURRENT ASSETS | | 332,349 | | 399,533 |
| Less: | | | | |
| CURRENT LIABILITIES | | | | |
| Sundry Creditors | 21,347 | | 17,272 | |
| | | 311,002 | | 382,261 |
| NET ASSETS | | £991,622 | | £993,407 |
| Financed by: | | | | |
| LEGACY ACCOUNT as at 31/12/74 | 19,467 | | | |
| Received during year | 50 | | | |
| | | 19,517 | | 19,467 |
| CAPITAL RESERVE ACCOUNT as at 31/12/74 | | 32,633 | | 32,633 |
| INCOME AND EXPENDITURE ACCOUNT — Accumulated Surplus | | | | |
| Balance as at 31/12/74 | 941,307 | | 924,784 | |
| Less: Net Deficit for year (1974 Surplus) | 1,835 | | 16,523 | |
| | | 939,472 | | 941,307 |
| TOTAL CAPITAL AND RESERVES | | £991,622 | | £993,407 |

J. O. L. KING, *Chairman*

G. S. MOTTERSHEAD, *Director/Secretary*

Report of the Auditors to the Members of the North of England Zoological Society

In our opinion, the annexed Balance Sheet, Income and Expenditure Account and related notes and schedules, give a true and fair view of the state of the Society's affairs at the 31st December 1975 and of the deficit for the year ended on that date and comply with the Companies Acts 1948 and 1967.

AFFORD, BOND AND CO.,
Chartered Accountants,
Nantwich.

7th March, 1976

**SCHEDULE ANNEXED TO BALANCE SHEET
AT 31st DECEMBER, 1975**

| | £ |
|--|-----------------|
| FREEHOLD PROPERTY | |
| Balance at beginning of year at cost | 221,408 |
| Additions during year — cost | 85,248 |
| | <hr/> |
| TOTAL AS SHOWN IN BALANCE SHEET | £306,656 |
| | <hr/> <hr/> |
| SPECIAL BUILDINGS, ENCLOSURES AND EQUIPMENT | |
| Balance at beginning of year at cost | 691,648 |
| Balance at beginning of year at valuation (1948) | 17,460 |
| Additions during year — cost | 13,064 |
| | <hr/> |
| | 722,172 |
| Sales during year | 1,398 |
| | <hr/> |
| | 720,774 |
| | <hr/> |
| Less: Depreciation at beginning of year | 446,325 |
| Adjustment re Sales during year | 983 |
| | <hr/> |
| | 445,342 |
| Depreciation provided during year | 29,431 |
| | <hr/> |
| Accumulated Depreciation | 474,773 |
| | <hr/> |
| TOTAL AS SHOWN IN BALANCE SHEET | £246,001 |
| | <hr/> <hr/> |
| ANIMALS, REPTILES, BIRDS, ETC. | |
| Balance at beginning of year at cost | 126,955 |
| Additions during year — cost | 2,172 |
| | <hr/> |
| | 129,127 |
| Sales during year | 1,164 |
| | <hr/> |
| TOTAL AS SHOWN IN BALANCE SHEET | £127,963 |
| | <hr/> <hr/> |

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR
ENDED 31st DECEMBER, 1975**

| | 1975 | | 1974 | |
|--|--------|----------|--------|----------|
| | £ | £ | £ | £ |
| TURNOVER | | | | |
| Cash Receipts for Goods and Services | | 821,708 | | 705,175 |
| DEFICIT FOR THE YEAR (Surplus 1974) | | (14,738) | | 5,191 |
| before charging — | | | | |
| Auditors' Remuneration | 650 | | 450 | |
| Depreciation of Fixed Assets | 29,431 | | 31,393 | |
| | 30,081 | | 31,843 | |
| DEFICIT | | (44,819) | | (26,652) |
| and before crediting | | | | |
| Investment Income Received (Gross) | 40,630 | | 41,326 | |
| Profit on Sale of Equipment — Net | 737 | | 105 | |
| Members' Subscriptions and Entrance Fees | 1,553 | | 1,700 | |
| Donations | 64 | | 44 | |
| | 42,984 | | 43,175 | |
| DEFICIT FOR THE YEAR (Surplus 1974) | | (1,835) | | 16,523 |
| Add: Balance brought forward from | | | | |
| last year | | 941,307 | | 924,784 |
| BALANCE CARRIED FORWARD | | | | |
| TO NEXT YEAR | | £939,472 | | £941,307 |

ANNUAL REPORT 1975

The Council of the North of England Zoological Society has pleasure in presenting its Annual Report for 1975.

So as to comply with the provisions of the Companies Act, 1967, it is necessary to state here that this Society is a Public Zoological Garden, that no significant changes have occurred in this activity during the year and that the state of the Society's affairs at 31st December, 1975 was satisfactory.

The total receipts for the year are shown on the Income and Expenditure Account but as the Society is not a profit distributing concern no analysis of profitability is relevant. The average weekly number of employees during 1975 was 232 and their aggregate gross remuneration amounted to £393,895.

During the year the Society sustained a great loss with the deaths of two of its Council Members, The Rt. Hon. Lord Tollemache and Mr. A. E. Smith. Lord Tollemache had been a valued member of the Council for thirteen years, and Mr. Smith joined the Council in 1965.

The Council very much regrets that due to the increase in the costs of printing and postage it became necessary to withdraw the free distribution of Chester Zoo News to members.

Little was done in the way of new building during the year. Several enclosures were completed and are now in use and the owl aviaries have been re-built. A halt has been called on further development for the time being, except where it is absolutely necessary.

As will be seen from the list in this report, 1975 was a fairly successful breeding year, particularly with birds. The time has now arrived when the amount of stock has to be watched carefully, as the feeding bill is exorbitant.

There were a number of cases of vandalism during the year, mainly of vandals cutting the wire in the aviaries and many eggs were stolen. This meant a much stricter watch having to be kept, which of course was a drain on labour.

Further incidents of drugging of the Cats occurred during the year. Fortunately, none of the cases was too serious, and the Police were brought in.

What might have been a very dangerous incident, occurred during October. Nobby, the Indian Bull Elephant had been getting progressively more cantankerous and difficult to handle, and a special enclosure was made for him to use when he was in musth.

Just at the time the enclosure was completed, he was in this state again; he became very aggressive and finally escaped from his enclosure into the Zoo grounds. Attempts were made to catch him, but eventually he got on to the main A41 road; fortunately he was steered back into Caughall Road, where it was felt he could be controlled. However, he retraced his steps, and went back onto the public highway. With tranquillising darts having no effect, it was necessary to shoot him. Nobby was a very fine animal, but showed every tendency of becoming a "rogue".

The Education Department of the Cheshire Education Committee held a two days Teacher Training Course at the Zoo on the 21st and 22nd April.

Members of the Twycross Zoo Council and the Bristol Zoo Council visited the Zoo during the year. Seven members meetings were held in the Lecture Hall during the year; on the whole these were very well attended.

The Director attended the English Conference of Zoo Directors, which was held at Bristol in April. In May, he attended an International Symposium on Zoo Design and Construction, which was held at Paignton. This was a very interesting Symposium, and attended by delegates from all over the world. The first session was chaired by Sir Hugh Casson, and the Director chaired the fourth session.

In the earlier part of the year, the Society was approached by the Backford Estate who wished to dispose of some of the land adjoining the Zoo. The result was that two farms were purchased, i.e. Caughall Manor Farm and Moston Hill Farm. This increased the Society's acreage by 140.69 acres. These farms will be used to produce food for the livestock, when the Society takes possession.

Her Grace Sally, Duchess of Westminster, kindly presented the Society with a collection of orchids which she brought back from her visit to South America, earlier in the year. The Society's collection is now fairly substantial, and displays can be made in the various animal houses with specimens which do not need a tropical atmosphere.

During the year, a legacy of £50 was received from the estate of the late Mrs. F. L. Barker of Prestbury.

The Council would like to take this opportunity of thanking all members of the staff for their loyal support during the year, and to the many members of the public who have made donations of livestock etc., to the Society.

