



The Zoological Society of London

REGISTERED CHARITY 208728

**Supplement to the Annual
Report 1995**

This year the Society has adopted a new style of Annual Report. This is not just change for the sake of change. The primary purpose of an Annual Report is to provide members with the information that they are legally entitled to receive. But it has a secondary purpose, one which is becoming increasingly important: to 'sell' the Society to those whose goodwill and support, whether financial or political, will further its aims.

Council hopes that the changes in the presentation and content of the Annual Report will help the Society to obtain this support in a highly competitive environment. The Report focuses particularly on aspects of the year's activities and achievements that illustrate the Society's commitment to conservation and education.

To sharpen the focus and increase the impact of the underlying message, much of the 'reference' material that was included in previous Reports has been omitted. This is, however, information that many members find interesting and useful, and it is therefore provided in this supplement. All details given are as at 31 December 1995, the end of the Society's financial year.

ZSL

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The Zoological Society of London

Patron: Her Majesty the Queen

Honorary Fellows

Date of election	
1977	HRH The Prince Philip, Duke of Edinburgh, KG, KT
1991	HM The Emperor Akihito of Japan
1952	Professor Sven Otto Hörstadius <i>Zoologiska Institutionen, Uppsala, Sweden</i>
1974	Dr Roger Tory Peterson <i>Route 4, Box 131, Neck Road, Old Lyme, Connecticut, USA</i>
1975	Professor Jean Anthony <i>Museum National d'Histoire Naturelle, 55 rue de Buffon, Paris 53, France</i>
1975	Professor Jean Dorst <i>Museum National d'Histoire Naturelle (Mammifères et Oiseaux), 55 rue de Buffon, Paris 53, France</i>
1978	Professor Jose C H Carvalho <i>Museu Nacional, Quinta da Boa Vista, Rio de Janeiro, Brazil 20940</i>
1984	Professor Ernst Mayr <i>Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138-2902, USA</i>
1988	Professor Dr Milton Thiago de Mello <i>Instituto de Ciencias Biologicas, Universidad de Brasilia, Brasilia, Brazil DF70 910</i>
1990	Professor Knut Schmidt-Nielsen <i>Department of Zoology, Duke University, Durham, North Carolina 27706, USA</i>
1990	Professor John Z Young <i>Emeritus Professor of Anatomy, University College London, Gower Street, London WC1E 6BT</i>
1992	Professor Edward O Wilson <i>Museum of Comparative Zoology, Harvard University, 26 Oxford Street, Cambridge, Massachusetts 02138-2902, USA.</i>

Council

Attendance at Council*

6/7	<i>President:</i> Sir Martin Holdgate, CB, MA, PhD, FIBiol
7/7	<i>Treasurer:</i> H Wilkinson, MA, FCA
6/7	<i>Secretary:</i> Professor R McNeill Alexander, PhD, DSc, FIBiol, FRS
1/2	Mrs S Anderson, BSc ②
7/7	J Barrington-Johnson
6/7	S Bearder, PhD
7/7	B C R Bertram, MA, PhD, FIBiol
4/7	W J Boyce, DM, MA, MSc, MRCP, FFPHM
5/5	M R Brambell, MA, VetMB, PhD ①
1/1	Professor B Clarke, DPhil, FRS (Co-opted Member), from 13 December 1995
3/5	S Cobb, DPhil ①
5/5	G J Cutting ①
2/2	J C Edwards, MA, FLS ②
6/7	Professor A S D Farmer, PhD, CBiol, FIBiol, FLS, ARPS
4/7	M J Ford, DPhil
2/2	Professor T R Halliday, DPhil ②
2/7	Councillor M Jiggins, FRICS, FSVA (Co-opted Member)
4/7	J M Knowles, OBE
6/7	K Livingstone MP
2/5	Dame Anne McLaren, DPhil, FRS ①
3/5	M G Rowson, MA ①
2/7	The Hon Peregrine Simon, QC, FLS, <i>Vice-President</i>
7/7	K J Sims
6/7	A J Stevens, MA, BVSc, MRCVS, DipBact, <i>Vice-President</i>
2/7	Professor I Swingland, PhD, DSc, CBiol, FIBiol, FRSA, FRGS ②
7/7	Ms J Thornback, MSc
7/7	I Webb, BSc(Econ), MBA
1/2	Professor R J Wheeler, OBE, CBiol, FIBiol, FRSA, FRSGS (Hon), FRSE ②

* Actual/Potential

① To 20 September 1995

② From 20 September 1995

Committees and Boards 1995

Animal Welfare Committee

Terms of Reference: To advise Council on matters relating to animal welfare in the Collections, at both London Zoo and Whipsnade Wild Animal Park, at the Institute of Zoology and in the work of the Conservation & Consultancy Division.

Professor D M Broom, BVMS, MRCVS
R Ewbank, OBE, MVSc, CBiol, FIBiol
A J Higgins, BVetMed, MSc, PhD, MRCVS
I F Keymer, PhD, FRCVS, FRCPath, FIBiol
A Lindley, MA, DPhil
Professor A J Peters, DVetMed, BA, PhD, FRCVS
D G Pritchard, BVetMed, BSc, MPH, MRCVS
A J Stevens, BVSc, MRCVS, DipBact, *Chairman*
Professor I R Swingland, PhD, DSc, CBiol, FIBiol, FRSA,
FRGS

Secretary: J K Kirkwood, BVSc, PhD, MRCVS

Awards Committee

Terms of Reference: The Council presents awards for contributions to zoology: The Prince Philip Prize, The Thomas Henry Huxley Award, The Stamford Raffles Award, The Silver Medal, The Scientific Medal, The Zoological Society of London Frink Medal for British Zoologists, and The Zoological Society of London Marsh Award for Conservation Biology. The Committee advises Council on all matters relating to these awards.

Professor P P G Bateson, PhD, ScD, FRS
Professor B Bayne, PhD, FIBiol
G A Boxshall, PhD, FRS
Professor P H Harvey, DPhil, DSc, FRS
Professor M P Hassell, DPhil, DSc, FRS, *Chairman*
Professor G A Parker, PhD, FRS
Professor P A Racey, BSc, FRSE, FIBiol
Professor K Simkiss, PhD, DSc, FIBiol
Professor L Wolpert, CBE, DIC, PhD, FRS
Secretary: Miss Unity McDonnell, MA

Conservation & Consultancy Board

Terms of Reference: To supervise the affairs of the Conservation & Consultancy Division, on behalf of Council. To maintain a watching brief on conservation policy for the Society in relation to its Mission Statement. To advise all other divisions of the Society on matters relating to conservation.

J Barzdo
S Cobb, DPhil (to 17 July 1995)
Professor A S D Farmer, PhD, CBiol, FIBiol, FLS, ARPS
Professor T R Halliday, DPhil, *Chairman*
D Macdonald, DPhil
The Hon Peregrine Simon, QC, FLS
Ex officio: A J Stevens, BVSc, MRCVS, DipBact
Secretary: Miss Alexandra Dixon, BA, MSc

Education Committee

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

Mrs Geraldine Baker, BSc (from 14 September 1995)
J Barrington-Johnson
Mrs Ven Bolton
G J Cutting
S Flowerday
I Hattingh, BSc
Professor A Lucas, BEd, PhD, FIBiol, *Chairman* (to 1 May 1995)
Mrs Wendy Riddle
A Smith, PhD, *Chairman* (from 14 September 1995)
Secretary: Miss Claire Robinson, BEd

Institute of Zoology Committee

Terms of Reference: To advise the Society and the University of London under the terms of the Agreement between them; to consider and make recommendations on all matters relating to the Institute of Zoology.

Professor B C Clarke, DPhil, FRS
J Goss-Custard, PhD
Professor A G Hildrew, PhD
Professor C R Howard, PhD, DSc, MRCPath, FIBiol
Professor L E Lanyon, BVSc, PhD, DSc, MRCVS, *Chairman*
Professor Linda Partridge, DPhil, FRSE
R Pellew, PhD
EX OFFICIO: University of London
Vice Chancellor
Principal
Chairman of Convocation
Zoological Society of London
President
Secretary
Treasurer
Professor L M Gosling, PhD, FIBiol

Secretary: Mrs P A Evans

International Zoo Yearbook Editorial Board

Terms of reference: To advise on the content and production of the *Yearbook*.

Marcia A Edwards, PhD, FLS
N L Jackson
Professor Janet Kear, OBE, PhD
J M Knowles, OBE
Georgina Mace, DPhil
J J C Mallinson, CBiol, FIBiol, FRGS, *Chairman*
A S Richford, DPhil
Professor R J Wheater, OBE, CBiol, FIBiol, FRSA, FRSGS
(Hon), FRSE
Secretary: P J S Olney, BSc, DipEd, CBiol, FIBiol, FLS

Journal of Zoology Editorial Board

Terms of Reference: To advise the Editor of the *Journal of Zoology* within their field(s) of research and to suggest suitable referees.

Professor R J Berry, MA, PhD, DSc, FRSE, FIBiol, FLS
Professor R W Elwood, BSc, PhD
Professor P R Evans, MA, PhD, DPhil
T F Flannery, BA, MSc, PhD
Professor P H Harvey, BA, DPhil, DSc, FRS
Professor R R Hofmann, TA, Dr med vet, Dr habil
Katharina Mangold, PhD
Professor B Morton, BSc, PhD
Professor J D Skinner, MSc, PhD, FIBiol, FRS(SA)
Professor I R Swingland, PhD, DSc, C Biol, FIBiol, FRSA,
FRGS
Secretary: Juliet Clutton-Brock, BSc, PhD, DSc

Learned Society Board

Terms of Reference: To be accountable to Council for, and supervise all matters relating to, the policy on finance of the Learned Society comprising the Fellowship, the Library, the general secretariat and, working closely with its own committee, the Publications Department; to monitor adherence to the Society's objects; to initiate income-generating measures through exploitation of the Society's archive and by other means.

B C R Bertram, MA, PhD
A C Campbell, DPhil (from 7 November 1995)
J C Edwards, MA, FLS, *Chairman*
Marcia A Edwards, PhD, FLS
M J Ford, DPhil
J P Griffin, BSc
D T D Nash (from 7 November 1995)
Secretary: P H Denton, MBIM

London Zoo Board

Terms of Reference: To supervise all matters relating to the operation of London Zoo covering animal management, visitor operations, preparation of draft budgets, operational target setting and monitoring, staffing, marketing, capital and development projects.

W J Boyce, DM, MA, MSc, MRCP, FFPHM, *Chairman*
(from 18 October 1995)
M R Brambell, VetMB, PhD, MRCVS, *Chairman* (to 5
September 1995)
C Garnett (from 5 September 1995)
J H W Gipps, PhD
A Jackson
K Livingstone, MP (from 5 September 1995)
M G Rowson, MA
K J Sims (from 5 September 1995)
Ms Jane Thornback, MSc
Secretary: P H Denton, MBIM

Publications Committee

Terms of Reference: To advise Council on matters concerning the publication of zoological research in the *Journal of Zoology* and *Symposia*; to make recommendations on Library policy.

Professor R J Berry, PhD, DSc, FRSE, FIBiol, FLS,
Chairman (to 13 June 1995)
S Albon, PhD
G A Boxshall, PhD, FRS
M Bruford, PhD
C K Catchpole, PhD, *Chairman* (from 14 November 1995)
Sara J Churchfield, PhD
J Gurnell, PhD
Marion Nixon, PhD
T J Roper, PhD
Professor R C Tinsley, PhD
Secretary: Mrs Patricia Manly

Whipsnade Wild Animal Park Board

Terms of Reference: To advise Council on all matters relating to the operation of Whipsnade Wild Animal Park covering animal management, visitor operations, preparation of draft budgets, operational target setting and monitoring, staffing, marketing, capital and development projects.

S D Earley
Professor T R Halliday, DPhil
J M Knowles, OBE, *Chairman*
C J S Marler
D Moore (from 26 July 1995)
J Piggott (from 22 September 1995)
R Smith
I Webb, BSc(Econ), MBA
Secretary: Miss Linda Hughes (to 21 June 1995),
Mrs Gill Farrell (from 26 July 1995)

Staff

As at 31 December 1995

Senior Executives

Director General: R D A Burge, BSc
Director of Science: Professor L M Gosling, PhD, FIBiol
Director, London Zoo: J H W Gipps, PhD
Chief Executive, Whipsnade Wild Animal Park: S D Earley, MInstD
Director, Conservation & Consultancy Division: Miss Alexandra Dixon, BA, MSc
Director of Finance: N J Reed, BSc, FCA
Director of Personnel: I M Meyrick, BA, FIPD
Clerk to the Council: P H Denton, MIBM

Central Functions

Director General: R D A Burge, BSc
Secretary/PA to Director General: Miss Karen Harding

Clerk to the Council: P H Denton, MIBM
Secretary to the Officers: Mrs Anne Chapman

Personnel

Director of Personnel: I M Meyrick, BA, FIPD
Senior Personnel Officer: Ms Paula Harris, GradIPD
Personnel Administrator: Ms Marcia Latty, GradIPD
Pensions Administrator: T P Carey

Consulting Staff

Medical Referee: K H Lewis, MA, BM, BCh

Finance

Director of Finance: N J Reed, BSc, FCA
Secretary: Mrs Susan Morgan
Financial Accountant: Miss Joan Jupp
Management Accountant: C J Biggie; J M Wright, FCA
Cash Book Keeper: Miss Lynette Archer-Morgan
Chief Cashier: D P Lack
Cashiers: P A Gibbs; L Oxley; J A Piggott
Payments Supervisor: Mrs Rhonda Rodrigues
Wages Clerk: Miss Jackie Owen

Learned Society

Library

Librarian: Ms Ann Sylph, BSc, MSc, MInfSc
Assistant Librarian: Ms Kate Ferguson, BA, DipEd, DipLib
Library Assistant: M Palmer, BA

Publications

International Zoo Yearbook

Editors: P J S Olney, BSc, DipEd, CBiol, FIBiol, FLS;
Miss Fiona Anne Fisker, BSc
Assistant Editor: Ms Linda DaVolls, BA
Clerk/Typist: M G Barratt
*Journal of Zoology, Symposia, Nomenclator Zoologicus,
Zoological Record*
Editor, Journal of Zoology: Juliet Clutton-Brock, PhD, DSc

Honorary Editor, Zoological Record & Nomenclator

Zoologicus: Marcia A Edwards, PhD, FLS
Assistant Editors: Miss Unity McDonnell, MA; Miss Angela J Stroud, BSc
Editorial Assistant: Mrs Patricia Manly
Publications Assistant: Miss Shyama Iyer