MAMMALS BRED DURING 1975

| Species | Scientific Name | No. | | Sex | |
|------------------------|----------------------------------|------|--------|-----|---|
| | | Born | Reared | M | F |
| Alpaca | <i>Lama pacos</i> | 3 | 2 | 1 | 1 |
| Bears Hybrid | <i>Ursus arctos</i> spp. | 2 | 2 | 1 | 1 |
| Bison | <i>Bos bison</i> | 2 | 2 | 1 | 1 |
| Blackbuck | <i>Antilope cervicapra</i> | 2 | 1 | 1 | 0 |
| Cattle Highland | <i>Bos taurus</i> | 2 | 2 | 1 | 1 |
| Chimpanzee | <i>Pan troglodytes</i> | 3 | 2 | 1 | 1 |
| Chinchilla | <i>Chinchilla laniger</i> | 1 | 1 | 1 | 0 |
| Deer Fallow | <i>Dama dama</i> | 7 | 3 | 1 | 2 |
| Deer Pere David's | <i>Elaphurus davidianus</i> | 5 | 3 | 2 | 1 |
| Gazelle Arabian | <i>Gazella arabica</i> | 5 | 4 | 2 | 2 |
| Giraffe | <i>Giraffa camelopardalis</i> | 1 | | | |
| Bagot Goat | <i>Capra hircus</i> | 1 | 1 | 1 | 0 |
| Jaguar | <i>Panthera onca</i> | 3 | 3 | | |
| Kangaroo Red | <i>Megaleia rufa</i> | 1 | 1 | 1 | 0 |
| Lechwe Red | <i>Kobus leche</i> | 4 | 4 | 1 | 3 |
| Lemur Ring-Tailed | <i>Lemur catta</i> | 2 | 1 | 1 | 0 |
| Leopard, Common | <i>Panthera pardus</i> | 6 | 4 | 1 | 3 |
| Lions | <i>Panthera leo</i> | 7 | 2 | 1 | 1 |
| Monkey Baboon | <i>Papio hamadryas</i> | | | | |
| Hamadryas | | 2 | | | |
| Monkey Talapoin | <i>Cercopithecus talapoin</i> | 1 | 1 | | |
| Monkey Vervet | <i>Cercopithecus pygerythrus</i> | 1 | 1 | 1 | 0 |
| Nilgai | <i>Boselaphus tragocamelus</i> | 1 | | | |
| Prairie Marmot | <i>Cynomys ludovicianus</i> | 15 | 15 | | |
| Pumas | <i>Felis concolor</i> | 3 | 3 | 1 | 2 |
| Sheep Soay | <i>Ovis aries</i> | 7 | 7 | | |
| Squirrels Sierra Leone | <i>Fumisciurus pyrrhopus</i> | | | | |
| Striped | <i>leonis</i> | 2 | 2 | 1 | 1 |
| Wallabies Bennett's | <i>Wallabia rufogrisea</i> | 21 | 20 | | |
| Wapiti | <i>Cervus canadensis</i> | 3 | | | |
| Wildebeeste | <i>Connochaetes taurinus</i> | | | | |
| (White-bearded Gnu) | <i>albojubatus</i> | 2 | 1 | 1 | 0 |
| Zebras Common | <i>Equus burchelli granti</i> | 3 | 3 | 3 | 0 |
| Zebras Grevy's | <i>Equus grevyi</i> | 1 | | | |

BIRDS BRED DURING 1975

| Species | Scientific Name | No. Reared |
|--------------------------|---|---------------|
| Avadavat Green | <i>Amandava formosa</i> | 1 |
| Avadavat Red | <i>Amandava amandava</i> | 4 |
| Budgerigars | <i>Melopsittacus undulatus</i> | 29 |
| Bulbul Red-Vented | <i>Pycnonotus cafer</i> | 2 |
| Bulbul Red-Whiskered | <i>Pycnonotus jocosus peguensis</i> | 2 |
| Cockatiels | <i>Nymphicus hollandicus</i> | 53 |
| Cockatoo Blue-Eyed | <i>Kakatoe ophthalmica</i> | 1 |
| Conure Lesser Patagonian | <i>Cyanoliseus patagonus</i> | 4 |
| Conure Nanday | <i>Nandayus nanday</i> | 2 |
| Conure Sun | <i>Aratinga solstitialis</i> | 3 |
| Coot | <i>Fulica atra</i> | 3 |
| Cordon Bleu | <i>Uraeginthus bengalus</i> | 4 |
| Doves Barbary | <i>Streptopelia risoria</i> | 2 |
| Doves Diamond | <i>Geopelia cuneata</i> | 7 |
| Doves Laughing | <i>Stigmatopelia senegalensis</i> | 3 |
| Doves Chinese Turtle | <i>Streptopelia chinensis chinensis</i> | 4 |
| Duck Carolina | <i>Aix sponsa</i> | 1 |
| Duck Gadwall | <i>Anas strepera strepera</i> | 2 |
| Duck Shelduck | <i>Tanorda tanorda</i> | 6 |
| Duck Teal Cinnamon | <i>Anas cyanoptera</i> | 1 |
| Duck Teal Laysan | <i>Anas platyrhynchos laysanensis</i> | 1 |
| Duck Wigeon | <i>Anas penelope</i> | 2 |
| Emus | <i>Dromaius novae-hollandiae</i> | 3 |
| Finch Bengalese | <i>Lonchura striata</i> | 18 |
| Finch Cut-Throat | <i>Amadina fasciata</i> | 13 |
| Finch Green | <i>Chloris chloris</i> | 8 |
| Finch Green Singing | <i>Serinus mozambicus</i> | 2 |
| Finch Zebra | <i>Taeniopygia castanotis</i> | 19 |
| Geese Canada | <i>Branta canadensis</i> | 10 |
| Geese Lesser Snow | <i>Anser c. coerulescens</i> | 2 |
| Ibis Sacred | <i>Threskiornis aethiopicus</i> | 4 |
| Jay Mexican Green | <i>Xanthoura yncas</i> | 1 |
| Java Sparrows | <i>Padda oryzivora</i> | 9 |
| Kookaburra | <i>Dacelo gigas</i> | 2 |
| Laughing Thrush | <i>Tropchalopteron erythrocephalum</i> | |
| Red-Headed | | 2 |
| Lorikeet Scaly-Breasted | <i>Trichoglossus chlorolepidotus</i> | 2 |
| Lorikeet Swainson's | <i>Trichoglossus moluccanus</i> | 3 |
| Lovebird Fischer's | <i>Agapornis fischeri</i> | 4 |
| Lovebird Peach-Faced | <i>Agapornis roseicollis</i> | 10 |
| Mannikin Bronze-Winged | <i>Spermestes cucullatus</i> | 2 |
| Mynah Bank | <i>Acridotheres ginginianus</i> | 1 |
| Mynah Hill | <i>Gracula religiosa</i> | 1 |
| Mynah Jungle | <i>Aethiopsar fuscus</i> | 5 |
| Nun Tri-Coloured | <i>Munia malacca</i> | 2 |
| Ostrich | <i>Struthio camelus</i> | 2 |

BIRDS BRED DURING 1975 — Continued

| Species | Scientific Name | No. Reared |
|--------------------------------|------------------------------------|---------------|
| Parrakeet Barraband | <i>Polytelis swainsoni</i> | 2 |
| Parrakeet Derbyian | <i>Psittacula derbyana</i> | 1 |
| Parrakeet Plum-Headed | <i>Psittacula cyanocephala</i> | 2 |
| Parrakeet Quaker | <i>Miopsitta monachus</i> | 6 |
| Parrakeet Red-Rumped | <i>Psephotus haematonotus</i> | 7 |
| Parrakeet Ring-Necked | <i>Psittacula krameri</i> | 5 |
| Parrot African Grey | <i>Psittacus erithacus</i> | 2 |
| Parrot Eclectus Grand | <i>Lorius roratus</i> | 1 |
| Parrot Eclectus Red-Sided | <i>Lorius roratus pectoralis</i> | 1 |
| Peacock Common | <i>Pavo cristatus</i> | 6 |
| Rails Slaty-Breasted | <i>Rallus striatus</i> | 6 |
| Rails Weka | <i>Gallirallus australis greyi</i> | 1 |
| Sibia Black-Headed | <i>Leioptila capistrata</i> | 1 |
| Silverbills | <i>Euodice malabarica cantans</i> | 2 |
| Spicebirds | <i>Munia punctulata</i> | 2 |
| Starling Glossy | <i>Lamprocolius nitens</i> | 3 |
| Starlings Blue-Eared Glossy | <i>Lamprotornis chalybaeus</i> | 2 |
| Starlings Jerdon's | <i>Sturnus burmanicus</i> | 5 |
| Waxbill Golden-Breasted | <i>Estrilda subflava</i> | 1 |
| Waxbill Red-Eared | <i>Estrilda troglodytes</i> | 8 |
| Waxbill Red-Rumped | <i>Estrilda rhodopyga</i> | 2 |
| Weaver Little-Masked | <i>Ploceus luteolus</i> | 1 |
| Weaver Napoleon | <i>Euplectes afra</i> | 1 |
| Weaver Red Bishop | <i>Euplectes orix</i> | 1 |
| Whydah Paradise | <i>Steganura paradisaea</i> | 1 |
| Whydah Pin-Tailed | <i>Vidua macroura</i> | 1 |
| Whydah Red-Collared | <i>Coliuspasser ardens</i> | 1 |

REPTILES BRED DURING 1975

| Species | Scientific Name | No. Reared |
|-------------------------|---|---------------|
| Gecko, Leopard | <i>Eublepharis macularis</i> | 12 |
| Hybrid Snake | <i>Elaphe obsoleta quadrivittata</i> x <i>Elaphe obsoleta obsoleta</i> | 3 |
| Pythons, African | <i>Python sebae</i> | 7 |
| Skink Solomon Island | <i>Corucia zebrata</i> | 5 |
| Water Dragons, Thailand | <i>Physignathus cocincinus</i> | 5 |

The number of specimens in the Collection at 31st December, 1975 was as follows:—

| | Species | Specimens |
|-------------------------------|---------|-----------|
| Mammals | 135 | 829 |
| Birds | 292 | 2,114 |
| Reptiles and Amphibians | 84 | 200 |
| Fish | 178 | 2,000+ |

THE MEMBERSHIP OF
THE NORTH OF ENGLAND ZOOLOGICAL SOCIETY
AS AT 31st DECEMBER, 1975

| | |
|-----------------------------|-----|
| PATRONS | 72 |
| LIFE MEMBERS | 5 |
| HONORARY MEMBERS | 6 |
| CORRESPONDING MEMBERS | 1 |
| ANNUAL MEMBERS | 307 |

The following Table shows the number of visitors to the Gardens during the last two years:—

| | 1974 | 1975 |
|--------------------------------------|---------|---------|
| VISITORS TO THE GARDENS | 998,402 | 921,045 |
| VISITORS TO THE AQUARIUM | 239,750 | 219,455 |
| VISITORS TO THE TROPICAL HOUSE | 224,784 | 225,349 |



S. G. Mason (Chester) Ltd.

Veterinary Laboratory

Annual Report - 1975

NORTH OF ENGLAND ZOOLOGICAL SOCIETY
ZOOLOGICAL GARDENS,
UPTON-BY-CHESTER,
CHESHIRE

Annual Report - 1975

Veterinary Laboratory

ROYAL VETERINARY COLLEGE
SCHOOL OF VETERINARY MEDICINE
WINDSOR, MIDDLESEX, ENGLAND

SCIENTIFIC COMMITTEE OF THE ZOOLOGICAL SOCIETY'S COUNCIL

Professor J. O. L. King, Ph.D., M.V.Sc., B.Sc.(Agric.), F.R.C.V.S. (Chairman).
J. E. D. Charles-Jones, M.B., B.S., M.R.C.G.P.
D. C. Dinning (Laboratory Technician).
D. B. Edwards, B.V.Sc., M.R.C.V.S.
J. A. Kilpatrick, M.B., Ch.B., F.R.C.S.E.
D. G. Lyon, B.V.Sc., M.R.C.V.S. (Veterinary Officer).
W. H. Timmis (Curator of Mammals and Birds).
G. S. Mottershead, O.B.E., M.Sc. (Director-Secretary)

INTRODUCTION

The veterinary work at the Zoological Gardens is contracted to the local Veterinary Practice of Messrs. Edwards, Edginton and Lyon.

This report has been compiled by D. G. Lyon and D. C. Dinning from clinical case records, laboratory findings and autopsy reports for 1975. There are four main sections in the report dealing with, a) Clinical Pathology, b) Pathology, c) Medicine and Surgery, and d) Immobilisation and Anaesthesia.

CLINICAL PATHOLOGY

The functional aspects of this laboratory continued in a similar manner to previous years.

A total of 1,106 specimens was received from the Society's Collection of mammals, birds and reptiles and the following examinations carried out.

a) Faeces Samples — Concentration Techniques for helminth eggs.

From a total of 1,006 faeces samples examined for helminth eggs, 520 were negative. Ova of *Trichostrongyle* spp. were encountered regularly in faeces from Ruminant stock, *Oesophagostomum* sp. and *Trichuris* sp. from small Primates and *Toxascaris* sp. from Felidae. Other parasitic ova seen during the year included *Nematodirus* sp., *Uncinaria* sp., *Enterobius* sp., *Ascaridia* sp., *Capillaria* sp., *Strongyloides* sp., and *Syngamus* sp.

b) Faeces Samples — Direct Smear for Intestinal Protozoa.

In many instances, direct faecal smears were examined for the presence of Amoebae, Ciliates and Sporozoan Parasites.

The most commonly encountered in the Primate Collection included *Balantidium coli*, *Entamoeba coli* and *Troglodytella abassati*. A wide variety of specimens were found to show small numbers of Coccidial oocysts in faecal smears.

c) Faeces Samples — Screening for Intestinal Pathogens.

During routine screening of faeces, *Escherichia*, *Proteus* and *Klebsiella* spp. were usually found to constitute normal flora.

d) Miscellaneous Samples — Culture and Organism Identification.

This group includes materials obtained at autopsy and swabs taken from sites during clinical examinations. Organisms identified include *Staphylococcus*, *Streptococcus*, *Escherichia*, *Pasteurella*, *Proteus*, *Pseudomonas*, *Aeromonas*, *Salmonella*, Arizona group, *Clostridia*, *Mycobacterium* and *Aspergillus*.

SPECIALISED LABORATORIES

Detailed below is a list of Laboratories where specialised services were provided by the undermentioned and their help is gratefully acknowledged.

1. **Parasitology**
Dr. M. J. Clarkson and Dr. W. N. Beesley,
Liverpool School of Tropical Medicine,
Liverpool.
2. **Entomology**
Dr. D. I. Gibson,
British Museum (Natural History),
London.
3. **Histology**
 - a) Dr. J. R. Baker,
Dept. Veterinary Pathology,
University of Liverpool.
 - b) Dr. H. B. Marsden,
Royal Manchester Children's Hospital,
Pendlebury, Lancs.
4. **Bacteriology**
 - a) Dr. P. M. Poole and Mr. D. Brecon,
Public Health Laboratories,
Chester.
 - b) Dr. J. R. Walton,
Dept. Veterinary Preventive Medicine,
University of Liverpool.
5. **Biochemistry and Bacteriology**
 - a) The Veterinary Investigation Officer,
Ministry of Agriculture, Fisheries & Food,
Veterinary Investigation Centre,
Liverpool.
 - b) The Veterinary Investigation Officer,
Ministry of Agriculture, Fisheries & Food,
Veterinary Investigation Centre,
Weybridge, Surrey.
6. **Toxicology**
 - a) Medical Records Dept.,
Associated Octel Co. Ltd.,
Ellesmere Port, Cheshire.
 - b) Haematology & Biochemistry Depts.,
City Hospital,
Chester.

ANATOMICAL AND BACTERIOLOGICAL SPECIMENS

The following receive anatomical and bacteriological specimens for research and teaching purposes:—

1. Professor R. G. Harrison,
Department of Anatomy,
University of Liverpool. Primate skull and skeletal material.
2. Mr. A. H. Hilton,
14 St. John Street,
Manchester 3. Reptilian and amphibian heads for teaching purposes and research studies on the evolution of the middle ear and related structures of the jaw-joint from fish to mammal.
3. Dr. J. R. Baker,
Dept. Veterinary Pathology,
University of Liverpool. Birds' heads and mammal skulls
4. Miss B. A. Noddle,
Department of Anatomy,
University College of S. Wales
and Monmouthshire,
Cardiff. Ruminant carcasses.
5. Mrs. P. Edwards
Veterinary Hospital,
Lavister,
North Wales. Birds' heads and mammal skulls.
6. Professor W. Peters,
Liverpool School of
Tropical Medicine,
Liverpool. Faecal samples for studies on Isospora and Coccidia of Carnivores.