Fellowship

Fellowship Officer: Mrs Patsy Conway

Institute of Zoology

Director: Professor L M Gosling, PhD, FIBiol
Office Manager/PA to Director of Science: Linda Forbes, BSc
Development Officer: P Cotgreave, DPhil
Director's Research Technician: Elizabeth A Thornton, BSc
Honorary Research Fellows: A J E Cave, MD, DSc, FRCS, FLS; Sir Cyril A Clarke, KBE, MD, FRCP, FRS
Secretaries: Joanne Keogh; Catherine Kerr, BA; Maureen Thompson
Laboratory Superintendent (Nuffield): P G Cottingham, BTec (CED), MIScT
Laboratory Superintendent (Wellcome & Hospital): G F Nevill, HND
Chief Technician (Animals): M J Llovet, FIAT
Senior Technician (Animals): A G Hartley, BAgrSc
Animal Technicians: Mandy Gordon, IIAT; Caroline Layram, OND; J Rozowski
Senior Workshop Technician: W G Ray, AIScT
Senior Photographic Technician: T R Dennett
General Laboratory Aides: Breda Farrell; Jean Hutchins

Conservation Genetics

Research Fellows: M W Bruford, PhD (*Head of Group*); Elizabeth M Barratt, PhD; M Beaumont, PhD; C G Faulkes, PhD; W Jordan, PhD; I J Saccheri, PhD; Helen F Stanley, PhD
Honorary Research Fellows: H J Hall, PhD; R Hammond, PhD; R K Wayne, PhD
Research Associate: J de Ruiter, PhD
Senior Technician: D Cheesman, BTec, HNC
Postgraduate Research Students: M Bayes, BSc; Tamsin Burland, BSc; S P Casey, BSc; C Ciofi, BSc; F M Clarke, BSc; T Coote, BSc
Technicians: Sheila C Boddy, BSc; Sian Colley, BSc; R Deaville, BSc; Dada Gotelli, BSc; Harriet Green, BSc; Katherine Jeffery, BSc; Miranda Kadwell, BSc; D Lees, BSc; Emma Taylor, BSc; Saffron Townsend, BSc

Ecology

Research Fellows: S D Albon, PhD (*Head of Group*); A F G Bourke, PhD; P Cotgreave, DPhil; Sarah M Durant, PhD; J R Ginsberg, PhD
NERC Advanced Research Fellow: Georgina M Mace, DPhil
Honorary Research Fellows: R A Brett, MA, PhD; N Leader-Williams, BVSc, MRCVS, PhD

Research Associate: T Coulson, PhD
Research Assistant: J Irvine, MSc
Postgraduate Research Students: S Brown, BSc; G Chan, BSc; Sarah C Cleaveland, BSc, BA, VetMB; Daniella de Luca, BSc; Manuela Fonseca, MSc; T Jones, BSc; Melanie Kershaw, BSc; Jocelyn Milner, BSc; Isabelle Porteous, DipVetMed; S Williams, BSc
Technicians: Ailsa Curnow, BSc (p/t); Jill C Pilkington, BSc

Veterinary Science & Reproductive Biology

Zuckerman Research Fellow - Senior Veterinary Officer: J K Kirkwood, BVSc, PhD, MRCVS (*Head of Group*)

Veterinary Science

Research Fellow: P M Bennett, PhD

Honorary Research Fellows: G H du Boulay, CBE, MB, BSM, FRCP, DMRD; P Kertesz, BDS, LDS, RCS

Honorary Overseas Research Fellow: J Samour Hasbun, DVM, PhD

Pathologist: A A Cunningham, BVMS, MRCVS

Veterinary Officer (London): A W Sainsbury, BVMS, MRCVS

Marine Mammals Strandings Co-ordinator: Paul Jepson, BVMS, MRCVS

Veterinary Officer (Whipsnade Wild Animal Park): E Flach, MA, VetMD, MSc, MRCVS

Senior Veterinary Nurse: A K Fitzgerald, VN

Technician: S Macgregor, HTec, MSc

Biology Technician: Gillian Bell, BSc

Veterinary Nurses: Gillian Bennett, VN; Christine Dean, VN; Ilona Furrokh, BSc, VN

Postgraduate Research Student: Debra Bourne, BA, VetMB, MRCVS

Reproductive Biology

Research Fellows: W V Holt, PhD (*Unit Head*); Alison Moore, PhD

Honorary Research Fellows: J Garnier, DMV; H N Jabbour, PhD; H J Shaw, PhD; P F Watson, BVetMed, BSc, PhD, MRCVS

Postgraduate Research Students: D Bainbridge, MA, VetMB, MRCVS; L Clarke, BSc; A Medrano, BSc; C Stafford, BSc

Senior Technician: Daphne I Green, HNC, AIScT

Technicians: Patricia Lovell, HNC; Sunita Patel, BSc

Conservation & Consultancy Division

Director: Miss Alexandra Dixon, BA, MSc

Secretary: Mrs Irene Finch

Research Assistant: Ms Claire Belsham, BA

Overseas Staff

K Dunham, BSc, MPhil; J R B Flamand, BSc, BA, MA, VetMB; W Flavell; R Hammond, PhD; C Kichenside; R Kock, MA, VetMB, MRCVS; T Wachter, PhD

London Zoo

Director: J H W Gipps, PhD

Secretary/PA to the Director: Ms Fiona Jamieson

Animal Management

Senior Curator: S J Tonge, BSc

Secretary: Miss Catherine Proud, BA

Conservation Programmes Co-ordinator: Ms Sarah Christie, BSc

Registrar: Miss Elspeth Chaplin

Zoo Manager: W B A James

Assistant Curator of Mammals: D M Richardson

Assistant Curator of Invertebrates: P Pearce-Kelly

Assistant Curator of Lower Vertebrates: Heather Hall, BSc, PhD

Keepers in Charge: G S Asher; M E Carman; R Charter; D Clarke; B J Harman; P R Harrington; B Harris; F W Smith; Mrs Linda Walker; Ms Esther Wenman, BA; F Wheeler

Senior Keepers: J Buchan; M S Clark; M Fagg; M A Hennessey; A James; K Lloyd; S Mannall; T W March; S J Matchett; J Nicklin; Miss Jacqueline Ossowski, BSc; J H Pullen; D E Robinson; J B Robson; L Sambrook; M J Tiley

Qualified Keepers: J Boyd; Miss Sarah Carter; Miss Caroline Connor; Miss Amanda Ferguson, BSc; M S Fitzpatrick, BSc; P Kybett; Miss Tracey Lee; Miss Margaret Lamb; D McGinnie; Miss Andrea McKenna; C E Wickenden; Miss Carol Wilson; S Young

Trainee Keepers: P Atkin; J Boyer; Ms Nichola Burnett; D Glynn; Ms Patsy Joseph; Ms Vanessa Long; Ms Una McCarthy; Ms Karen Nolan, BSc; D Rowlatt, BSc; J W Stevens; S Sturgeon; Ms Luciana Wagner; C Walker; Ms Mary Welsh; S Whitelock

Marketing

Head of Marketing & Public Relations: Ms Sharon Ament, MA, DipCIM

Secretary: Miss Jill Ratcliffe, BSc

Group Sales & Travel Trade Executives: T Lester

Promotions & Licensing Executive: J Hosking

Press & PR Officer: Mrs Kirstie Macfarlane

Membership Manager: Ms Gina Guarnieri

Press & PR Assistant: Miss Lilamani da Silva

Lifewatch and Adoptions Administrator: Miss Jane Keating

Marketing Administrator: Miss Theresa Butler

Development

Head of Development: Mrs Valerie Pakenham-Keady

Administrator: Miss Lisa Friend

Development Officer: B Addenbrooke

Special Events Assistant: A Findlay

Education

Head of Education: Miss Claire Robinson, BEd

Secretary to Head of Education (p/t): Ms Angela Anderson

Education Officers: Miss Sandi Bain, BSc; vacancy

Education Officer (Special Needs): Ms Jennifer Jones

Volunteer Co-ordinator: D Hodgkins

Interpretation Officer: Miss Clare Kelly, BSc

General Services

General Services Manager: G Roden

Maintenance Supervisor: P Davies (*died 3 January 1996*)

Secretary: Mrs Dot Price

Building Craftspeople: P D Bell; A Connolly; M Foster; J C Froud; W F Manly; M Mursell; S Roberts; T Sheehan
Electricians: C G Rolfe; R Fitzgerald; P Smith
Semiskilled Craftsperson: J Baker
Gardens Supervisor: Miss Julie Smith
Chargehand: D Burke
Gardeners: M Baker; N Heaphy; Miss Lesley Longley; R J Lynch; Miss Michelle Malka; G A Manly; G Southard
Purchasing & Transport Chargehand: R J Pearce
Drivers/Stores Assistants: R E Harrison; R Ashmore
Stores Assistant: A W James
Supplies Buyer: C P Major
Graphic Co-ordinator/Print & Stationery Buyer: A Taylor
Grounds Supervisor: P Walker-Croft
Groundstaff Chargehand: J Turner
Drivers: G A Houlder; A Martin; O Tiwari
Groundsperson/Sweepers: A W Ransome; J Breen
Toilet Attendants: Mrs Beatrice Ampong; Mrs Rose Kalikwani; Miss Bindi Lee; Mrs Kay Rajah; Mrs Anna Thornburrow

Projects

Projects Manager: B Edwards
Contracts Co-ordinator: M J Swallow

Retail

Retail Manager: Mrs Yvonne Ubels
Assistant Retail Manager: Mrs Jayne Powell
Office Administrator: W Asare-Brown
Supervisors: G Constantine; Mrs Evon Nicholas
Warehouse Supervisor: N Foot
Sales Assistants: Miss Patricia Delius; Mrs Dawn Mannall

Visitor Operations

Visitor Operations Manager: B Nutkins
Secretary: Miss Brenda Tonks
Admissions Officer: R McLaughlin
Assistant Admissions Officer: Mrs Suzanne Cole
Senior Gatekeeper: C Ramdass
Gatekeepers/Cashiers: Mrs Patience Djima; Miss Tami Houlder (p/t); Miss Bala Patel (p/t); Ms Olga Pebbles (p/t); Miss Rematu Sesay; Ms Gill Warren (p/t)
Security Gatekeepers/Car Park Attendants: P K Brown; Ms Veronica Powell; G Scofield; M Wheeler
Car Park Attendant: A Aremu
Ticket Collector (p/t): J W Richards
First Aid Attendant: Miss Grace Reay
Weekend First Aid Attendant: Ms Jackie Chapman
Receptionists: D Hitchcock; Mrs Barbie Ordish
Telephonists: Mrs Brenda Ambrose; S Shokoufan; Mrs Christine Labbett
Events Co-ordinator: R Tomlinson
Senior Presenter: A Hallsworth
Presenters: C Preston; R Goodchild

Whipsnade Wild Animal Park

Chief Executive: S D Earley, MInstD
Secretary to Chief Executive: Ms Gillian Farrell

Finance and Works

Financial Controller: R Bodnarec

Senior Accounts Clerk: Mrs Carol Davies
Assistant Accounts Clerk: Miss Zoe Gill
Senior Cashier: Mrs Joan Lee
Cashier: A Portas
Works Co-ordinator: B Davies
Works Chargehand: G Guild
Stores: A Latham
Craftsmen: M Guild; J C Harrold; D Law; J Whinnett

Projects and Operations

Projects & Operations Manager: A Coates, BA, DipArch
Customer Services Co-ordinator: Miss Linda Hughes
Receptionist: Mrs Margaret Hull
Administrative Assistant: Miss Anna Williams
Railway Engineer: I Gordon
Park Services Co-ordinator: M Shillingford
Drivers: J Baisbrown; R Beeton; J Bradley
Groundsman: R Scanlan
Gardener: S Rutter

Retail and Main Gate

Retail/Gate Co-ordinator: Mrs Maureen White
Senior Gatekeeper: H Jackson
Assistant Supervisor (Retail): Miss Margaret Matthews

Catering

Catering Manager: J Thornicroft
Assistant Catering Manager: Mrs Sue Covington
Assistant Trainee Catering Manager: Miss Zoe Fitzpatrick
General Catering Assistant (p/t): Mrs Marjory Grizzell
Assistant Chef/Manager: Ms Tracy Smith
Sales & Hospitality Executive: Miss Jane Pardoe, BSc

Marketing & Development

Senior Marketing & Development Manager: Miss Frances Sutton
Marketing Executive: Miss Nicole Morse, BA
Membership Administrator: Miss Tracey Cross
Secretary (p/t): Ms Janet Hughes

Education

Head of Education: Miss Margaret Williams, BSc, PGCE
Education Officer: Ms Claire Bidder
Volunteer Co-ordinator: G Lucas

Animal Management

Curator: N Lindsay, BSc, CBiol, MIBiol
Assistant to Curator: Mrs Dena Richards
Regional Co-ordinators: V Curzon; R Hutton; A R White
Deputy Co-ordinators: C Bates; C Tack
Animal Activities Co-ordinator: L J Radford
Bird Show Organiser/Demonstrator: A Reeve
Animal Activities Staff: P Williams
Senior Keepers: J E Baines; M Best; M Brett; R M Catchpole; J C Chapman; Mrs Carole Day; Mrs Joy Lear; M Lear; A E Morris; T Moxey; Miss Marilyn Spittel; K Taylor; Miss Leanne Waterhouse
Qualified Keeper: D Fisher
Trainee Keepers: Miss Rebecca Cooper; P Curzon; Miss Sarah Gollop; J Gregory; M Holden, BSc; Miss Michelle Povada, BSc; L Warren; Mrs Veronica Watkins; C White.

Volunteers

As at 31 December 1995

Library

Colin Blaikley; Ailsa Edwards; Valery Golding; Bridget D Guy; Royce Harris; Peter Hayward; Paddy LeQuesne; Hilary Marsh; Karl Reinders; Maurice Sobell; Andre Verstraete.

London Zoo

Kryisia Al-Yawer; Raj Amin; Margaret Armstrong; Fran Audric; John Ayrey

J Barrington Johnson; Lisa Bayer; Pam Beanlands; Nilgun Bishop; Denise Blackwell; Helen Brandon-Jones; Sally Brough; Andrew Brown; Simon Brown; Elaine Brumstead; Philip Byrne

Lilah Cameron; Johanna Carse; Debbie Catt; David Chan; Tony Cholerton; John Clifford; Sid Cocks; Andrew Colman; Mary Colwill; John Collins; Dorothy Copeland; Jackie Cottrell; Richard Creighton; Daphne Cross; Isabel Cruickshank; Ann Curtis; Geoff Cutting

Gladys Davies; Jennie Deco; Dilvia Dall Prato; Kathleen Dixon; Don Driver

Joan Eggmore; Mary Elgin; Beth Evans; Neil Faith; Felix Fifer; Jo Finegan; Jill Fleming

Janet Gates; Celia Gaya; David Gibson; Trish Gibson; Valery Golding; Barbara Gordon; Nevil Gorthy; Len Gould; Elizabeth Grabow; Dorothy Gyngell

Sheila Haes; Maureen Hart; Ron Hart; Pat Healy; Lisa Hodgekinson; Joyce Hunter Lieberman; David Hutchison

Sheila Jackson; Heather Johnson; Iris Johnson; Edward Jones; Beverly Jordan

Geoffrey Kenton; Eric King; Wyn Knowles; Margaret Lawrence; Jon Lee; Belinda Line; Joy Long

Rhonda Maclean; Tim May; Jackie McMahon; Shuna Mitchell; H A Moore; George Mumford; Jackie Mutton

Alison Noyes; Mandy Odwell; Stephen Otter; Prafulla Patel; Sally Penfold; Grace Pirie; Jonathan Pollard; Sue Preston

Grant Rattray; Dorothy Reed; Jean Reich; Ian Robinson; Kerstin Rucht

Jean Sherman; Valery Skinner; Jo Smith; Maurice Sobell; Ruth Sober; Margaret Stafford; Nicola Strazzullo; Paula Svensson

John Thompson; Ronn Thwaites; Maggie Tighe; Michael Tigwell; Brenda Tonks; M Tracey; Mrs Wailes; Amelia Walker; Amanda Waterfield; Delene Welch; Tracey Willis; Marion Winter; Tracy Wombwell; David Wooderson; Jonathan Wright.

Whipsnade Wild Animal Park

Jean Anderson; Michael Atkins; Heather Bardner; Kirsty Bevan; Jill Broad; Leile Brown; Carol Butler

Sidney Cocks; Maureen Cook; Marion Cowan; Ronald Cowan; Catherine Dyer

Kathleen Eames; Kenneth Eames; Arthur Ellis; Pamela Erwood; Mary Frost

Denis Garner; Erica Godman; Nevil Gorthy; Robert Green; Jim Griffin; Norman Hancock; Pauline Hodgson

Dorothy Isaacs; Austin Janes; Jeff Knowles; Dorothy Lawson

Malcolm Mackenzie; Eileen March; Miriam Martin; Betty McHugh; Patricia Mitchell

Lyn Paynter; Audrey Perrott; Ildid Putnam; Enid Ranson; Christopher Richardson; Elizabeth Richmond; Suzannah Rush

Rebecca Sandifer; Raye Sawyer; Peter Scrivener; Christine Sharpe; Kenneth Sharpe; Walter Smith; Mary Snoxall; Tony Stevens; Paul Susman

Hans van der Grinten; Arthur Waring; Elizabeth Webb; Naomi White; Patricia Wickens; Jennifer Wynn.

The Society warmly thanks all the volunteers who have done so much to help its work in 1995.

If you are interested in becoming a volunteer, please ask the Volunteer Co-ordinator at London Zoo or Whipsnade Wild Animal Park for further details.

Collaboration with Zoological, Conservation and Research Organizations

Details of collaboration and representation by staff and research workers of the Institute of Zoology appear separately, in the Institute's Scientific Report for 1995.

Collaborative projects

Bedfordshire Bat Group: Collaborative work on conservation of local bat species.

British Airways Assisting Conservation: Collaboration on conservation of great bustard; Collaboration in joint training programme between Whipsnade and Game and Wildlife Department in Ghana.

English Nature: Reintroduction of wartbiter and field crickets; Management of SSSI at Whipsnade; Dormouse and smooth snake captive breeding projects; Breeding and reintroduction of Barberry carpet moth.

Faith Foundation: Technical advice in Tanzania.

Great Bustard Trust: Collaborative work on management and conservation of great bustards.

HM Customs: Housing and advice on identification of reptiles.

Kenya Wildlife Service: Secondment of Dr R Kock as senior veterinarian.

King Mahendra Trust for Nature Conservation: Assistance for Chitwan National Park.

Kingston University, Surrey: Protozoal infections of reptiles and invertebrates.

Natal Parks Board, South Africa: Funding for antipoaching equipment.

National Commission of Wildlife Conservation and Development, Saudi Arabia: Management of King Khalid Wildlife Research Centre.

National Parks Department, Uganda: Advice on future sustainability of the parks.

Open University: Studies of peafowl at Whipsnade.

Royal Botanic Gardens at Kew: Collaboration in *Partula* reintroduction programme.

Saratov Regional Authority, Russia: Joint programme for conservation of great bustard.

Save Valley Conservancy, Zimbabwe: Reproductive monitoring of black rhinoceros population.

UK Rhino Group: Rhinos in crisis campaign.

University of Cambridge: Behavioural study on Patagonian cavy at Whipsnade; Behavioural ecology study of Chinese water deer at Whipsnade.

University of East London: Protozoal infections of reptiles and invertebrates.

University of Oxford: Studies of peafowl at Whipsnade.

WHO Collaborative Centre for the Control of Antivenoms, Liverpool School of Tropical Medicine (The Alistair Reid Snake Venom Research Unit): Advice on housing and management of venomous snakes.

Representation

ASLIB Biosciences Group: Ms A Sylph (Membership Secretary).

Bedfordshire Education Business Partnership: Ms M Williams (Member).

Cambridge College of Agriculture and Horticulture: Whipsnade Industrial Link.

European Association of Zoological Parks and Aquaria: Mr J Buchan (Member, EEP Primate TAG); Mr M E Carman (Member, EEP Primate TAG); Miss S K Christie (Member, EEP Felid, Bovid and Primate TAGs); Mr N B D Lindsay (Member, Red-crowned Crane, Cheetah, White Rhino, Indian Rhino, Grevy's Zebra, Przewalski's Horse, Pygmy Hippo, Bongo, Gaur, Scimitar-horned Oryx and Musk Ox EEPs; Member, EEP Gruiformes and Deer TAGs); Mr P Pearce-Kelly (Chairman, EEP Terrestrial Invertebrate TAG); Mr D M Richardson (Member, EEP Felid, Bovid, and Marsupial TAGs); Mr S J Tonge (Member, EEP Bovid and Ciconiform TAGs); Mr F Wheeler (Corresponding Member, EEP Marsupial TAG).

Fauna and Flora International, Conservation Committee: Mr P Pearce-Kelly (Member).

Federation of Zoological Gardens of Great Britain and Ireland: London Zoo (Member); Whipsnade Wild Animal Park (Member).

Council: Miss Alexandra Dixon (Member; Council Representative for Fauna & Flora International); Mr S Earley (Hon. Treasurer); Dr J H W Gipps (Member).

Joint Management of Species Group Committee: Miss S K Christie (Corresponding Member); Mr N B D Lindsay (Corresponding Member); Mr S J Tonge (Member); Mr D M Richardson (Member).

Conservation and Animal Management Committee: Miss Alexandra Dixon (Member); Mr N B D Lindsay (Chairman); Mr S J Tonge (Member).

Education Committee: Ms M Williams (Member).

Membership and Licensing Committee: Mr S Earley (Member).

Marketing Committee: Mr S Earley (Member).

Taxon Advisory Groups: Mr C Bates (Member, Stork, Ibis and Spoonbill TAG); Mr J Buchan (Member, UK Primate TAG); Mr M E Carman (Member, UK Primate TAG); Miss S K Christie (Member, UK Primate, Felid, and Bovid TAGs); Mr D Clarke (Member, UK Terrestrial Invertebrate TAG; Chairman, Mollusc Subgroup; Member, Fish and Aquatic Invertebrate TAG); Miss A M Dixon (Member, UK Rhino TAG); Miss A Ferguson (Member, UK Owl TAG); Mr M S Fitzpatrick (Member, UK Small Carnivore TAG); Dr H Hall (Member, Fish and Aquatic Invertebrate TAG; Member, Triops Study Group); Mr N B D Lindsay

(Chairman, UK Rhino TAG; Co-Chairman, UK Crane TAG; Member, UK Bovid and Equid TAGs); Mr T Moxey (Member, UK Terrestrial Invertebrate TAG); Mr P Pearce-Kelly (Member, UK Terrestrial Invertebrate TAG; Chairman, Orthoptera Sub-Group); Mr J H Pullen (Member, UK Primate TAG); Mr L Radford (Member, UK Marine Mammal TAG); Mr A Reeve (Member, UK Diurnal Raptor TAG); Mr D M Richardson (Member, UK Felid TAG; Co-Chairman, UK Bovid TAG); Mr S J Tonge (Co-Chairman, UK Bovid TAG; Chairman, Hornbill, Toucan and Turaco TAG; Member, UK Parrot, Penguin, Passerine, Pigeon and Reptile TAGs); Miss E Wenman (Member, UK Reptile TAG); Mr F Wheeler (Member, UK Small Carnivore TAG); Mr A White (Member, UK Penguin TAG); Mr M Lear (Member, UK Reptile TAG).

Ghana Game & Wildlife Department: Mr N B D Lindsay (Adviser to Zoo Committee).

Gibbon Rehabilitation Project, Phuket, Thailand: Miss S K Christie (Adviser).

Institute of Fisheries, Management Committee: Dr H Hall (Member).

International Species Inventory System: The Zoological Society of London (Corporate Member).

International Species Recovery Committee for the Golden Lion Tamarin: Dr J H W Gipps (Member).

International Union of Directors of Zoological Gardens: Dr J H W Gipps (Member).

IUCN - World Conservation Union (Species Survival Commission): Miss S K Christie (Member, Cat and Conservation Breeding Specialist Groups); Miss A M Dixon (Member, Conservation Breeding, Antelope, Parrot, and Reintroduction Specialist Groups); Dr J R B Flamand (Member, Antelope and Veterinary Groups); Dr J H W Gipps (Member, Conservation Breeding, Primate and

Reintroduction Specialist Groups); Mr N B D Lindsay (Member, Reintroduction and Insectivore Specialist Groups); Mr P Pearce-Kelly (Member, Mollusc and Reintroduction Specialist Groups; Member, Invertebrate Conservation Task Force; Chairman, CBSG Invertebrate Working Group); Mr P J Olney (International Studbook Coordinator, Conservation Breeding Specialist Group; Emeritus Member, Reintroduction Specialist Group); Mr D M Richardson (Member, Cat and Conservation Breeding Specialist Groups); Mr S J Tonge (Member, Tortoise and Freshwater Turtle, and Madagascan Reptile and Amphibian Specialist Groups).

Madagascan Fauna Group: The Zoological Society of London (Corporate Member).

Marwell Preservation Trust: Mr N B D Lindsay (Member, Scientific and Animal Management Committees).

Oxford Brookes University: Ms M Williams (Visiting Lecturer).

Pacific Island Land Snail Group: Mr P Pearce-Kelly (International Co-ordinator, *Partula* snail programme); Mr D Clarke (International Studbook Holder).

Sumatran Tiger PHVA and Captive Breeding Workshop, Indonesia: Miss S K Christie (Participant); Mr D M Richardson (Participant).

UK Dependent Territories, Conservation Forum: Miss A M Dixon (Member); Mr P Pearce-Kelly (Member, Executive Committee; Chairman, St Helena Working Group).

Wild Animal Rescue Foundation of Thailand: Miss S K Christie (Adviser).

Wildlife and Countryside Link: Miss A M Dixon (Member, ZSL Representative; Vice-Chairman, Conventions Group).

World Pheasant Association: Mr S J Tonge (Chairman, Conservation Policies and Programmes Committee).

Zoo Outreach Organization, India: The Zoological Society of London (Corporate Member).

Publications by the Society's Staff

Publications by staff and research workers of the Society's Institute of Zoology appear separately, in the Institute's Scientific Report for 1995.

Ball, S J, Cunningham, A A, Clarke, D & Daszak, P (1995). Septate gregarines associated with a disease of the hissing cockroach *Gromphadorhina portentosa*. *J. Invert. Path.* **65**: 311-312.

Bloxam, Q M C & Tonge, S J (1995). Amphibians: suitable candidates for breeding - release programmes. *Biodiversity Conserv.* **4**: 636-644.

Croft, P & Copland, M J W (1995). The effect of host instar on the size and sex ratio of the endoparasitoid *Dacnusa sibirica*. *Entomologia exp. appl.* **74**: 121-124.

Pearce-Kelly, P, Mace, G M & Clarke, D (1995). The release of captive bred snails (*Partula taeniata*) into a semi-natural environment. *Biodiversity Conserv.* **4**: 645-663.

Webb, T A & Robinson, D (1994). Breeding the Black-backed fruit dove, at London Zoo. *Avicult. Mag.* **100**: 189-191.

Animal Collection Report 1995

The Society's animal collection is the largest and most diverse in the country. By its sheer size and range, incorporating species from the size of elephants to ants, it has an important effect on how animal collections (zoos) are perceived by the public, and also on how they are managed both within and without the Society. The latter is a role that the Society has traditionally had within the UK zoo community, but during the last 10 years that role has become more formalized through the activities of the Federation of Zoos of Great Britain and Ireland, of which the Society is a founding member.

The Federation manages the stocks of animals in UK zoos to ensure that the populations of particular species are genetically and physically healthy, and to ensure that there continues to be a sufficient diversity of species within the zoos to satisfy our visitors. The goals of most UK zoos - and the Society is no exception - are to conserve animal species and to educate and inspire visitors about nature and the natural world.

The Conservation and Management Committee of the Zoo Federation is chaired by the Curator of Whipsnade Wild Animal Park, and other Society staff sit on that committee or on the Joint Management of Species Committee (JMSC), or both. Society staff chair four Taxon Advisory Groups and run seven European Endangered Species Breeding Programmes (EEPs).

The Society's animal collections are managed within the external constraints of availability of stock and the requirements of JMSC or EEP programmes. Internal constraints generally centre on availability of funds, the differing sizes and planning requirements of Whipsnade and Regent's Park and the presence or absence of particular staff expertise. Because of the size discrepancy, in particular, there has been a tendency to regard Whipsnade as the 'large animal' zoo and Regent's Park as the 'small animal' zoo. In a general sense, this may be true, but to incorporate it as an item of policy would be unnecessarily self-limiting.

Most large mammal species held by the Society are now part of some sort of managed breeding programme and control over particular animals is devolved to a studbook keeper or co-ordinator, possibly outside the organization. So, for example, the Society's only okapi, 'Kibali', was transferred to Marwell during the year, to the detriment of the Cotton Terraces but the longer-term benefit of the European okapi population. A replacement is shortly due from Basle Zoo in Switzerland. The Society's only male red panda died in 1995 but, as we write, no fewer than three red pandas are currently in quarantine, their arrival having been organized through the EEP for the species. The species will soon be on exhibit at both Whipsnade and Regent's Park.