PATHOLOGY

During the year the Society's Collection consisted of 1,005 mammals, 2,511 birds and 297 reptiles. One hundred and nineteen mammal, 334 bird and 22 reptile births were recorded for the year.

During the period 1st January to 31st December inclusive 272 post-mortem examinations were performed. As can be seen from Table 1, this figure has been sub-divided into three groups in three classes. "Unacclimatised" specimens are those which have been in the Collection for less than three months; "newborn" refers to those mammals born in the Collection and which died before attaining the age of 14 days.

TABLE (1)
POST-MORTEM EXAMINATIONS CARRIED OUT DURING 1975

| | Acclimatised | Unacclimatised | Newborn | Total |
|-----------------------|--------------|----------------|---------|-------|
| MAMMALIA | 92 | 8 | 19 | 119 |
| AVES | 88 | 17 | 0 | 105 |
| REPTILIA/ AMPHIBIA | 35 | 13 | 0 | 48 |
| TOTALS | 215 | 38 | 19 | 272 |

The main object of carrying out post-mortem examinations is to ascertain the cause of death to enable suitable action to be taken to prevent further losses.

Tables (2) (3) (4) summarise the main findings at post-mortem examination. Each class is discussed separately under the Main Groups listed in the Tables and an account given of findings of particular interest. In the account, the duration of residence of specimens is recorded in figures after the common or scientific name, e.g. Bennetts Wallaby (*Protemnodon rufogrisea*), 6.9 denotes a residence of six years and nine months.

Several carcasses were submitted to the Liverpool University Veterinary Field Station for post-mortem examination. The assistance of Dr. J. R. Baker of that department is gratefully acknowledged.

MAMMALIA (TABLE 2)

| MAIN GROUPS OF CONDITIONS ENCOUNTERED | ACCLIMATISED | | UNACCLIMATISED | | NEWBORN | | TOTALS | |
|---|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------|----------------------|
| | Number Affected | % Affected | Number Affected | % Affected | Number Affected | % Affected | Total | % of Total Deaths |
| BACTERIAL | 34 | 36.95 | 0 | | 1 | 5.26 | 35 | 29.41 |
| VIRAL | 2 | 2.17 | 0 | | 0 | | 2 | 1.68 |
| FUNGAL | 0 | | 0 | | 0 | | 0 | |
| HELMINTH | 3 | 3.26 | 0 | | 0 | | 3 | 2.52 |
| PROTOZOA | 0 | | 0 | | 0 | | 0 | |
| ARTHROPOD | 0 | | 0 | | 0 | | 0 | |
| INJURY/ACCIDENT | 14 | 15.21 | 1 | 12.50 | 8 | 42.10 | 23 | 19.32 |
| METABOLIC/ NUTRITIONAL | 14 | 15.21 | 3 | 37.50 | 2 | 10.52 | 19 | 15.96 |
| DEBILITY/SENILITY | 9 | 9.78 | 0 | | 0 | | 9 | 7.56 |
| NEOPLASIA | 2 | 2.17 | 0 | | 0 | | 2 | 1.68 |
| OTHERS* | 14 | 15.21 | 4 | 50.00 | 8 | 42.10 | 26 | 21.84 |
| TOTAL | 92 | | 8 | | 19 | | 119 | |

*Includes carcasses where no post-mortem examination was carried out due to decomposition.

AVES (TABLE 3)

| MAIN GROUPS OF CONDITIONS ENCOUNTERED | ACCLIMATISED | | UNACCLIMATISED | | TOTALS | |
|---|--------------------|---------------|--------------------|---------------|--------|----------------------|
| | Number Affected | % Affected | Number Affected | % Affected | Total | % of Total Deaths |
| BACTERIAL | 30 | 34.09 | 8 | 47.05 | 38 | 36.19 |
| VIRAL | 0 | | 0 | | 0 | |
| FUNGAL | 1 | 1.13 | 0 | | 1 | 0.95 |
| HELMINTH | 0 | | 0 | | 0 | |
| PROTOZOA | 0 | | 0 | | 0 | |
| ARTHROPOD | 0 | | 0 | | 0 | |
| INJURY/ACCIDENT | 29 | 32.95 | 3 | 17.64 | 32 | 30.47 |
| METABOLIC/ NUTRITIONAL | 16 | 18.18 | 4 | 23.52 | 20 | 19.04 |
| DEBILITY/SENILITY | 1 | 1.13 | 0 | | 1 | 0.95 |
| NEOPLASIA | 0 | | 0 | | 0 | |
| OTHERS* | 11 | 12.50 | 2 | 11.76 | 13 | 12.38 |
| TOTALS | 88 | | 17 | | 105 | |

*Includes carcasses where no post-mortem examination was carried out due to decomposition.

REPTILIA (TABLE 4)

| MAIN GROUPS OF CONDITIONS ENCOUNTERED | ACCLIMATISED | | UNACCLIMATISED | | TOTALS | |
|---|--------------------|---------------|--------------------|---------------|--------|----------------------|
| | Number Affected | % Affected | Number Affected | % Affected | Total | % of Total Deaths |
| BACTERIAL | 13 | 37.14 | 4 | 30.76 | 17 | 35.41 |
| VIRAL | 0 | | 0 | | 0 | |
| FUNGAL | 2 | 5.71 | 0 | | 2 | 4.16 |
| HELMINTH | 1 | 2.85 | 0 | | 1 | 2.08 |
| PROTOZOA | 0 | | 0 | | 0 | |
| ARTHROPOD | 0 | | 0 | | 0 | |
| INJURY/ACCIDENT | 4 | 11.42 | 0 | | 4 | 8.33 |
| METABOLIC/ NUTRITIONAL | 10 | 28.57 | 6 | 46.15 | 16 | 33.33 |
| DEBILITY/SENILITY | 1 | 2.85 | 1 | 7.69 | 2 | 4.16 |
| NEOPLASIA | 1 | 2.85 | 1 | 7.69 | 2 | 4.16 |
| OTHERS* | 3 | 8.57 | 1 | 7.69 | 4 | 8.33 |
| TOTALS | 35 | | 13 | | 48 | |

*Includes carcasses where no post-mortem examination was carried out due to decomposition.

MAMMALIA (TABLE 2)

BACTERIAL: Tuberculous osteomyelitis of the spine was diagnosed by radiographic examination in 3 Bennetts Wallabies (*Protemnodon rufogrisea*) 8.3, 5.0, 5.0. Post-mortem examinations revealed lesions affecting the thoracic vertebrae in two cases and the lumbar vertebrae in one.

Acid and alcohol fast bacilli were demonstrated microscopically and cultures have been made in an attempt to type the variant of *Mycobacterium tuberculosis* involved. Tuberculosis was diagnosed in a further two Bennetts Wallabies 4.0, 2.6, the former animal having tuberculous osteomyelitis of the left hind leg and in the latter, the lesions were in the spleen and mesenteric lymph nodes.

Chronic osteitis of the mandible resulted in the deaths of seven Bennetts Wallabies, ranging in residence from 2 to 5 years. A variety of organisms have been involved in these lesions, including *Fusiformis necrophorus*, *Proteus mirabilis*, *Escherichia coli* and acid fast bacilli.

E. coli septicaemia was diagnosed in a newborn Red Lechwe (*Kobus leche*). *E. coli* was the causative organism of chronic abscesses affecting the peri-orbital tissues in an Oriental Small-clawed Otter (*Amblonyx cinerea*) 6.9, and was found responsible for a bacterial pneumonia in a Coati (*Nasua nasua*) 5.1.

Blackleg (*Clostridium chauveoi*) was diagnosed in a Wapiti (*Cervus canadensis*) 0.6, but attempts to recover the organism on culture were unsuccessful.

VIRAL: Two cases of Panleucopenia were diagnosed during 1975 in Pumas (*Felis concolor*) 0.9, 0.9.

PARASITIC: Debility associated with parasitic gastroenteritis (*Trichuris sp.* and *Trichostrongylus sp.*) was diagnosed in a Wapiti, 0.8.

Chronic pulmonary lesions associated with nematode larvae were present in a Lesser Panda (*Ailurus fulgens*) 8.3.

INJURIES/ACCIDENTS Adult male aggression in herd animals resulted in the deaths of 4 female Wildebeeste (*Connochaetes taurinus albojubatus*) 8.7, 3.7, 2.7, 0.6 and two Bennetts Wallabies 1.0, 1.0.

Interspecific aggression resulted in the deaths of a Red Squirrel (*Sciurus vulgaris varius*) 2.8, a Sykes Monkey (*Cercopithecus albogularis*) 7.8, a Bison (*Bos bison*) 1.11, an Arabian Gazelle (*Gazella g. arabica*) 4.2, a Lion (*Panthera leo*) 0.3, two newborn Hamadryas Baboons (*Papio hamadryas*), a newborn Blackbuck (*Antelope cervicaprica*), a Pere David's Deer (*Elaphurus davidianus*) 0.1 and a Red Lechwe 1.2.

Traumatic reticulo-pericarditis was diagnosed in a Red Lechwe 2.5.

METABOLIC/NUTRITIONAL: Acute hepato-toxicity of unknown aetiology was diagnosed in two Viscacha (*Lagostomus maximus*) 4.5, 4.4.

Interstitial nephritis was diagnosed in a Porcupine (*Hystrix indica*) 2.4, and a Lesser Panda 8.1.

A newly-arrived Eland (*Taurotragus oryx*) died from capture myopathy several days after being transported to the Gardens from another Collection.

DEBILITY/SENILITY: Cardiovascular disease associated with age was diagnosed in a Striped Hyaena (*Hyaena hyaena*) 12.10, a Yellow Baboon (*P. cyanocephalus*) 17.1, a Kamchatka Bear (*Ursos arctos collaris*) 13.0 and a Crab-eating Macaque (*Macaca irus*) 3.10.

During 1975, several specimens were euthanised due to senility, including two lions, 14.0, 15.0, a Tiger (*P. tigris*) 17.0, a Squirrel Monkey (*Saimiri sciureus*) 3.8, a Bison 16.8, a Wapiti 20.0 and a Bagot Goat (*Capra hircus*) 10.0.

NEOPLASIA: An abdominal adenoma was recorded in a Viscacha 4.5, and a hepatoma in a Raccoon-like Dog (*Nyctereutes procyoides*) 7.6

AVES (TABLE 3)

BACTERIAL: Avian tuberculosis (*Mycobacterium tuberculosis*) was diagnosed in the following:— a Grey Imperial Pigeon (*Ducula pistrinaria*) 11.0, a Royal Starling (*Cosmopsarus regius*) 0.9, a Hoopoe (*Upupa epops longirostris*) 1.4, a Barnacle Goose (*Branta leucopsis*) 7.0, a Sacred Ibis (*Threskiornis aethiopicus*) 1.6, a White-tailed Black Cockatoo (*Calyptorhynchus funereus baudinni*) 2.7, and a Western red-rumped Woodpecker (*Picus erythropygius nigrigensis*) 1.2.

Pseudotuberculosis (*Pasteurella pseudotuberculosis*) was the cause of death of a Collared Aracari (*Ptereroglossus torquatus*) 2.10, a Swainsons Lorikeet (*Trichoglossus moluccanus*) 0.9, two Sacred Ibises 0.8, 0.8, and a Sulphur-breasted Toucan (*Rhamphastos sulphuratos*) 0.3.

Salmonellosis (*Salmonella typhimurium*) was responsible for the loss of the following:— an Amazon Parrot (*Amazona festiva*) 3.7, a Red Lory (*Bos b. bornea*) 1.0, a Splendid Parrakeet (*Neophema splendida*) 2.0, and a White-tailed Black Cockatoo 8.7.

Escherichia coli septicaemia was diagnosed in a Laughing Thrush (*Garulax albogularis*) 0.3, a Lesser Sulphur-crested Cockatoo (*Kakatoe sulphurae*) 0.3, a Hill Mynah (*Gracula religiosa*) 1.0, and several recently flighted Cockatiels (*Nymphicus hollandicus*).

Staphylococcal arthritis was diagnosed in a Wood Rail (*Aramides cajanea*) 0.2, and a Purple Gallinule (*Porphyrio porphyrio*) 3.0.

FUNGAL: Aspergillosis was diagnosed on one occasion during 1975 viz., in a Humboldt's Penguin (*Sphenicus humboldtii*) 6.2, mycotic lesions being found in airsacs, lungs and affecting the heart.

PARASITIC: Although no direct losses were attributed to parasitic infections during the year, it was considered that microfilarial parasitaemias in several newly-imported birds accounted for reduced states of health which induced subsequent bacterial infections.

INJURIES/ACCIDENTS: Losses due to fatal injuries received from or direct killings by predatory mammals were as follows:— one Peacock (*Pavo cristatus*) 11.3, five Shelduck (*Tadorna tadorna*) 4.0, 4.0, 4.0, 3.10, 4.1, one Sonnerats Jungle Fowl (*Gallus sonnerati*) 0.6, one Canada Goose (*Branta canadensis*) 16.3, one Barnacle Goose 7.4, one Snowgoose (*Anser c. caerulescens*) 8.2, one Mute Swan (*Cygnus olor*) 9.4, and one Hoopoe 0.4.

Losses due to (a) interspecific aggression:— one Emerald Toucanet (*Aulacorhynchus prasinus*) 3.0, two Hybrid Parakeets 1.2, 1.2, one Spreeo Starling (*Spreo superbus*) 1.3, one African Grey Parrot (*Psittacus erithacus*) 0.2, one Eclectus Parrot (*Lorius pectoralis*) 9.5, one Military Macaw (*Ara militaris*) 13.10 and one Blue and Yellow Macaw (*A. ararauna*) 14.3.

(b) intraspecific aggression:— one Bleeding Heart Pigeon (*Gallicolumba criniger*) 6.0, one Red-vented Bulbul (*Pycnonotus jocosus peguensis*) 1.11, one Gannet (*Sula bassana*) 0.9, and one White Pelican (*Pelicanus onocrotalus*) 12.0.

Two specimens were lost as a result of gunshot wounds caused maliciously by a visitor to the Gardens viz., a Purple Gallinule 0.6, and a Yellow-backed Lory (*Lorius garrulus flavopalliatu*s) 1.11.

METABOLIC/NUTRITIONAL: Visceral gout was diagnosed in a Rhea (*Rhea americana*) 5.2.

Fat infiltration of the liver was considered the primary lesion present in the following post-mortem examinations:— a Java Sparrow (*Padda oryzivora*) 1.0, a Rufous necked Weaver (*Ploceus cucullatus*) 4.2, and a Sonnerats Jungle Fowl 1.0.

In several cases throughout the year the causes of death were established as being due to stress associated with failure to adapt to a captive environment. This condition was diagnosed in directly-imported species and also in specimens acquired by the Society from private donation (eg. psittacines that had been household pets). Included in this category were Guiana Parrotlets (*Forpus p. passerinus*) and one Moustached Parakeet (*Psittacula alexandri fasciata*) all being newly-imported.

A Cassowary (*Casuaris c. bicaruntulus*) 5.0, died of internal haemorrhage following rupture of a dissecting aneurism of the posterior aorta.

REPTILIA AND AMPHIBIA (TABLE 4)

BACTERIAL: A wide variety of lesions were encountered from which several organisms were recovered. In most cases where a mixed flora was cultured, gram negative organisms were considered primary pathogens. Necrotic bacterial pneumonia was prevalent in members of the Viperidae and several Saurians died as a result of metritis, *Proteus mirabilis*, *Aeromonas formicans* and *Escherichia coli* being found present in pulmonary and reproductive tract sites.

An unidentified *Salmonella* isolated from a Common Iguana (previously reported — Veterinary Laboratory Annual Report 1974) was finally designated as a new serotype of the following antigenic structure — *Salmonella* sub-genus II, 17:m,t.

FUNGAL: Widespread mycotic infection was diagnosed in a Spectacled Cobra (*Naja naja*) 0.6, and in a Marine Toad (*Bufo marinus*) which had been resident in the Collection for more than twenty-three years.

PARASITIC: Intestinal helminths and flagellates were present in several reptilians and saurians, but with the exception of one case, none were considered responsible for death. Impaction of the bowel caused by cestodes was considered responsible for the death of a Horned Viper (*Bitis caudalis*) 0.9.

METABOLIC/NUTRITIONAL: Fatty degeneration of the liver was diagnosed in Cooks Tree Boa (*Corallus cookii*) 0.7, a Horned Viper 3.6, a Malay Pit Viper (*Agkistrodon rhodostoma*) 1.5, a Western diamond-backed Rattlesnake (*Crotalus atrox*) 2.11, and a Bosc's Monitor (*Varanus v. exanthematicus*) 0.3. Arterial disease was considered the cause of death of a Rhinoceros Iguana (*Cyclura cornuta*) 5.5.