The group of lowland gorillas at Regent's Park was reorganized. 'Jeremiah' and 'Diana' from Bristol came to London to join 'Zaire' while 'Kumba' and 'Salome' were sent to Chessington. Unfortunately, 'Zaire' and 'Diana' did not get along immediately and a slow process of integration has been necessary. All these

moves were organized through the UK Primate Taxon Advisory Group and were designed to place the Bristol and London gorillas in the best possible breeding situation.

The Society has a number of projects that are run either through, or in conjunction with, English Nature. These include breeding and reintroduction projects for field crickets and wartbiter crickets at London Zoo, Barberry carpet moths at Whipsnade and hazel dormice at London. Early stages of similar projects are also in progress for smooth snakes, mole crickets and the bizarre tadpole shrimp. A more unusual 'reintroduction' project involved two Przewalski's horses sent from Whipsnade to a Site of Special Scientific Interest in Hampshire to join a small herd being developed to control rank grass, etc., which threatens to crowd out rare plants.

Illegal trade in animals continues to harm wild populations of many species. In practical terms, it means that HM Customs occasionally intercept illegal shipments and are then faced with the problem of how to house the unfortunate animals. For a number of reasons, repatriation is not usually an option, so long-term housing in zoos is the usual result. This can be a mixed blessing for the zoo. For example, 316 spur-thighed tortoises were seized and sent to Regent's Park during 1995. By the year end, 277 of them had been re-housed elsewhere, but the logistical and medical problems caused by such shipments are considerable. Horsfield's tortoises, Egyptian tortoises, Werner's, Owen's and Senegal chameleons and red-tailed black cockatoos were also received under similar circumstances.

An animal collection must be planned and organized with clear goals in mind. Some opportunities to add species to a collection do arise unexpectedly, such as the Customs confiscations mentioned previously. However, the majority of animal moves are now carefully planned and species are added to, or deleted from, the collection according to whether they fit either or both of the aims of the Mission Statement - conservation and education. During 1995, Malagasy giant jumping rat, Malayan tapir, woolly-necked stork, Palawan peacock pheasant, nene, Baikal teal, blue-throated conure, Mexican box terrapin, several species of rare Mauritian geckos and skinks, Jamaican boa, black mamba, golden mantella, Australian lungfish, Pitch Lake guppy, various species of endangered Pacific land snails, and rare centipedes from Mauritius all fit into this category. Most of these are endangered species and are part of managed breeding programmes.

The last, and in many ways most important, way that animals are received into a collection is by being born there. It is, after all, the only tangible test of the success of a captive breeding programme! Notable births during 1995 included a sea lion, two Grevy's zebra and two Nile lechwe at Whipsnade, and sand cats, two anoa and a Congo peafowl at Regent's Park, as well as the large number of more common species that breed regularly at both places. The animal collections are still in a state of flux following the events of 1991 and 1992. As they stabilize, we should expect to see an increase in the number of births and a reduction in the species turnover, but this is a long-term process and species replacement will continue to occur.

*Simon Tonge, Senior Curator, London Zoo, and
Nick Lindsay, Curator, Whipsnade Wild Animal Park*

ANIMALS IN THE COLLECTIONS

Key to columns for Mammals, Birds, Reptiles and Amphibians:

column 1	Number of animals in the Collection at 1st January 1995.
column 2	Number of animals received in 1995 by presentation, exchange, purchase, or transfer between the Society's two Collections. The figures in brackets indicate animals which have been so transferred.
column 3	Number of animals born or hatched during 1995.
column 4	Number of animals which died in 1995 within 30 days of birth or hatching. The figures in brackets indicate animals born or hatched during December 1994 which died during January 1995. Stillbirths are not included.
column 5	Number of animals which died from natural causes during 1995, apart from those included in column 4.
column 6	Number of animals disposed of in 1995 by presentation, exchange, deposit, sale or transfer between the Society's two Collections, as well as culled animals and those killed by vermin or vandals. The figures in brackets indicate animals which have been transferred between the two Collections.
column 7	Number of animals in the Collection at 31st December 1995 showing sexes where these are known, e.g. 1/3/1 indicates 1 male, 3 female, 1 sex unknown.

Key

G	Genus new to the Collection	*Species subject to the Agreement with the Marwell Preservation Trust on joint ownership and management	**Free-ranging animals at Whipsnade censused once a year
S	Species new to the Collection		
SS	Sub-species new to the Collection		

IUCN threatened species categories

Birds only. *Birds to Watch 2. The World List of Threatened Birds (1994)*. Bird Life International, Cambridge, UK.
All other species. *1994 IUCN Red List of Threatened Animals*. Compiled by World Conservation Monitoring Centre, Cambridge, UK.

C	Critically endangered	I	Indeterminate	R	Rare
E	Endangered	K	Insufficiently known	V	Vulnerable
Ex	Extinct <i>in situ</i>				

LONDON ZOO

MAMMALS

Monotremata

<i>Tachyglossus aculeatus</i>	Australian Echidna	1	-	-	-	1	-	-
Marsupialia								
<i>Phalanger gymnotis</i>	Grey Ground Cuscus	4	-	-	-	-	2	1/1
<i>Gymnobelideus leadbeateri</i> (E)	Leadbeater's Possum	4	2	1	-	2	-	3/2
<i>Petaurus breviceps</i>	Sugar Glider	6	-	-	-	-	-	3/3
<i>Dasyuroides byrnei</i> (E)	Byrne's Pouched Mouse	14	-	-	-	2	4	4/4
<i>Potorous tridactylus</i>	Long-nosed Potoroo	7	-	3	-	-	-	4/4/2
<i>Macropus rufogriseus frutica</i>	Red-necked (Bennett's) Wallaby	5	-	-	-	1	2	1/1
Insectivora								
<i>Suncus murinus</i>	Grey Musk Shrew	10	-	8	-	1	4	4/4/5
Chiroptera								
<i>Pteropus rodricensis</i> (E)	Rodriguez Fruit Bat	24	-	8	2	3	-	15/11/1
<i>Carollia perspicillata</i>	Seba's Short-tailed Bat	174	-	180	6	9	126	>213

Scandentia

<i>Tupaia minor</i>	Pygmy Tree Shrew	4	1	-	-	1	-	2/2
<i>Tupaia tana</i>	Large Tree Shrew	3	4	-	-	1	-	3/3
Primates								
<i>Eulemur macaco macaco</i> (V)	Black Lemur	2	1	-	-	1	-	2/0
<i>Varecia variegatus variegatus</i> (E)	Black-&-white Ruffed Lemur	1	-	-	-	-	-	0/1
<i>Varecia variegatus rubra</i> (E)	Red Ruffed Lemur	4	-	-	-	-	2	1/1
<i>Cheirogaleus medius</i>	Fat-tailed Dwarf Lemur	4	-	-	-	1	-	1/2
<i>Loris tardigradus</i>	Slender Loris	3	3	-	-	-	-	3/3
<i>Nycticebus coucang</i>	Slow Loris	6	1	-	-	1	-	2/4
<i>Nycticebus pygmaeus</i> (V)	Pygmy Slow Loris	2	-	-	-	-	-	1/1
<i>Galago sp.</i>	Bushbaby	-	1	-	-	1	-	-
<i>Galago senegalensis</i>	Senegal Bushbaby	3	-	-	-	1	-	2/0
<i>Aotus trivirgatus</i>	Douroucouli	2	-	1	-	-	-	1/1/1
<i>Aotus trivirgatus boliviensis</i>	Douroucouli (Bolivian)	2	-	1	-	-	-	2/1
<i>Pithecia pithecia</i>	White-faced Saki Monkey	6	-	1	-	-	-	4/3
<i>Ateles paniscus paniscus</i> (V)	Red-faced Black Spider Monkey	3	-	-	-	-	-	1/2
<i>Callithrix jacchus</i>	Common Marmoset	8	-	5	1	1	-	3/2/6
<i>Callithrix argentata argentata</i>	Silvery Marmoset	7	1	4	-	-	2	3/2/5
<i>Cebuella pygmaea</i>	Pygmy Marmoset	5	2	2	1	1	2	2/2/1
<i>Saguinus oedipus</i> (E)	Cotton-headed Tamarin	4	-	-	-	-	-	3/1
<i>Saguinus imperator subgriseescens</i>	Emperor Tamarin	2	-	3	3	-	-	1/1
<i>Leontopithecus rosalia</i> (E)	Golden Lion Tamarin	9	-	-	-	1	2	3/3
<i>Leontopithecus chrysomelas</i> (E)	Golden-headed Lion Tamarin	2	2	-	-	-	-	3/1
<i>Callimico goeldii</i> (R)	Goeldi's Monkey	5	1	2	1	-	1	1/4/1
<i>Macaca nigra</i> (I)	Sulawesi Crested Macaque	9	1	1	2(1)	1	3	1/4
<i>Cercopithecus diana diana</i> (V)	Diana Monkey	2	-	-	-	-	-	1/1
<i>Cercopithecus hamlyni</i> (V)	Hamlyn's Owl-faced Monkey	4	-	1	-	-	-	3/2
<i>Colobus polykomos polykomos</i>	Western Black-&-white Colobus Monkey	3	-	1	1	-	3	-
<i>Presbytis entellus thersites</i>	Hanuman Langur	8	-	-	-	2	-	2/4
<i>Hylobates lar</i>	Lar Gibbon	4	-	-	-	-	-	2/2
<i>Pan troglodytes</i> (V)	Chimpanzee	14	-	-	-	-	1	3/10
<i>Gorilla gorilla gorilla</i> (V)	Western Lowland Gorilla	3	2	-	-	-	2	1/2
Xenarthra (Edentata)								
<i>Choloepus didactylus</i>	Two-toed Sloth	2	-	-	-	-	-	1/1
Rodentia								
<i>Callosciurus prevostii</i>	Prevost's Squirrel	2	-	6	-	-	2	1/3/2
<i>Tamias townsendi</i>	Townsend's Chipmunk	2	-	-	-	2	-	-
<i>Tamias sibiricus</i>	Siberian Chipmunk	5	-	4	-	2	4	1/2
<i>Phodopus sungorus</i>	Dwarf Hamster	16	-	4	-	2	11	3/4
<i>Phodopus roborovskii</i>	Roborovski's Dwarf Hamster	-	7	-	-	-	-	0/7
<i>Cricetulus barabensis</i>	Chinese Hamster	11	-	-	-	1	9	0/1
<i>Hypogeomys antimena</i> (K) S	Malagasy Giant Jumping Rat	-	4	4	2	3	-	1/2
<i>Gerbillus perpallidus</i>	Pallid Gerbil	28	-	13	-	2	4	5/10/20
Unidentified Gerbil	Gerbil	-	4	-	-	-	-	1/3
<i>Apodemus sylvaticus</i>	Field Mouse	20	-	4	-	2	9	6/7
<i>Micromys minutus</i>	Harvest Mouse	2	4	3	3	4	-	1/1
<i>Lemniscomys barbarus</i>	Striped Grass Mouse	-	10	-	-	-	-	4/6
<i>Acomys russatus</i>	Golden Spiny Mouse (Black form)	18	2	3	-	-	16	3/4
<i>Mus minutoides</i>	Pygmy Mouse	-	3	-	-	-	1	1/1
<i>Rattus rattus</i>	Black Rat	18	-	124	-	-	62	80

		1	2	3	4	5	6	7
<i>Dryomys nitedula</i>	Forest Dormouse	12	-	-	-	3	8	1/0
<i>Muscardinus avellanarius</i>	Common Dormouse	4	30	-	-	3	1	15/15
<i>Hystrix africaeaustralis</i>	Cape Crested Porcupine	2	-	-	-	1	-	1/0
<i>Atherurus africanus</i>	African Brush-tailed Porcupine	8	-	3	1	-	4	2/3/1
<i>Dasyprocta punctata</i>	South American Agouti	13	-	12	8	6	7	2/2
<i>Myoprocta pratti</i>	Green Acouchi	5	-	3	-	1	1	3/3
<i>Chinchilla laniger</i>	Chinchilla	6	-	3	-	-	4	4/1
<i>Hydrochaeris hydrochaeris</i>	Capybara	3	-	-	-	-	3	-
Carnivora								
<i>Canis lupus</i> (V)	Grey Wolf	2	-	-	-	-	-	1/1
<i>Fennecus zerda</i> (K)	Fennec Fox	3	-	-	-	1	-	1/1
<i>Ictonyx striatus</i>	Zorilla	2	-	1	-	1	1	1/0
<i>Amblyonyx cinerea</i> (K)	Oriental Small-clawed Otter	2	-	-	-	-	-	1/1
<i>Genetta tigrina</i>	Blotched Genet	2	-	-	-	-	-	1/1
<i>Arctictis binturong</i>	Binturong	2	-	-	-	-	-	1/1
<i>Helogale parvula</i>	Dwarf Mongoose	9	-	-	-	1	-	6/2
<i>Mungos mungo</i>	Banded Mongoose	3	-	3	-	1	-	2/1/2
<i>Felis caracal</i>	Caracal Lynx	1	-	-	-	-	-	0/1
<i>Felis margarita harrisoni</i> (K)	Sand Cat	2	-	4	-	-	-	4/2
<i>Felis pardalis</i>	Ocelot	2	1	-	-	-	2	1/0
<i>Felis wiedii</i> (K)	Margay	2	-	-	-	-	-	1/1
<i>Panthera leo persica</i> (E)	Asiatic Lion	7	2	-	-	1	4	2/2
<i>Panthera tigris sumatrae</i> (E)	Sumatran Tiger	2	-	-	-	-	-	1/1
<i>Panthera pardus saxicolor</i> (I)	Persian Leopard	2	-	-	-	-	-	1/1
<i>Panthera pardus orientalis</i> (E)	Amur Leopard	-	1	-	-	-	-	1/0
<i>Neofelis nebulosa nebulosa</i> (V)	Clouded Leopard	2	1	-	-	-	1	1/1
Proboscidea								
<i>Elephas maximus</i> (E)	Asian Elephant	3	-	-	-	-	-	0/3
Perissodactyla								
<i>Equus burchelli antiquorum</i> *	Chapman's Zebra	3	-	-	-	-	1	0/2
<i>Tapirus indicus</i> (E)	Malayan Tapir	-	1	-	-	-	-	0/1
<i>Diceros bicornis michaeli</i> (E)	Black Rhinoceros	2	-	-	-	-	-	1/1
Artiodactyla								
<i>Pudu pudu</i> * (K)	Pudu	3	-	1	-	-	1	2/1
<i>Okapia johnstoni</i>	Okapi	1	-	-	-	-	1	-
<i>Giraffa camelopardalis</i> *	Giraffe	7	-	-	-	1	-	3/3
<i>Tragelaphus strepsiceros</i> *	Greater Kudu	6	-	2	-	1	2	1/4
<i>Bubalus depressicornis</i> * (E)	Anoa	6	-	2	-	-	-	4/4
<i>Oryx leucoryx</i> * (E)	Arabian Oryx	5	-	-	-	-	-	1/4
<i>Gazella gazella arabica</i> (V)	Arabian Gazelle	1	-	-	-	-	1	-