Intussusception was diagnosed in a Rhinoceros Iguana 0.2, a Nile Monitor (*Varanus niloticus*) 12.3, a Common Iguana (*Iguana iguana*) 0.2, and a Pope's Pit Viper (*Trimeresurus popeorum*) 3.9. In all cases the intussusception was associated with rectal impaction. Failure to adapt to a captive environment was believed responsible for the deaths of three Boomslangs (*Dispholidus typus*) 0.2, 0.3, 0.3, and a Black Cobra (*Naja nigricollis*) 1.4.

Inanition associated with skeletal deformity was diagnosed in a Lord Derby's Lizard (*Cordylas giganteus*) 0.8. Nephritis was considered a contributory cause of death in a Green Python (*Chondropython viridis*) 0.4.

DEBILITY/SENILITY: A European Tortoise which had been resident in the Collection for more than twenty years died as a result of senility.

NEOPLASIA: Bone lesions found throughout the skeletal system of a Clouded Monitor (*V. nebulosus*) 0.6, were described histologically as ossifying fibrosarcoma.

MEDICINE AND SURGERY

During 1975 the Veterinary Officer dealt with 141 clinical cases, comprising 135 mammalian, 3 avian and 3 reptilian. Follow-up treatments brought the total number of attendances to 528. This figure does not include advice given regarding husbandry, minor problems and anthelmintic treatments.

It was necessary to immobilise and/or anaesthetize 44 specimens on 55 occasions for examination, surgical interference or to facilitate euthanasia (See Table 6).

Three cases, Bennetts Wallabies (*Protemnodon rufogrisea*) were submitted to Liverpool University Field Station for examination and radiography. The assistance and advice given by Mr. D. B. Murdoch of that department is gratefully acknowledged.

Ten specimens were translocated from the Gardens to the Veterinary Surgeons' Hospital for examination, radiography and/or surgery.

Further Cases of Drug Intoxication in Felidae (See footnote)

Further incidents of malicious drug intoxication occurred during the year, and with one exception involved Lions (*Panthera leo*) and Tigers (*P. tigris*), all of which had been drugged on previous occasions (See Table 5 below). One incident during September involved a Common Leopard (*P. pardus*) in the main Cat House adjacent to the Lion and Tiger enclosure.

Where feasible, blood and urine samples were taken from the drugged animals and spectrographic and chromatographic analysis carried out to identify the drug involved.

The first suspected incident during 1975 occurred on January 13th and involved a juvenile male Lion. As the animal remained conscious, blood samples were not obtained. Samples of vomitus were obtained, however, but analysis for barbiturates and salicylates was negative. The animal returned to normal five days later.

On February 24th, signs of drug intoxication were observed at 0800 hours. The animals affected were a female Tiger and her four month old cub; one male and two female Lions. The Tigress and her cub were heavily sedated for 24 hours and recovered consciousness after a further 24 hours. The male Lion and one female Lion were mildly affected showing symptoms of ataxia only. The remaining Lioness was the most severely affected. The animal was heavily sedated for 48 hours and did not recover completely for a further 36 hours. Analysis of blood samples obtained from this animal indicated that neither barbiturates nor salicylates had been administered. Diazepam, which had been used previously was suspected. As this sedative drug is difficult to detect in blood, attempts were made to obtain catheter specimens of urine. This was found to be impractical and therefore no positive identification was made of the drug involved.

Four days after the occurrence of this incident, a piece of meat of unknown origin was found in the enclosure pond. The meat was submitted for analysis and found to be contaminated with Nitrazepam.

Six months later, on August 7th, the familiar signs of drug intoxication were reported in two adult Tigers at approximately 0800 hours.

Certain differences from previous occasions were noticed, during the ensuing four hours, in that the animals appeared to be in an hypnotic state. The male Tiger remained in this state for 24 hours and returned to normality. The female, however, went into a state of deep sedation some eight hours after the onset of symptoms. Blood and urine samples were obtained for analysis. On examination of the animals' enclosure, a quantity of vomitus was found. Representative samples of this were submitted for analysis. Initial analysis of vomitus, blood and urine indicated that a barbiturate had been administered. Subsequent analysis proved the drug present to be Thiopentone sodium.

The animal remained unconscious for six days and recovery was not effected until three days later.

During the following month a further incident occurred involving a male Common Leopard. As in the previous occasion the drug was identified as Thiopentone sodium. The duration of intoxication was four days.

Approximately eight weeks later, the male lion was again a victim of drug administration, which caused unconsciousness for 48 hours. No drugs were found in the blood, but the urine was found to contain metabolite products of a short-acting barbiturate. Although the animal recovered approximately sixty hours after administration, it is regrettable to report that four weeks later the Lion had to be destroyed in the terminal stages of an illness. Post-mortem examination revealed that the illness was due to chronic peritonitis caused by healed perforated colonic ulcers.

Throughout the year treatment of the affected animals followed similar methods to those used in previous years (see footnote).

TABLE 5

SUSPECTED AND PROVEN INCIDENTS OF DRUG INTOXICATION
IN FELIDAE AT CHESTER ZOOLOGICAL GARDENS

| DATE: | ANIMALS AFFECTED: | NO: | DRUG IDENTIFIED: |
|----------------|----------------------|-----|--------------------------|
| August 1972 | Lions | 3 | — |
| December 1972 | Lions | 2 | — |
| April 1973 | Lion | 1 | — |
| June 1973 | Lions/Tiger | 4/1 | Amylobarbitone |
| August 1974 | Lion | 1 | Amylobarbitone |
| November 1974 | Lion | 1 | Diazepam |
| January 1975 | Lion | 1 | — |
| February 1975 | Lions/Tigers | 3/2 | Nitrazepam* |
| August 1975 | Tigers | 2 | Thiopentone |
| September 1975 | Common Leopard | 1 | Thiopentone |
| October 1975 | Lion | 1 | Short-acting Barbiturate |

*Drug identified from vomitus found in enclosure

FOOTNOTE See also "Barbiturate poisoning" and "Drug Intoxication in an adult male Lion" in the Veterinary Laboratory Annual Reports, 1973 and 1974 respectively.

OTHER CONDITIONS

Foot problems in paddock animals continue to be of a minor nature. Only three specimens require regular attention viz. two Greater Kudu (*Tragelaphus strepsiceros*) and one Grevy Zebra (*Equus grevyi*).

Routine anthelmintic administration was continued as a preventive measure. Thiabendazole and Parabendazole being used for ruminant stock. Where parasitic gastroenteritis is diagnosed the anthelmintic Levamisole is given whenever possible by sub-cutaneous injection. Thiabendazole and Piperazine are used for Primates, Piperazine for Felidae, and Tetramisole for Birds.

Paraplegia and mandibular osteomyelitis continue to present considerable problems in the large group of approximately sixty Bennetts Wallabies (*Protemnodon rufogrisea*). Spinal lesions examined 'post-mortem' are found to be of tubercular origin. For several years, the Wallabies have shared an exhibit containing several species of birds, of which one family of Cranes has sustained high losses due to avian tuberculosis. To date, the group has received individual clinical examination, suspect or proven cases isolated, and healthy specimens translocated to a new exhibit. In addition, all animals have been individually identified by ear tattooing. This will be of advantage in allowing selected Wallabies to be investigated in detail and consolidation of information already gained.

Vaccination against Feline Panleucopenia continues routinely, an attenuated feline infectious enteritis vaccine (living) being used in juvenile felidae at the age of approximately fourteen weeks and again eight weeks later.

ADDENDUM:

Further to the report on the repair of a prolapsed rectum in a female Mountain Gorilla (*Gorilla g. berengei*) — Veterinary Laboratory Annual Report 1974, it was necessary to anaesthetise the Gorilla on two subsequent occasions during the first 2 months of the year (See Table 6).

Three weeks after removal of a rectal impaction, the Gorilla developed a severe respiratory infection, which initially responded to a ten-day course of Oxytetracycline (Imperacin, I.C.I.), given orally. Unfortunately, the animal suffered a relapse and died, despite treatment.

Post-mortem examination revealed pneumonia and pleurisy. Tissues and materials were taken for further studies. Bacteriological examination of lung tissue and pleural effusion revealed the presence of *Escherichia coli* and *Streptococcus faecalis*. No viral agents were isolated. Histological examination of lung tissues showed congestion and oedema, alveolar epithelialisation with polymorphonuclear leucocytes and alveolar macrophages, indicative of viral or mycoplasma pneumonia.

TABLE 6
SPECIMENS IMMOBILISED OR ANAESTHETISED
DURING 1975

| Species | Sex | Estimated Body Weight (kg) | Drug | Route | Dosage (mg.) | Indication | Comments |
|--|-----|----------------------------|----------------------------|-------|---------------|--|--|
| SITATUNGA (<i>Tragelaphus spekei</i>) | M | 100 | bXylazine | IM | 440.0 | Translocation | Sufficient sedation to allow animal to be walked |
| SITATUNGA | M | 120 | aEtorphine Acepromazine | IM | 6.125 25.0 | Translocation | Good immobilisation. 7.5 mg. hDiprenorphine IV. |
| SITATUNGA | M | 100 | Etorphine Acepromazine | IM | 4.90 20.0 | Examination of swollen fetlock. | Good immobilisation. 6.0 mg. Diprenorphine IV. |
| BISON (<i>Bos bison</i>) | F | 300 | Xylazine | IM | 220.0 | To facilitate euthanasia | Good sedation. |
| PERE DAVID'S DEER (<i>Elaphurus davidianus</i>) 1st occasion | F | 80 | Xylazine | IM | 180.0 | Dystocia | Good sedation. |
| PERE DAVID'S DEER 2nd occasion | F | 80 | Xylazine | IM | 80.0 | Removal of placenta | Sufficient sedation to allow procedure with animal standing. |
| RED LECHWE (<i>Kobus leche</i>) 1st occasion | F | 90 | Etorphine Acepromazine | IM | 2.45 10.0 | Examination of fractured leg | Good immobilisation. 3.0 mg. Diprenorphine IV. |
| RED LECHWE 2nd occasion | F | 90 | Etorphine Acepromazine | IM | 2.45 10.0 | Application of plaster cast to fractured left metatarsus | Good immobilisation. 3.0 mg. Diprenorphine IV. |
| RED LECHWE 3rd occasion | F | 90 | Etorphine Acepromazine | IM | 2.45 20.0 | Removal of plaster cast | Good immobilisation. 3.0 mg. Diprenorphine IV. |
| RED LECHWE | M | 30 | Xylazine | IM | 20.0 | Examination of leg | Good sedation. |
| RED LECHWE | F | 80 | Xylazine | IM | 22.5 | To facilitate clinical examination | Good sedation. |
| RED LECHWE | M | 120 | Etorphine Acepromazine | IM | 3.675 25.0 | Relocation after escape | Good immobilisation. 4.5 mg. Diprenorphine IM. |

| Species | Sex | Estimated Body Weight (kg) | Drug | Route | Dosage (mg.) | Indication | Comments |
|---|-----|----------------------------|---------------------------|-------|---------------|--|---|
| HIGHLAND COW (<i>Bos taurus</i>) | F | 400 | Xylazine | IM | 180.0 | Treat mastitis | Good sedation. |
| GREATER KUDU (<i>Tragelaphus streptoceros</i>) | M | 200 | Etorphine Acepromazine | IM | 3.675 20.0 | Hoof trimming | Good immobilisation. 4.5 mg. Diprenorphine IV. |
| GREVY ZEBRA (<i>Equus grevyi</i>) | M | 375 | Etorphine Acepromazine | IM | 3.675 15.0 | Hoof trimming | Good immobilisation. 4.5 mg. Diprenorphine IV. |
| WAPITI (<i>Cervus canadensis</i>) | M | 200 | Etorphine Acepromazine | IM | 3.675 15.0 | Removal of antlers | Good immobilisation. 4.5 mg. Diprenorphine IV. |
| WAPITI | F | 150 | Etorphine Acepromazine | IM | 2.45 10.0 | Examination of infected hock joint | Good immobilisation. 3.0 mg. Diprenorphine IV. |
| NILGAI (<i>Bosephalus tragocamelus</i>) 1st occasion | M | 200 | Etorphine Acepromazine | IM | 7.35 30.0 | Suture lacerated leg | Poor immobilisation. Animal recumbent with periods of clonic spasms and excitement. 9.0 mg. Diprenorphine IM. |
| NILGAI 2nd occasion | M | 200 | Etorphine Xylazine | IM | 2.0 60.0 | Removal of sutures | Good sedation. |
| BACTRIAN CAMEL (<i>Camelus bactrianus</i>) 1st occasion | F | 600 | Xylazine | IM | 350.0 | Surgical repair of large bite wound on head | Good sedation. |
| BACTRIAN CAMEL 2nd occasion | F | 600 | Xylazine | IM | 464.0 | Removal of sutures | Good sedation. |
| BLACK RHINOCEROS (<i>Diceros bicornis</i>) 1st occasion | F | 1300 | Etorphine Acepromazine | IM | 3.675 35.0 | Examination and treatment of ulcerative dermatitis | Good immobilisation, in two minutes. 4.5 mg. Diprenorphine IV. followed 4 hours later by 2.25 mg. Diprenorphine IM. |

| Species | Sex | Estimated Body Weight (kg) | Drug | Route | Dosage (mg.) | Indication | Comments |
|---|-----|----------------------------|-------------------------------|----------|---------------|--|---|
| BLACK RHINOCEROS 2nd occasion | F | 1300 | Etorphine Acepromazine | IM | 3.675 35.0 | Examination and treatment of ulcerative dermatitis | 4.5 mg. Diprenorphine IV. — no response after 4 hours. 80.0 mg. Nalorphine IV. and 4.5 mg. Diprenorphine IV. Regained feet 2 hours later. |
| GORILLA (<i>Gorilla g. berengei</i>) 1st occasion | F | 120 | ePhencyclidine fPromazine | IM IM | 35.0 25.0 | Repair prolapsed rectum | Good anaesthesia. |
| GORILLA 2nd occasion | F | 120 | Phencyclidine | IM | 25.0 | Examination and treatment of rectal impaction | Light anaesthesia. |
| SYKES MONKEY (<i>Cercopithecus albogularis</i>) | F | 5 | Phencyclidine | IM | 5.0 | Examination and treatment of fight injuries | Non-recovery from anaesthesia. Died 24 hours later due to severity of injuries |
| DIANA MONKEY (<i>C. diana</i>) | F | 7 | Phencyclidine Promazine | IM IM | 10.0 12.0 | Amputation of damaged distal portion of tail | Good anaesthesia. |
| VERVET MONKEY (<i>C. pygerythrus</i>) | F | 5 | Phencyclidine | IM | 9.0 | Tooth extraction | Good anaesthesia. Clonic spasms during recovery period. |
| CAPUCHIN MONKEY (<i>Cebus albifrons</i>) 1st occasion | M | 2 | Phencyclidine | IM | 4.0 | Examination of lacerated leg | Light anaesthesia. |
| CAPUCHIN MONKEY 2nd occasion | M | 2 | Phencyclidine | IM | 4.0 | Examination of lacerated leg | Light anaesthesia. |
| LION (<i>Panthera leo</i>) | M | 70 | Phencyclidine Acepromazine | IM | 70.0 7.0 | Translocation | Dart failure — insufficient immobilisation. |
| LION | F | 150 | Phencyclidine Acepromazine | IM | 200.0 10.0 | To facilitate euthanasia | |

| Species | Sex | Estimated Body Weight (kg) | Drug | Route | Dosage (mg.) | Indication | Comments |
|---|-----|----------------------------|--|----------|---------------|----------------------------------|----------------------------|
| LION | F | 150 | Phencyclidine Acepromazine | IM | 200.0 10.0 | To facilitate euthanasia | |
| LION | F | 10 | gKetamine | IM | 150.0 | To facilitate euthanasia | |
| LION | M | 10 | Ketamine | IM | 150.0 | To facilitate euthanasia | |
| LION | F | 10 | Ketamine | IM | 150.0 | To facilitate euthanasia | |
| LION | M | 150 | Phencyclidine Acepromazine | IM | 150.0 30.0 | To facilitate euthanasia | |
| LION | M | 150 | Xylazine | IM | 1000.0 | To facilitate euthanasia | |
| LION | M | 130 | Phencyclidine Acepromazine | IM | 200.0 20.0 | To facilitate euthanasia | |
| LION | F | 150 | Phencyclidine Acepromazine | IM | 250.0 30.0 | To facilitate euthanasia | |
| TIGER (<i>P. tigris</i>) | F | 150 | Phencyclidine Acepromazine | IM | 300.0 10.0 | To facilitate euthanasia | |
| PUMA (<i>Felis concolor</i>) | F | 30 | Ketamine | IM | 800.0 | To facilitate euthanasia | |
| AMUR LEOPARD (<i>P. pardus orientalis</i>) 1st occasion | M | 80 | Phencyclidine | IM | 40.0 | Examination of orbital abscess | Light anaesthesia. |
| AMUR LEOPARD 2nd occasion | M | 80 | Phencyclidine dThiopentone sodium 2.5% to effect | IM IV | 40.0 | Removal of diseased canine tooth | Deep surgical anaesthesia. |