Domestic

	1	2	3	4	5	6	7
Rabbit	14	7	-	-	4	5	5/7
Guinea Pig	8	6	1	1	5	-	2/7
House Mouse (domestic)	17	-	62	-	1	76	0/2
Brown Rat (domestic)	18	2	12	-	6	17	9/0
Clawed Jird (domestic gerbil)	6	-	40	-	12	26	8/0
Polecat Ferret	2	-	-	-	-	-	2/0
Pony: Cream	2	-	-	-	-	-	2/0
Dartmoor	1	-	-	-	-	-	0/1
Welsh	2	-	-	-	-	-	1/1
Shetland	-	1	-	-	-	-	1/0
Donkey	-	2	-	-	-	-	1/1
Llama*	2	-	-	-	-	-	2/0
Bactrian Camel*	3	-	-	-	-	-	0/3
Reindeer	3	-	-	-	-	-	0/3
Pig: Berkshire	6	1	-	-	-	7	-
Tamworth x Berkshire	-	-	12	1	-	11	-
Tamworth	1	-	7	-	-	8	-
Gloucester Old Spot	-	1	-	-	-	1	-
Landrace x Glos. Old Spot	-	-	17	4	-	13	-
Large Black	-	13	11	2	1	10	0/1/10
Middle White	-	2	-	-	-	1	0/1
Large Black x Middle White	-	-	12	-	-	12	-
British Saddleback	-	1	14	2	-	13	-
Duroc	-	2	-	-	-	2	-
Cattle: Red Poll	5	-	-	-	-	-	0/5
Sheep: Leicester Longwool	3	-	-	-	-	-	0/3
Norfolk Horned	3	-	-	-	-	-	0/3
Goat: Anglo-Nubian	3	-	-	-	-	-	0/3
Total: Mammals	741	130	609	41	100	518	821

BIRDS**Sphenisciformes***Spheniscus demersus*

Blackfooted (Jackass) Penguin	41	-	17	7	9	-	10/14/18
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Pelecaniformes*Pelecanus onocrotalus*

Eastern White Pelican	6	2	-	-	1	-	3/4
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Ciconiiformes*Nycticorax nycticorax*

Night Heron	3	-	-	-	-	-	0/1/2
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Bubulcus ibis

Cattle Egret	10	-	1	-	1	1	1/2/6
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Egretta garzetta

Little Egret	-	6	-	-	1	-	0/0/5
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Ardea cinerea

Grey Heron	1	-	-	-	1	-	-
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Ciconia abdimii

Abdim's Stork	9	1	3	-	1	-	3/6/3
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Ciconia episcopus episcopus

Woolly-necked Stork	-	2	-	-	-	-	1/1
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Mycteria ibis

Yellow-billed Stork	-	3	-	-	2	-	1/0
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Mycteria leucocephala

Painted Stork	-	1	-	-	1	-	-
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Theristicus melanopsis

Black-faced Ibis	-	5	-	-	2	-	1/2
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Threskiornis aethiopicus

Sacred Ibis	34	-	2	-	2	2	0/0/32
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		1	2	3	4	5	6	7
<i>Eudocimus ruber</i>	Scarlet Ibis	5	-	-	-	-	-	3/2
<i>Plegadis ridgwayi</i>	Puna Ibis	5	-	-	-	-	-	2/3
<i>Platalea alba</i>	African Spoonbill	3	-	-	-	1	2	-
<i>Phoenicopterus chilensis</i>	Chilean Flamingo	41	-	-	-	-	-	17/24
Anseriformes								
<i>Dendrocygna bicolor</i>	Fulvous Whistling Duck	1	-	-	-	-	1	-
<i>Dendrocygna viduata</i>	White-faced Tree Duck	3	-	-	-	1	1	0/0/1
<i>Aix sponsa</i>	Carolina Duck	6	-	-	-	1	2	1/2
<i>Callonetta leucophrys</i>	Ringed Teal	7	-	-	-	-	-	5/2
<i>Anas penelope</i>	Wigeon	8	-	2	-	-	4	3/3
<i>Anas sibilatrix</i>	Chiloe Wigeon	5	-	-	-	1	-	0/0/4
<i>Anas acuta</i>	Northern Pintail	5	-	-	-	-	1	3/1
<i>Anas bahamensis</i>	Bahama Pintail	12	-	-	-	-	-	8(6)
<i>Anas formosa</i> (V)	Baikal Teal	-	4	-	-	-	-	2/2
<i>Anas versicolor puna</i>	Puna Teal	3	-	-	-	2	-	1/0
<i>Anas punctata</i>	Hottentot Teal	1	-	-	-	-	-	1/0
<i>Anas querquedula</i>	Garganey	4	-	-	-	-	-	2/2
<i>Netta rufina</i>	Red-crested Pochard	6	-	-	-	-	6	-
<i>Aythya ferina</i>	European Pochard	3	-	-	-	-	-	3(3)
<i>Aythya fuligula</i>	Tufted Duck	1	-	-	-	-	1	-
<i>Somateria mollissima mollissima</i>	Eider Duck	5	-	-	-	3	-	1/1
<i>Mergus albellus</i>	Smew	2	-	-	-	1	-	0/1
<i>Oxyura jamaicensis</i>	North American Ruddy Duck	1	-	-	-	-	-	1/0
Falconiformes								
<i>Milvus migrans</i>	Black Kite	2	-	-	-	-	-	1/1
<i>Milvus migrans migrans</i>	Black Kite	1	-	-	-	-	-	1/0
<i>Haliaeetus vocifer</i>	African Fish Eagle	2	-	-	-	-	1	0/1
<i>Vultur gryphus</i>	Andean Condor	1	-	-	-	-	1	-
<i>Torgos tracheliotus</i>	Lappet-faced Vulture	2	1	-	-	1	-	1/1
<i>Terathopius ecaudatus</i>	Bateleur Eagle	2	-	-	-	-	-	1/1
<i>Polyboroides typus</i>	Harrier Hawk	3	-	2	1	-	-	2/1/1
<i>Polihiarax semitorquatus</i>	African Pygmy Falcon	1	-	-	-	-	1	-
Galliformes								
<i>Penelope purpurascens</i>	Crested Guan	2	-	-	-	1	-	1/0
<i>Crax fasciolata</i>	Bare-faced Curassow	1	1	-	-	-	-	1/1
<i>Oreortyx picta</i>	Mountain Quail	-	1	-	-	1	-	-
<i>Francolinus pondicerianus</i>	Indian Grey Francolin	1	-	-	-	-	1	-
<i>Tragopan temminckii</i>	Temminck's Tragopan	2	-	-	-	-	2	-
<i>Lophophorus impeyanus</i>	Himalayan Monal (Impeyan Pheasant)	1	-	-	-	-	-	1/0
<i>Gallus gallus</i>	Red Junglefowl	-	12(12)	5	2	9	-	5/1
<i>Lophura diardi</i> (V)	Siamese Crested Fireback	4	-	-	-	-	-	2/2
<i>Lophura edwardsi</i> (C)	Edward's Pheasant	5	-	1	1	-	-	2/3
<i>Chrysolophus pictus</i>	Golden Pheasant	-	1	-	-	1	-	-
<i>Pavo cristatus</i>	Common Peafowl	4	-	-	-	-	-	2/2
<i>Afropavo congensis</i> (V)	Congo Peafowl	2	-	1	-	-	-	2/1
<i>Polyplectron emphanum</i> (E)	Palawan Peacock Pheasant	-	4	-	-	-	-	2/2
<i>Acryllium vulturinum</i>	Vulturine Guineafowl	2	-	-	-	-	-	1/1

		1	2	3	4	5	6	7
Gruliformes								
<i>Grus japonensis</i> (V)	Red-crowned Crane	3	-	2	-	1	1	1/2
<i>Anthropoides virgo</i>	Demoiselle Crane	2	-	-	-	1	-	1/0
<i>Gallinula nesiotis comeri</i> (V)	Gough Island Moorhen	3	-	7	4	-	-	1/1/4
<i>Cariama cristata</i>	Crested Sericima	-	2	-	-	-	-	0/0/2
Charadriiformes								
<i>Burhinus oediacnemus</i>	Stone Curlew	3	-	2	-	1	-	1/3
<i>Vanellus miles miles</i>	Masked Lapwing	-	3	-	-	1	-	2/0
<i>Larus cirrocephalus poiocephalus</i>	Grey-headed Gull	19	-	-	-	6	-	0/0/13
<i>Larosterna inca</i>	Inca Tern	4	-	1	1	1	-	1/2
<i>Uria aalge</i>	Guillemot	2	-	-	-	2	-	-
Columbiformes								
<i>Columba guinea</i>	Speckled Pigeon	20	-	-	-	3	-	0/0/17
<i>Ducula aenea aenea</i>	Green Imperial Pigeon	6	-	5	1	1	3	1/4/1
<i>Ducula aenea paulina</i>	Chestnut-naped Imperial Pigeon	3	1	1	-	-	-	4/1
<i>Ducula rufigaster</i>	Purple-tailed Imperial Pigeon	-	2	-	-	1	-	1/0
<i>Ducula concinna</i>	Blue-tailed Imperial Pigeon	-	1	-	-	-	-	0/1
<i>Ducula pinon</i>	Pinon Imperial Pigeon	-	1	-	-	-	-	1/0
<i>Ducula zoeae</i>	Zoe Imperial Pigeon	-	2	-	-	-	-	1/1
<i>Treron vernans</i>	Pink-necked Fruit Pigeon	-	2	-	-	1	-	1/0
<i>Gymnophaps albertisii</i>	New Guinea Mountain Pigeon	-	2	-	-	-	2	-
<i>Ptilinopus cinctus albocinctus</i>	Black-backed Fruit Dove	4	-	2	-	1	-	4/1
<i>Ptilinopus jambu</i>	Jambu Fruit Dove	4	2	-	-	1	1	2/2
<i>Ptilinopus magnificus</i>	Magnificent Fruit Dove	3	-	-	-	-	-	2/1
<i>Ptilinopus melanospila</i>	Black-naped Fruit Dove	4	1	-	-	2	-	2/1
<i>Ptilinopus superbus</i>	Superb Fruit Dove	2	2	-	-	-	-	2/2
<i>Zenaida graysoni</i> (Ex)	Socorro Dove	-	4	-	-	-	2	1/1
Psittaciformes								
<i>Charmosyna josefinae</i>	Josephine's Lorikeet	2	-	-	-	1	-	1/0
<i>Charmosyna placensis placensis</i>	Red-flanked Lorikeet	4	1	2	1	1	-	3/2
<i>Charmosyna pulchella rothschildi</i>	Fairy Lorikeet	6	-	5	1	3	2	1/2/2
<i>Charmosyna rubronotata</i>	Red-spotted Lorikeet	2	-	-	-	1	1	-
<i>Eos cyanogenia</i> (V)	Black-winged Lory	2	1	-	-	1	-	1/1
<i>Eos reticulata</i>	Blue-streaked Lory	4	-	-	-	1	1	2/0
<i>Calyptorhynchus magnificus</i>	Red-tailed Black Cockatoo	-	2	-	-	-	-	1/1
<i>Cacatua alba</i> (V)	White-crested Cockatoo	3	-	-	-	-	1	1/1
<i>Cacatua goffini</i>	Goffin's Cockatoo	5	-	-	-	-	-	3/2
<i>Cacatua haematuropygia</i> (C)	Red-vented Cockatoo	2	-	-	-	-	-	1/1
<i>Cacatua moluccensis</i> (V)	Salmon-crested Cockatoo	3	3	-	-	-	-	3/3
<i>Nestor notabilis</i>	Kea	2	-	-	-	-	-	1/1
<i>Polytelis alexandrae</i> (V)	Princess of Wales' Parrakeet	1	-	-	-	-	-	0/1
<i>Poicephalus robustus</i>	Cape Parrot	2	-	-	-	-	-	1/1
<i>Agapornis nigrigenis</i> (E)	Black-cheeked Lovebird	4	-	3	-	-	-	0/2/5
<i>Amazona brasiliensis</i> (E)	Red-tailed Amazon	-	1	-	-	-	1	-
<i>Anodorhynchus hyacinthinus</i> (V)	Hyacinth Macaw	6	1	-	-	1	5	1/0
<i>Ara ararauna</i>	Blue-&-gold Macaw	5	-	-	-	-	-	3/2
<i>Ara chloroptera</i>	Green-winged Macaw	-	1	-	-	-	-	1/0
<i>Ara militaris</i> (V)	Military Macaw	2	-	-	-	-	2	-
<i>Ara glaucogularis</i> (E)	Blue-throated Macaw	-	1	-	-	-	1	-
<i>Aratinga solstitialis</i>	Sun Conure	3	-	-	-	-	-	1/0/2
<i>Enicognathus ferrugineus</i>	Austral Conure	2	-	-	-	1	1	-
<i>Enicognathus leptorhynchus</i>	Slender-billed Conure	6	1	-	-	-	6	0/0/1