| Species | Sex | Estimated Body Weight (kg) | Drug | Route | Dosage (mg.) | Indication | Comments |
|--|-----|----------------------------|--|----------|------------------|---|---|
| HYBRID BEAR | M | 100 | Etorphine Acepromazine | IM | 4.90 20.0 | To facilitate euthanasia | |
| HYBRID BEAR | M | 100 | Etorphine Acepromazine | IM | 4.90 20.0 | To facilitate euthanasia | |
| BENNETTS WALLABY (<i>Protemnodon rufogrisea</i>) | M | 12 | Thiopentone sodium 2.5% | IV | 10.0 ml. | Surgical drainage of facial abscess | Good anaesthesia. |
| BENNETTS WALLABY | F | 15 | Thiopentone sodium 2.5% | IV | 15.0 ml. | Surgical drainage of facial abscess | Good anaesthesia. |
| BENNETTS WALLABY | F | 15 | Thiopentone sodium 2.5% | IV | 20.0 ml. | Radiographic examination of spine | Good anaesthesia. |
| BENNETTS WALLABY | M | 20 | Ketamine | IM | 500.0 | Surgical drainage of facial abscess | Light anaesthesia. |
| RED KANGAROO (<i>Megaleia rufa</i>) 1st occasion | F | 8 | cEtorphine Methotrimeprazine | IM | 0.148 36.0 | Radiographic examination of fractured hind leg | 0.554 mg. Diprenorphine IM. |
| RED KANGAROO 2nd occasion | F | 8 | Ketamine Thiopentone sodium 2.5% | IM IV | 100.0 6.0 ml. | Intramedullary pinning via the lower metatarsal joint | Good anaesthesia. |
| RED KANGAROO 3rd occasion | F | 8 | Ketamine | IM | 100.0 | Redress leg | Medium sedation. |
| FENNEC FOX (<i>Fennecus zerda</i>) | F | 0.5 | Etorphine Methotrimeprazine | IM | 0.015 3.60 | Amputation of forelimb | Deep surgical anaesthesia. 0.054 mg. Diprenorphine IM. |
| LESSER PANDA (<i>Ailurus fulgens</i>) | M | 5 | Phencyclidine Thiopentone sodium 2.5% to effect | IM IV | 4.0 | Enucleation of right eye and surgical drainage of orbital abscess | Deep surgical anaesthesia. |

Key for Table 6

| | | |
|----|---|---------------|
| M | = | Male |
| F | = | Female |
| IV | = | Intravenous |
| IM | = | Intramuscular |

- a. Etorphine hydrochloride and acepromazine maleate — Immobilon (large animal) — Reckitt & Colman Ltd.
- b. Xylazine — Rompun — Bayer Agrochem Ltd.
- c. Etorphine hydrochloride and methotrimeprazine — Immobilon (small animal) — Reckitt & Colman Ltd.
- d. Thiopentone sodium — IntraVal — May & Baker Ltd.
- e. Phencyclidine — Sernylan — Parke, Davis & Co.
- f. Promazine — Sparine — Wyeth & Brother Ltd.
- g. Ketamine hydrochloride — Vetalar — Parke, Davis & Co.
- h. Diprenorphine hydrochloride — Revivon (large animal and small animal) — Reckitt & Colman Ltd.

APPENDIX

Death of a Male Indian Elephant (Nobby) aged 13 years.

For several months a male Indian Elephant (*Elaphus maximus*) had shown tendencies which indicated that he would eventually become rogue. In an effort to control and prevent difficulties, a corral was built adjacent to the Pachyderm House.

During the early part of October, the animal became exceptionally restless and troublesome towards the keeping staff during a period of musth. It was decided that retention in the corral during daylight hours was advisable.

On Wednesday, 23rd October, Nobby was transferred to the corral during the day and returned to the inside enclosure in the evening. The following morning, all attempts to transfer the elephant to the corral failed, and after some two hours of non co-operation, the animal escaped from the inside enclosure by climbing into and out of the concrete retaining moat.

All available staff and vehicles were mobilised and every effort was made to corner the animal, to allow a tranquillising drug to be administered. This proved exceedingly difficult as the animal charged through several enclosures and into a large grassed area of the Zoo, where his speed was to the disadvantage of the pursuers, and the condition of the ground precluded the use of vehicles. Having ran to a point approximately $\frac{3}{4}$ mile distant from the elephant enclosure, the animal suddenly changed direction and returned towards the Gardens, running parallel to an internal perimeter fence for a distance of $\frac{1}{2}$ mile.

At this point a projectile syringe was fired by gas powered projector into the upper right shoulder. The syringe contained 7.35 mg. Etorphine hydrochloride and 30.0 mg. Acepromazine.

Within the next few minutes, however, the elephant broke through an exterior perimeter fence into the adjoining neighbourhood, where the animal was liable to cause damage to persons and property, and a decision was taken to stop the animal by shooting. With this in mind, and with the animal running in the direction of a major trunk road, he was killed by a .300 calibre bullet, fired by high-powered rifle. The carcass was returned to the Gardens and buried in the grounds.

Although it is regrettable to have to report the loss of this elephant in such circumstances, it should be mentioned that no personal injuries occurred and no damage was sustained to property outside the Zoo environs.

A Case of heavy metal poisoning in a 28 day old Male Giraffe (*Giraffa camelopardalis*)

This animal was born on the 4th November 1975. Due to an apparent lack of milk in its mother, the animal was removed for hand rearing the following day. On the 6th November 1975 the youngster was given four pints of cow colostrum, and this was continued for a further 48 hours. On the 9th November 1975 the colostrum was substituted with a proprietary calf milk replacer. The meconium was passed on this date.

Two days later, the giraffe developed white scour, and treatment consisted of daily sub-cutaneous injections of 600 mg. Ampicillin with the oral administration of an electrolyte solution (Electrosol — Willington Medicals Ltd.) for 24 hours.

Faecal consistency returned to normal within three days, and the antibiotic injections were continued for a further two days. At this time the daily consumption of milk was approximately seven pints.

A few days later, the animal's appetite began to show a daily variation, ranging from two to eight pints.

On the 28th November 1975 an acute enteritis developed with fresh blood in faeces. A slight rhinitis was also present. A sub-cutaneous injection of 750 mg. Ampicillin was given. The animal died twelve hours later.

At post-mortem examination the significant findings were acute enteritis and abomasitis with large amounts of metallic debris throughout the total length of the alimentary system (from oral cavity to rectum). A tentative diagnosis of heavy metal poisoning was made, and samples of liver, kidney, intestine and articular cartilage were taken for histological examination, and liver, kidney and intestinal tissues were submitted for toxicological analysis.

The metallic debris was found to have been ingested from one specific area of the galvanised wire enclosure fence. This area was directly beneath the location of a proprietary salt block lick. Investigations revealed that a chemical reaction had taken place on the surface of this galvanised wire. It was obvious that over a period of years, giraffe saliva and salt produce had dripped from the salt block on to the wire.

Analysis of the corroded wire showed that the material the giraffe had ingested contained 2150 ppm. Lead and 20.5% m/m Zinc. Tissue levels of Lead were, kidney 0.29 ppm. liver 0.79 ppm. and intestine 10.0 ppm. Analysis of abomasal contents showed levels of Lead and Zinc to be 1690 ppm. and 18.3% respectively. Histological examination of tissues showed liver, kidney and intestine to be normal, with the articular cartilage showing recent haemorrhage in the deep layers with degeneration of sub-cartilagenous tissue.

In conclusion, it is suggested that salt block licks should not be situated on or near a galvanised wire surface, or where such materials are used as a means of retaining animals.