		1	2	3	4	5	6	7
<i>Pyrrhura cruentata</i> (V)	Blue-throated Conure	-	4	-	-	-	-	2/2
<i>Loriculus galgulus</i>	Blue-crowned Hanging Parrot	2	1	-	-	1	-	1/1
<i>Myiopsitta monachus</i>	Quaker (Monk) Parrakeet	20	-	27	-	9	1	0/1/36
Cuculiformes								
<i>Musophaga violacea</i>	Violet Plantain-eater	1	1	-	-	-	-	0/2
<i>Tauraco persa livingstonii</i>	Livingstone's Turaco	6	-	5	2	1	4	1/3
<i>Tauraco erythrolophus</i>	Red-crested Turaco	2	-	-	-	-	-	1/1
<i>Tauraco hartlaubii</i>	Hartlaub's Turaco	2	1	-	-	-	3	-
<i>Tauraco leucotis</i>	White-checked Turaco	8	-	2	-	2	4	1/2/1
Strigiformes								
<i>Tyto alba</i>	Barn Owl	2	-	-	-	-	-	2/0
<i>Otus bakkamoena</i>	Collared Scops Owl	4	-	3	1	1	1	1/3
<i>Otus leucotis</i>	White-faced Scops Owl	13	6	8	-	4	9	6/8
<i>Bubo bubo</i>	Eurasian Eagle Owl	1	-	-	-	-	-	1/0
<i>Bubo vosseleri</i> (V)	Nduk Eagle Owl	1	-	-	-	-	-	1/0
<i>Pulsatrix perspicillata</i>	Spectacled Owl	2	-	3	-	-	-	3/2
<i>Ninox novaeseelandiae</i>	Boobook Owl	2	-	1	-	-	1	1/1
<i>Speotyto cunicularia</i>	Burrowing Owl	2	-	-	-	-	-	1/1
<i>Strix hylophila</i>	Rusty-barred Owl	2	1	-	-	-	-	3/0
<i>Strix uralensis</i>	Ural Owl	4	-	1	1	-	-	2/2
<i>Strix nebulosa</i>	Great Grey Owl	2	-	-	-	-	-	1/1
Caprimulgiformes								
<i>Podargus strigoides</i>	Tawny Frogmouth	-	2	-	-	-	-	2/0
Trogoniformes								
<i>Pharomachrus auriceps</i>	Golden-headed Quetzal	1	-	-	-	-	-	0/1
Coraciiformes								
<i>Dacelo novaeguineae</i>	Kookaburra	3	-	-	-	-	-	1/1/1
<i>Coracias caudata</i>	Lilac-breasted Roller	5	2	3	1	2	1	1/2/3
<i>Tockus erythrorhynchus</i>	Red-billed Hornbill	2	1	-	-	-	-	1/2
<i>Penelopides panini</i> (C)	Tarctic Hornbill	2	-	-	-	1	-	1/0
<i>Anthracoeros albirostris convexus</i>	Southern Pied Hornbill	1	1	-	-	1	-	0/1
<i>Anthracoeros albirostris albirostris</i>	Northern Pied Hornbill	2	-	-	-	-	-	1/1
<i>Bycanistes subcylindricus</i>	Black-&-white Casqued Hornbill	2	1	-	-	-	-	1/2
<i>Buceros bicornis</i>	Great Indian Hornbill	1	-	-	-	-	-	0/1
Piciformes								
<i>Psilopogon pyrolophus</i>	Fire-tufted Barbet	1	-	-	-	-	-	1/0
<i>Lybius dubius</i>	Bearded Barbet	2	-	-	-	1	-	1/0
<i>Pteroglossus aracari</i>	Black-necked Aracari	5	1	-	-	2	-	3/1
<i>Pteroglossus castanotis</i>	Chestnut-eared Aracari	1	-	-	-	-	-	0/1
<i>Baillonius bailloni</i>	Saffron Toucanet	2	-	-	-	1	-	1/0
<i>Dinopium javanense</i> S	Golden-backed Woodpecker	1	-	-	-	1	-	-
<i>Melanerpes candidus</i>	White Woodpecker	2	2	-	-	1	1	1/1
Passeriformes								
<i>Procnias nudicollis</i>	Naked-throated Bellbird	1	-	-	-	-	-	1/0
<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	2	-	-	-	-	-	0/2
<i>Irena puella</i>	Fairy Bluebird	2	-	-	-	-	-	1/1

		1	2	3	4	5	6	7
<i>Garrulax chinensis</i>	Black-throated Laughing Thrush	4	1	5	4	-	2	3/1
<i>Garrulax sannio</i>	White-browed Laughing Thrush	2	-	-	-	-	-	1/1
<i>Leiothrix argentauris</i>	Silver-eared Mesia	2	-	-	-	1	1	-
<i>Paroaria coronata</i>	Red-crested Cardinal	2	-	-	-	-	-	1/1
<i>Ramphocelus carbo</i>	Silver-beaked Tanager	2	-	-	-	-	-	1/1
<i>Tangara icterocephala</i>	Silver-throated Tanager	2	-	3	1	2	-	1/0/1
<i>Chloebia gouldiae</i> (E)	Gouldian Finch	-	6	-	-	4	-	1/1
<i>Estrilda troglodytes</i>	Black-rumped Waxbill	-	12	-	-	-	-	0/0/12
<i>Vidua sp.</i>	Whydah	-	1	-	-	-	-	1/0
<i>Vidua macroura</i>	Pin-tailed Whydah	-	3	-	-	-	-	3/0
<i>Quelea quelea</i>	Red-beaked Weaver (Quelea)	2	6	-	-	-	-	1/4/3
<i>Foudia flavicans</i> (V)	Rodriguez Fody	5	-	-	-	3	-	1/1
<i>Lamprolaima iris</i>	Emerald Glossy Starling	2	-	2	1	1	-	1/1
<i>Spreo superbus</i>	Superb Glossy Starling	3	-	-	-	-	3	-
<i>Sturnus roseus</i>	Rose-coloured Starling	2	-	-	-	-	-	1/1
<i>Sturnus contra</i>	Asian Pied Starling	3	-	2	1	2	-	1/1
<i>Leucopsar rothschildi</i> (C)	Rothschild's Mynah	3	4	1	1	-	2	3/2
<i>Ampeliceps coronatus</i>	Golden-crested Mynah	3	1	-	-	1	-	2/1
<i>Gracula religiosa intermedia</i>	Nepal Hill Mynah	2	-	-	-	1	1	-
Domestic								
	Duck	3	-	-	-	-	-	0/3
	Chicken	5	7	-	-	2	-	2/8
	Budgerigar	8	-	2	-	1	-	5/4

Total: Birds 586 146(12) 132 32 123 102(9) 607

REPTILES

Testudines

<i>Stemotherus odoratus</i>	Stinkpot	8	-	2	-	-	-	2/2/6
<i>Kinostemon subrubrum</i>	Eastern Mud Terrapin	1	-	-	-	-	-	0/1
<i>Kinostemon scorpioides</i>	Scorpion Mud Terrapin	2	-	-	-	-	-	1/1
<i>Trachemys dorbignyi</i>	South American Ornate Terrapin	1	-	-	-	1	-	-
<i>Trachemys scripta elegans</i>	Red-eared Terrapin	6	27	-	-	-	-	4/29
<i>Cuora amboinensis</i>	Malayan Box Turtle	-	6	-	-	-	-	3/1/2
<i>Terrapene coahuila</i> (V)	Mexican Box Terrapin	-	6	-	-	-	-	0/0/6
<i>Terrapene carolina triunguis</i>	Three-toed Box Terrapin	1	-	-	-	-	-	1/0
<i>Homopus areolatus</i>	Parrot-beaked Cape Tortoise	3	-	-	-	-	-	1/1/1
<i>Testudo graeca</i>	Spur-thighed Tortoise	9	346	1	-	16	277	9/18/36
<i>Testudo hermanni</i> (V)	Hermann's Tortoise	1	5	-	-	-	-	3/3
<i>Testudo horsfieldi</i>	Horsfield's Tortoise	36	-	-	-	1	14	10/8/3
<i>Testudo kleinmanni</i> (V)	Egyptian Tortoise	7	8	-	-	-	-	5/5/4
<i>Malacochersus tornieri</i> (K)	Pancake Tortoise	2	-	-	-	-	-	1/1
<i>Geochelone denticulata</i>	Yellow-footed Tortoise	1	-	-	-	-	1	-
<i>Geochelone pardalis</i>	Leopard Tortoise	1	-	-	-	-	-	0/0/1
<i>Eretmochelys imbricata</i> (E)	Hawksbill Turtle	3	-	-	-	-	-	2/1
<i>Chelus fimbriatus</i>	Matamata	5	-	-	-	2	-	0/0/3
<i>Chelodina longicollis</i>	Long-necked Terrapin	5	-	3	-	2	-	2/3/1

		1	2	3	4	5	6	7
<i>Aspideretes hurum</i>	Peacock Soft-shelled Turtle	2	-	-	-	-	-	1/1
<i>Aspideretes gangeticus</i>	Ganges Soft-shelled Turtle	-	1	-	-	-	-	0/0/1
Crocodylia								
<i>Crocodylus niloticus</i>	Nile Crocodile	2	-	-	-	-	-	1/1
<i>Alligator sinensis</i> (E)	Chinese Alligator	5	-	-	-	-	-	1/2/2
Sauria								
<i>Nactus serpensinsula serpensinsula</i> (R)	Serpent Island Gecko	2	8	-	-	1	-	3/1/5
<i>Nactus serpensinsula durrelli</i> SS	Round Island Gecko	-	5	1	-	-	-	2/2/2
<i>Teratoscincus scincus</i>	Frog-eyed Sand Gecko	1	-	-	-	-	1	-
<i>Stenodactylus sthenodactylus</i>	Elegant Gecko	4	-	-	-	-	-	2/2
<i>Chondrodactylus angulifer</i>	Namib Sand Gecko	1	-	-	-	-	1	-
<i>Paroedura pictus</i>	Malagasy Night Gecko	2	-	-	-	-	-	1/1
<i>Gekko gekko</i>	Tokay Gecko	1	1	-	-	1	-	0/0/1
<i>Hemiteconyx caudicinctus</i>	African Fat-tailed Gecko	-	2	1	-	1	2	-
<i>Homopholis wahlbergi</i>	Wahlberg's Velvet Gecko	-	2	-	-	1	-	1/0
<i>Phelsuma cepediana</i>	Mauritius Day Gecko	-	13	-	-	1	-	0/0/12
<i>Phelsuma ornata ornata</i>	Ornate Day Gecko	-	21	-	-	1	-	0/0/20
<i>Phelsuma guimbeaui rosagularis</i>	Maccabé Day Gecko	-	11	-	-	-	-	3/6/2
<i>Phelsuma standingi</i> (I)	Standing's Day Gecko	8	-	3	2	-	-	3/5/1
<i>Eublepharis macularius</i>	Leopard Ground Gecko	6	9	-	-	-	12	0/3
<i>Anolis equestris</i>	Knight Anole	1	-	-	-	1	-	-
<i>Anolis carolinensis</i>	Green Anole	6	-	-	-	-	-	1/2/3
<i>Basiliscus plumifrons</i>	Plumed Basilisk	3	15	-	-	1	13	2/2
<i>Cyclura cornuta cornuta</i> (I)	Rhinoceros Iguana	4	-	-	-	1	-	3/0
<i>Oplurus cuvieri</i>	Madagascar Spiny Lizard	-	5	-	-	-	-	1/2/2
<i>Pogona vitticeps</i>	Inland Bearded Dragon	3	-	-	-	1	-	1/1
<i>Physignathus cocincinus</i>	Chinese Water Dragon	-	2	-	-	-	1	0/1
<i>Uromastyx hardwicki</i>	General Hardwicke's Dabb Lizard	4	-	-	-	2	-	1/1
<i>Uromastyx aegyptius</i>	Egyptian Dabb Lizard	-	4(1)	-	-	2	-	0/0/2
<i>Chamaeleo calyptratus</i>	Veiled Chameleon	2	2	-	-	1	-	1/2
<i>Chamaeleo chamaeleo</i>	Common Chameleon	1	-	-	-	-	-	1/0
<i>Chamaelao werneri</i>	Uzungwe Three-horned Chameleon	-	25	17	8	29	-	4/1
<i>Egernia striolata</i>	Australian Tree Skink	1	-	-	-	-	-	0/1
<i>Corucia zebrata</i>	Prehensile-tailed Skink	6	1	-	-	-	-	2/5
<i>Tiliqua rugosa</i>	Shingleback	3	-	-	-	-	-	1/2
<i>Tiliqua scincoides scincoides</i>	Eastern Blue-tongued Skink	3	-	-	-	-	-	1/2
<i>Tiliqua scincoides intermedia</i>	Northern Blue-tongued Skink	1	1	-	-	-	-	1/1
<i>Eumeces schneideri</i>	Schneider's Skink	3	-	-	-	-	3	-
<i>Mabuya perrotetti</i>	Red-sided Skink	-	16	-	-	2	2	0/0/12
<i>Chalcides ocellatus</i>	Eyed Skink	2	-	5	-	2	-	1/1/3
<i>Gongylomorphus bojerii</i>	Bojer's Skink	-	10	-	-	-	-	0/0/10
<i>Gongylomorphus fontenayi</i> (R)	Macabe Forest Skink	-	4	-	-	2	-	0/0/2
<i>Gerrhosaurus major</i>	Greater Plated Lizard	4	3	-	-	2	-	2/1/2
<i>Lacerta lepida lepida</i>	Jewelled Lizard	-	2	-	-	-	-	1/1
<i>Trogonophis wiegmanni</i>	Wiegmann's Burrowing Lizard	1	-	-	-	-	-	0/0/1
<i>Varanus exanthematicus exanthematicus</i>	Bosc's Monitor	7	2	-	-	-	-	0/0/9
<i>Heloderma suspectum suspectum</i> (V)	Reticulated Gila Monster	8	-	-	-	-	4	2/2
<i>Ophisaurus apodus</i>	Scheltopusik (Glass Lizard)	1	2	-	-	-	-	0/0/3
<i>Anguis fragilis</i>	Slow-worm	2	-	-	-	2	-	-

		1	2	3	4	5	6	7
<i>Cordylus giganteus</i>	Sungazer	5	-	-	-	-	-	2/3
<i>Cordylus polyzonus</i>	Karoo Girdled Lizard	5	-	-	-	-	-	1/1/3
Serpentes								
<i>Liasis albertisii</i> S	D'Albert's Python	-	2	-	-	-	-	2/0
<i>Liasis boa</i>	Bismark Ringed Python	1	-	-	-	-	1	-
<i>Liasis fuscus</i>	Brown Water Python	-	5	-	-	-	-	2/3
<i>Python molurus bivittatus</i> (V)	Burmese Python	2	-	-	-	-	-	1/1
<i>Python regius</i>	Royal Python	3	1	-	-	-	-	2/2
<i>Calabaria reinhardtii</i>	African Burrowing Python	5	-	-	-	3	-	1/1
<i>Corallus enydris enydris</i>	Amazon Tree Boa	-	3	-	-	-	-	1/2
<i>Epicrates subflavus</i> (V)	Jamaican Boa	-	6	-	-	-	2	0/0/4
<i>Boa constrictor</i>	Boa Constrictor	3	-	-	-	-	-	1/0/2
<i>Candoia aspera</i>	Fierce Papuan Boa	1	-	-	-	1	-	-
<i>Candoia carinata paulsoni</i>	Solomon Island Boa	1	-	-	-	-	1	-
<i>Eryx conicus</i>	Rough-scaled Sand Boa	2	-	-	-	-	-	0/2
<i>Eryx johnii</i>	Smooth Sand Boa	2	-	-	-	-	-	2/0
<i>Natrix natrix</i>	Grass Snake	1	-	-	-	-	-	0/1
<i>Drymarchon corais couperi</i> (V)	Eastern Indigo Snake	1	-	-	-	1	-	-
<i>Elaphe obsoleta spiloides</i>	Grey Ratsnake	-	1	-	-	-	-	0/0/1
<i>Elaphe radiata</i>	Radiated Rat Snake	1	-	-	-	-	-	0/0/1
<i>Pituophis melanoleucus melanoleucus</i>	Northern Pine Snake	3	-	2	-	-	1	1/1/2
<i>Hydrodynastes gigas</i>	Boipevassu Snake	2	-	9	-	1	-	0/1/9
<i>Coronella austriaca</i>	Smooth Snake	1	2	-	-	1	-	2/0
<i>Scolecophis atrocinctus</i>	Snail-eating Snake	1	-	-	-	1	-	-
<i>Lampropeltis getulus floridana</i>	Florida King Snake	1	1	-	-	-	1	0/1
<i>Lampropeltis getulus californiae</i>	Californian King Snake	1	2	-	-	-	3	-
<i>Lampropeltis getulus splendida</i>	Desert King Snake	-	1	-	-	-	-	0/0/1
<i>Lampropeltis triangulum sinaloae</i>	Sinaloan Milk Snake	11	-	-	-	2	4	2/1/2
<i>Lampropeltis triangulum hondurensis</i>	Honduran Milk Snake	2	-	-	-	-	-	0/2
<i>Lampropeltis aurora</i>	Aurora House Snake	1	-	-	-	-	-	0/0/1
<i>Lampropeltis inornatus</i>	Olive House Snake	3	-	-	-	-	-	0/0/3
<i>Lampropeltis fuliginosus</i>	African House Snake	2	15	-	-	-	8	0/0/9
<i>Pseudaspis cana</i>	Mole Snake	1	-	-	-	-	1	-
<i>Boiga irregularis</i>	Brown Cat Snake	-	3	-	-	2	-	0/1
<i>Psammophis subtaeniatus</i>	Peter's Long-lined Snake	1	-	-	-	-	-	1/0
<i>Dispholidus typus</i>	Boomslang	-	5	-	-	2	-	0/0/3
<i>Oxyuranus scutellatus</i>	Taipan	4	-	-	-	2	-	2/0
<i>Notechis scutatus</i>	Tiger Snake	2	-	-	-	1	-	0/1
<i>Naja pallida</i>	Red Spitting Cobra	4	7	-	-	-	-	2/2/7
<i>Naja kaouthia</i>	Monocellate Cobra	2	-	-	-	-	-	1/1
<i>Naja oxiana</i> (K)	Central Asian Cobra	-	4	-	-	1	-	2/1
<i>Dendroaspis angusticeps</i>	Common Green Mamba	2	-	-	-	1	-	1/0
<i>Dendroaspis polylepis</i>	Black Mamba	-	5	-	-	-	-	3/1/1
<i>Vipera berus</i>	Adder	1	-	-	-	1	-	-
<i>Vipera lebetina obtusa</i>	Levantine Viper	-	1	-	-	-	-	0/1
<i>Vipera palaestinae</i>	Palestine Viper	-	1	-	-	-	-	0/0/1
<i>Vipera ammodytes ammodytes</i>	Western Long-nosed Viper	2	-	-	-	2	-	-
<i>Vipera ammodytes meridionalis</i>	Eastern Long-nosed Viper	-	6	-	-	-	-	6/0
<i>Vipera raddei</i> (I)	Armenian Viper	2	-	-	-	-	-	0/2
<i>Bitis arietans</i>	Puff Adder	2	-	-	-	1	-	1/0
<i>Bitis gabonica rhinoceros</i>	Gaboon Viper	1	5	-	-	1	-	1/4

		1	2	3	4	5	6	7
<i>Echis carinatus sochureki</i>	Saw-scaled Viper	25	-	-	-	4	-	1/1/19
<i>Echis carinatus ocellatus</i>	West African Saw-scaled Viper	2	-	-	-	1	-	1/0
<i>Echis carinatus leakeyi</i>	East African Saw-scaled Viper	3	-	-	-	1	-	1/1
<i>Agkistrodon contortrix contortrix</i>	Southern Copperhead	3	-	-	-	-	-	1/2
<i>Agkistrodon contortrix mokeson</i>	Northern Copperhead	-	4	-	-	-	-	0/0/4
<i>Agkistrodon piscivorus</i>	Cottonmouth Moccasin	1	-	-	-	1	-	-
<i>Gloydius intermedius saxatilis</i>	Rock Mamushi	-	7	-	-	-	-	0/0/7
<i>Gloydius halys caraganus</i>	Karaganda Mamushi	-	3	-	-	-	-	1/2
<i>Calloselasma rhodostoma</i>	Malayan Pit Viper	22	-	-	-	1	-	1/4/16
<i>Trimeresurus purpureomaculatus</i>	Mangrove Pit Viper	1	-	-	-	-	-	1/0
<i>Bothrops asper</i>	Terciopelo	1	-	-	-	-	-	0/1
<i>Bothrops atrox</i>	Fer-de-Lance	1	-	-	-	-	-	0/1
<i>Bothrops moojeni</i>	Moojen's Fer-de-Lance	1	-	-	-	-	-	1/0
<i>Crotalus durissus culminatus</i>	North Western Neotropical Rattlesnake	1	-	-	-	-	-	1/0
<i>Crotalus scutulatus scutulatus</i>	Mojave Rattlesnake	2	-	-	-	-	-	1/1
<i>Crotalus viridis helleri</i>	South Pacific Rattlesnake	2	-	-	-	-	-	2/0
<i>Crotalus viridis oreganus</i>	Northern Pacific Rattlesnake	-	2	-	-	-	-	1/1
<i>Crotalus mitchelli</i>	Speckled Rattlesnake	1	-	-	-	1	-	-
<i>Crotalus cerastes</i>	Sidewinder	1	-	-	-	-	-	1/0
Total: Reptiles		344	657(1)	44	10	109	354	572

AMPHIBIANS

Anura

<i>Agalychnis callidryas</i>	Red-eyed Tree Frog	3	-	-	-	-	3	-
<i>Colostethus trinitatus</i>	Stream Frog	2	35	10	-	15	8	5/7/12
<i>Dendrobates auratus</i>	Green & Black Poison Frog	3	16	-	-	1	-	1/1/16
<i>Dendrobates tinctorius</i>	Blue & Yellow Poison Frog	8	-	13	-	13	-	3/4/1
<i>Dyscophus antongilii</i>	Tomato Frog	3	1	-	-	1	-	1/2
<i>Hymenochirus sp.</i>	Dwarf Surinam Toad	7	-	-	-	7	-	-
<i>Pipa pipa</i>	Surinam Toad	2	-	-	-	-	-	1/1
<i>Mantella aurantiaca</i>	Madagascar Golden Frog	-	6	-	-	3	-	1/2
<i>Rana catesbeiana</i>	American Bullfrog	3	-	-	-	1	-	0/0/2
<i>Bufo regularis</i>	Panther Toad	-	2	-	-	-	-	1/1
<i>Xenopus tropicalis</i>	Clawed Frog	3	-	-	-	1	-	0/0/2
Total: Amphibians		34	60	23	-	42	11	64

Key to columns for Fishes and Invertebrates:

column 1	Arrivals
column 2	Births/Hatchings
column 3	Deaths
column 4	Departures
column 5	Number at end of year of Young/Eggs
column 6	Number at end of year of Adult Males/Adult Females/Adults of unknown gender or without gender, or number of colonies
column 7	Count Unit: I=Adult numbers represent exact number of individuals. Young and Eggs may be estimated. A=All numbers are approximate. C=Numbers represent exact number of colonies
column 8	Population Status: M=Maintaining. B=Breeding. D=Declining. N=Newly acquired species. nr=Not recorded. na=Not applicable.

IUCN threatened species categories

C=Critically endangered. E=Endangered. Ex=Extinct *in situ*. I=Indeterminate. K=Insufficiently known. R=Rare. V=Vulnerable.

FISHES

	1	2	3	4	5	6	7/8
CHONDRICHTHYES							
Carcharhiniformes							
<i>Carcharhinus melanopterus</i>	Black-tipped Reef Shark	-	-	-	-	0/0	3/0/0 I/M
<i>Triakis semifasciata</i>	Leopard Shark	-	-	-	-	1/0	0/1/0 I/M
Lamniformes							
<i>Scyliorhinus canicula</i>	Spotted Dogfish	-	1	-	-	1/0	4/3/0 I/B
Rajiformes							
<i>Potamotrygon sp.</i>	Freshwater Stingray	-	-	-	-	0/0	2/1/0 I/M
<i>Raja clavata</i>	Thornback Ray	-	-	4	-	1/0	0/0/0 I/M
<i>Raja microocellata</i>	Small-eyed Ray	-	-	1	-	0/0	1/1/0 I/M
OSTEICHTHYES							
Acipenseriformes							
<i>Acipenser ruthenus</i>	Sterlet	-	-	-	-	2/0	0/0/6 I/M
<i>Scaphirhynchus platyrhynchus</i>	Shovelnose Sturgeon	-	-	-	-	0/0	0/0/2 I/M
<i>Polyodon spathula</i> (V)	Paddlefish	6	-	5	-	5/0	0/0/7 A/M
Amiiformes							
<i>Amia calva</i>	Bowfin	-	-	-	-	0/0	0/0/4 I/M
Anguilliformes							
<i>Anguilla anguilla</i>	Common Eel	-	-	1	-	0/0	0/0/1 I/M
<i>Conger conger</i>	Conger Eel	-	-	-	-	6/0	0/0/0 I/M
<i>Echidna nebulosa</i>	Snowflake Moray Eel	1	-	1	-	0/0	0/0/0 I/N
<i>Echidna zebra</i>	Zebra Moray Eel	-	-	-	-	0/0	0/0/2 I/M
<i>Gymnothorax favagineus</i>	Leopard Moray Eel	2	-	-	-	0/0	0/0/2 I/M
<i>Gymnothorax vicinus</i>	Purplemouth Moray Eel	-	-	1	-	0/0	0/0/0 I/D
Atheriniformes							
<i>Bedotia geayi</i> (K)	Madagascar Rainbow	-	-	2	-	0/0	0/0/3 I/D
<i>Glossolepis incisus</i> (R)	Metallic Rainbow	10	-	9	-	0/0	0/0/3 I/M
<i>Melanotaenia maccullochi</i>	McCulloch's Rainbowfish	9	-	4	-	0/0	0/0/5 I/M
<i>Melanotaenia boesemani</i> (V)	Boeseman's Rainbowfish	-	-	-	-	0/0	0/0/7 I/M
<i>Melanotaenia splendida</i>	Crimson-spotted Rainbow	-	-	-	-	0/0	0/0/1 I/M
<i>Melanotaenia trifasciatus</i>	Rainbowfish	-	-	1	-	0/0	0/0/3 I/M

		1	2	3	4	5	6	7/8
Beryciformes								
<i>Myripristis jacobus</i>	Blackbar Soldierfish	10	-	2	-	0/0	0/0/9	A/D
Ceratodiformes								
<i>Neoceratodus forsteri</i>	Australian Lungfish	-	-	-	1	0/0	0/0/0	I/D
Characiformes								
<i>Leporinus fasciatus</i>	Black-banded Leporinus	-	-	-	-	0/0	0/0/1	I/M
<i>Acestorhynchus falcatus</i>	Spotted Cachorro	2	-	-	-	0/0	0/0/2	I/M
<i>Astyanax mexicanus</i>	Blind Cavefish	-	-	-	-	0/0	0/0/6	I/M
<i>Hemigrammus bleheri</i>	Rummy-nose Tetra	-	-	-	-	0/0	0/0/12	I/M
<i>Hemigrammus ocellifer</i>	Beacon Tetra	20	-	20	-	0/0	0/0/0	A/D
<i>Hyphessobrycon herbertaxelrodi</i>	Black Neon Tetra	-	-	5	-	0/0	0/0/33	A/D
<i>Hyphessobrycon pulchripinnis</i>	Lemon Tetra	-	-	1	-	0/0	0/0/19	A/M
<i>Hyphessobrycon serpae</i>	Serpae Tetra	-	-	4	-	0/0	0/0/26	A/M
<i>Metynnis argenteus</i>	Silver Dollar	-	-	6	-	0/0	0/0/3	A/D
<i>Myleus rubripinnis</i>	Red Hook Pacu	-	-	8	-	0/0	0/0/0	I/D
<i>Paracheirodon axelrodi</i>	Cardinal Tetra	-	-	2	-	0/0	0/0/8	I/M
<i>Serrasalmus nattereri</i>	Red-bellied Piranha	-	-	28	-	0/0	0/0/106	A/D
<i>Triporthes angulatus</i>	Narrow Hatchetfish	-	-	-	-	0/0	0/0/8	I/M
<i>Hasemania nana</i>	Silver-tipped Tetra	20	-	2	-	0/0	0/0/18	A/M
Cypriniformes								
<i>Myxocyprinus asiaticus</i>	Chinese Sailfin Sucker	6	-	3	-	7/0	0/0/0	I/M
<i>Acanthopthalmus myersi</i>	Slimy Coolie Loach	-	-	-	-	0/0	0/0/1	I/M
<i>Botia hymenophysa</i>	Tiger Botia	-	-	-	-	0/0	0/0/5	I/M
<i>Botia lohachata</i>	Pakistani Loach	-	-	-	-	0/0	0/0/4	I/M
<i>Botia macracantha</i>	Clown Loach	-	-	-	-	0/0	0/0/9	I/M
<i>Botia modesta</i>	Red-finned Botia	-	-	-	-	0/0	0/0/5	I/M
<i>Botia sidhimunki</i>	Chain Loach	-	-	-	-	0/0	0/0/10	A/M
<i>Botia striata</i>	Striped Loach	-	-	-	-	0/0	0/0/4	I/M
<i>Lepidocephalichthys thermalis</i>	Spotted Loach	-	-	1	-	0/0	0/0/12	A/M
<i>Leptobotia mantschurica</i>	Manchurian Loach	-	-	-	-	0/0	0/0/5	I/M
<i>Misgurnus fossilis</i>	Weatherloach	1	-	1	-	0/0	0/0/0	I/D
<i>Acheilognathus micropterus</i>	Asian Bitterling	-	-	-	-	0/0	0/0/8	I/M
<i>Balantiocheilus melanopterus</i> (I)	Silver Shark	1	-	-	-	0/0	0/0/1	I/M
<i>Barbodes schwanenfeldi</i>	Tinsel Barb	-	-	-	-	0/0	0/0/3	I/M
<i>Barbus barbus</i>	Barbel	-	-	1	-	1/0	0/0/3	I/M
<i>Capoeta arulius</i>	Arulis Barb	-	-	6	-	0/0	0/0/14	A/M
<i>Capoeta oligolepis</i>	Checker Barb	10	7	9	-	7/0	0/0/15	A/M
<i>Capoeta semifasciolatus</i>	Chinese Green Barb	-	-	-	-	0/0	0/0/7	I/M
<i>Capoeta titteya</i> (V)	Cherry Barb	10	-	2	-	0/0	0/0/12	A/M
<i>Carassius auratus</i>	Goldfish	-	-	1	-	0/0	0/0/9	I/M
<i>Ctenopharyngodon idella</i>	Grass Carp	-	-	-	-	0/0	0/0/6	I/M
<i>Cyprinus carpio</i>	Carp - Koi, mirror, etc.	-	-	3	19	0/0	0/0/38	A/M
<i>Epalzeorhynchus siamensis</i>	Flying Fox	-	-	-	-	0/0	0/0/6	I/M
<i>Garra</i> sp.	Chinese Loach	-	-	-	-	0/0	0/0/4	I/M
<i>Gobio gobio</i>	Gudgeon	-	-	-	-	0/0	0/0/7	I/M
<i>Hypophthalmichthys molitrix</i>	Silver Carp	-	-	-	-	0/0	0/0/8	I/M
<i>Leuciscus cephalus</i>	Chub	-	-	3	-	0/0	0/0/0	I/D
<i>Leuciscus idus</i>	Ide or Orfe	-	-	-	6	0/0	0/0/0	I/D
<i>Noemacheilus barbatulus</i>	Stone Loach	-	-	-	-	0/0	0/0/5	I/M
<i>Osteochilus vittatus</i>	Bony-lipped Barb	-	-	1	-	0/0	0/0/1	I/M
<i>Phoxinus phoxinus</i>	Minnnow	-	-	1	-	0/0	0/0/3	I/M
<i>Puntius nigrofasciatus</i> (V)	Black Ruby Barb	-	-	3	-	0/0	0/0/9	I/M

		1	2	3	4	5	6	7/8
<i>Puntius sachsii</i>	Golden Barb	-	-	2	-	0/0	0/0/5	I/M
<i>Rasbora elegans</i>	Elegant Rasbora	-	-	5	-	0/0	0/0/25	A/M
<i>Rasbora trilineata</i>	Scissortail Rasbora	-	-	-	-	0/0	0/0/16	A/M
<i>Rhodeus amarus</i>	Common Bitterling	-	-	-	-	0/0	0/0/4	I/M
<i>Rutilus rutilus</i>	Roach	-	-	1	-	0/0	0/0/9	I/M
<i>Sarcocheilichthys sinensis</i>	Amur Sucker	10	-	-	-	0/0	0/0/10	A/M
<i>Scardinius erythrophthalmus</i>	Rudd	-	-	11	-	0/0	0/0/29	A/M
<i>Tanichthys albonubes</i>	White Cloud Mountain Minnow	-	-	1	-	0/0	0/0/16	A/M
<i>Tinca tinca</i>	Tench	-	-	-	-	0/0	0/0/2	I/M
<i>Zacco</i> sp.	Zacco	8	-	5	-	0/0	0/0/3	I/M
Cyprinodontiformes								
<i>Aphyosemion gardneri</i>	Clausen's Steel-blue Killie	4	-	1	-	0/0	1/2/0	I/M
<i>Ameba splendens</i> (E)	Butterfly Goodeid	-	177	92	103	5/0	0/0/50	A/D
<i>Xenopophorus captivus</i> (E)	Green Goodeid	10	18	-	-	18/0	0/0/10	A/M
<i>Xenotoca eiseni</i>	Red-tailed Goodeid	-	115	11	-	54/0	0/0/100	A/B
<i>Poecilia nigrofasciata</i>	Black-barred Limia	-	208	15	80	35/0	0/0/130	A/B
<i>Poecilia reticulata</i>	Guppy	-	-	35	-	200/0	0/0/265	A/M
<i>Poecilia reticulata</i> (wild form)	Pitch-lake Guppy	12	44	-	-	32/0	0/0/24	A/M
Gadiformes								
<i>Gadus morhua</i>	Cod	-	-	3	-	0/0	0/0/0	I/D
<i>Pollachius pollachius</i>	Pollack	-	-	1	-	0/0	0/0/2	I/M
<i>Pollachius virens</i>	Saithe	-	-	10	-	0/0	0/0/0	I/D
Gasterosteiformes								
<i>Gasterosteus aculeatus</i>	Three-spined Stickleback	-	-	19	7	0/0	1/0/17	A/M
Gymnotiformes								
<i>Electrophorus electricus</i>	Electric Eel	-	-	-	-	0/0	0/0/1	I/M
Lepidosireniformes								
<i>Protopterus aethiopicus</i>	Heckel's African Lungfish	-	-	-	-	0/0	0/0/1	I/M
Lepisosteliformes								
<i>Lepisosteus oculatus</i>	Spotted Gar	-	-	-	-	0/0	0/0/2	I/M
<i>Lepisosteus platyrhincus</i>	Florida Gar	-	-	-	-	0/0	0/0/3	I/M
Osteoglossiformes								
<i>Gnathonemus ibis</i>	Elephant-nose Fish	-	-	-	-	0/0	0/0/1	I/M
<i>Marcusenius angolensis</i>	Round-nose Elephant Fish	-	-	-	-	0/0	0/0/1	I/M
<i>Notopterus chitalla</i>	Clown Knife Fish	-	-	-	-	0/0	0/0/5	I/M
<i>Pantodon buchholzi</i>	Butterfly Fish	4	-	-	1	0/0	0/0/3	I/M
Perciformes								
<i>Naso lituratus</i>	Lipstick Tang	-	-	-	-	0/0	0/0/1	I/M
<i>Paracanthurus hepatus</i>	Regal Tang	1	-	1	-	0/0	0/0/11	A/M
<i>Zebrafish</i>	Yellow Sailfin Tang	2	-	6	-	0/0	0/0/5	I/M
<i>Ctenopoma kingsleyae</i>	Kingsley's Climbing Perch	-	-	4	-	0/0	0/0/2	I/M
<i>Apogon nematopterus</i>	Pjama Cardinal	-	-	1	-	0/0	0/0/3	I/M
<i>Belontia signata</i> (R)	Combtail	-	-	-	-	0/0	0/0/24	A/M
<i>Betta splendens</i>	Siamese Fighting Fish	5	-	4	10	0/0	1/0/0	I/M
<i>Colisa chuna</i>	Honey Gourami	4	-	1	-	3/0	0/0/0	I/M
<i>Colisa labiosa</i>	Thick-lipped Gourami	4	-	3	-	0/0	0/0/1	I/M
<i>Colisa lalia</i>	Dwarf Gourami	2	7	2	-	0/0	0/0/7	I/M

		1	2	3	4	5	6	7/8
<i>Corydoras nattereri</i>	Blue Catfish	-	-	-	-	0/0	0/0/6	I/M
<i>Corydoras paleatus</i>	Peppered Catfish	-	-	-	-	0/0	0/0/7	I/M
<i>Corydoras panda</i>	Panda Catfish	-	-	-	-	0/0	0/0/1	I/M
<i>Corydoras trilineatus</i>	Leopard Catfish	-	-	-	-	0/0	0/0/1	I/M
<i>Corydoras undulatus</i>	Wavy Catfish	-	-	-	-	0/0	0/0/12	A/M
<i>Hoplosternum littorale</i>	Hoplosternum Catfish	-	-	-	-	0/0	0/0/2	I/M
<i>Agamyxis pectinifrons</i>	Spotted Doras Catfish	4	-	1	-	0/0	0/0/3	I/M
<i>Heteropneustes fossilis</i>	Stinging Catfish	-	-	-	-	0/0	0/0/2	I/M
<i>Ictalurus nebulosus</i>	American Bullhead Catfish	-	-	-	-	0/0	0/0/1	I/M
<i>Ancistrus</i> sp.	Bristle-nosed Catfish	-	-	-	-	0/0	0/0/1	I/M
<i>Hypostomus punctatus</i>	Suckermouth Catfish	2	-	-	-	0/0	0/0/5	I/M
<i>Otocinclus affinis</i>	Dwarf Sucker Catfish	-	-	1	-	0/0	0/0/8	I/M
<i>Pterygoplichthys gibbiceps</i>	Sailfin Pleco	-	-	-	-	0/0	0/0/1	I/M
<i>Synodontis angelicus</i>	African Spotted Catfish	-	-	-	-	0/0	0/0/1	I/M
<i>Synodontis clarias</i>	Red-tailed Synodontis	-	-	-	-	0/0	0/0/1	I/M
<i>Synodontis multipunctatus</i>	Cuckoo Catfish	-	-	-	-	0/0	0/0/4	I/M
<i>Synodontis</i> sp.	Synodontis	-	-	-	-	0/0	0/0/4	I/M
<i>Silurus glanis</i>	Wels Catfish	-	-	-	-	0/0	0/0/3	I/M
Syngnathiformes								
<i>Hippocampus histrix</i>	Prickly Seahorse	9	-	15	-	0/0	0/0/0	I/D
<i>Nerophis ophidion</i>	Worm Pipefish	-	-	-	-	0/0	0/0/4	I/M
Tetraodontiformes								
<i>Balistes carolinensis</i>	Grey Triggerfish	-	-	1	-	0/0	0/0/0	I/D
<i>Odonus niger</i>	Black Triggerfish	-	-	-	-	1/0	0/0/0	I/M
<i>Arothron hispidus</i>	Striped-belly Puffer	-	-	1	-	0/0	0/0/1	I/M
<i>Arothron stellatus</i>	Spotted Puffer	-	-	-	-	0/0	0/0/1	I/M

Total: Fishes: 210 species; approx. 2445 specimens

INVERTEBRATES

(Invertebrates in the aquarium are not listed)

ANNELIDA

Hirudinea

<i>Hirudo</i> sp.	American Medicinal Leech	-	-	6	-	0/0	0/0/0	A/na
<i>Hirudo medicinalis</i> (I)	Medicinal Leech	-	-	5	-	0/0	0/0/0	I/na

MOLLUSCA

Gastropoda

<i>Partula affinis</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/120	0/0/113	I/N
<i>Partula arguta</i> (E)	Polynesian Tree Snail	-	-	-	-	0/0	0/0/0	I/na
<i>Partula clara</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/159	0/0/113	I/N
<i>Partula dentifera</i> (E)	Polynesian Tree Snail	-	-	-	-	0/42	0/0/38	I/B
<i>Partula faba</i> (E)	Polynesian Tree Snail	-	-	-	-	0/42	0/0/73	I/D
<i>Partula gibba</i> (E)	Polynesian Tree Snail	-	-	-	-	0/2	0/0/15	I/N
<i>Partula hebe bella</i> (E)	Polynesian Tree Snail	-	-	-	-	0/18	0/0/54	I/D
<i>Partula hyalina</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/26	0/0/18	I/N
<i>Partula labrusca</i> (E)	Polynesian Tree Snail	-	-	-	-	0/13	0/0/21	I/B
<i>Partula mirabilis</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/1	0/0/5	I/N
<i>Partula mirabilis</i> x <i>taeniata</i>	Polynesian Tree Snail	-	-	-	-	0/0	0/0/0	I/na

		1	2	3	4	5	6	7/8
<i>Partula mooreana</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/23	0/0/76	I/M
<i>Partula nodosa</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/13	0/0/30	I/D
<i>Partula otahaitiana</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/109	0/0/103	I/N
<i>Partula radiolata</i> (V)	Polynesian Tree Snail	-	-	-	-	0/2	0/0/1	I/D
<i>Partula rosea</i> (E)	Polynesian Tree Snail	-	-	-	-	0/7	0/0/8	I/M
<i>Partula naturalis strigosa</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/61	0/0/126	I/M
<i>Partula naturalis vexillum</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/34	0/0/55	I/D
<i>Partula taeniata elongata</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/0	0/0/0	I/na
<i>Partula taeniata</i> ssp. unknown (Ex)	Polynesian Tree Snail	-	-	-	-	0/0	0/0/1	I/D
<i>Partula tohiveana</i> (Ex)	Polynesian Tree Snail	-	-	-	-	0/95	0/0/123	I/M
<i>Partula tristis</i> (formerly <i>garretti</i>)(Ex)	Polynesian Tree Snail	-	-	-	-	0/5	0/0/12	I/B
<i>Partula turgida</i> (E)	Polynesian Tree Snail	-	-	-	-	0/0	0/0/1	I/D
<i>Partula varia</i> (E)	Polynesian Tree Snail	-	-	-	-	0/41	0/0/53	I/D
<i>Samoana attenuata</i> (E)	Polynesian Tree Snail	-	-	-	-	0/3	0/0/2	I/N
<i>Samoana bellula</i>	Marquesan Tree Snail	-	-	-	-	0/26	0/0/19	I/N
<i>Samoana strigata</i>	Marquesan Tree Snail	-	-	-	-	0/5	0/0/21	I/N
<i>Samoana</i> sp. (Fatu Hiva 1)	Marquesan Tree Snail	-	-	-	-	0/1	0/0/4	I/N
<i>Samoana</i> sp. (Fatu Hiva 2)	Marquesan Tree Snail	-	-	-	-	0/12	0/0/0	I/N
<i>Samoana</i> sp. (Hiva Oa 1)	Marquesan Tree Snail	-	-	-	-	0/11	0/0/10	I/N
<i>Samoana</i> sp. (Hiva Oa 2)	Marquesan Tree Snail	-	-	-	-	0/13	0/0/5	I/N
<i>Samoana</i> sp. (Nuku Hiva)	Marquesan Tree Snail	-	-	-	-	0/0	0/0/1	I/N
<i>Samoana</i> sp. (Tahuata)	Marquesan Tree Snail	-	-	-	-	0/5	0/0/0	I/N
<i>Trochomorpha</i> sp. 3	Huahine Trochomorph Snail	-	-	-	-	0/0	0/0/1	A/M
<i>Trochomorpha</i> sp. 4	Tahitian Trochomorph Snail	-	-	-	-	0/0	0/0/20	A/N
<i>Achatina achatina</i>	Giant Land Snail	10	nr	nr	3	0/nr	0/0/2	A/M
<i>Achatina fulica</i>	Giant Land Snail	416	nr	nr	150	100/nr	0/0/18	A/B
<i>Archachatina marginata</i>	West African Giant Land Snail	-	nr	nr	-	14/nr	0/0/1	A/M
<i>Limicularia</i> sp.	Dwarf Achatina	1	-	-	1	0/0	0/0/0	I/na
<i>Euglandina rosea</i>	Predatory Snail	40	nr	nr	20	0/nr	0/0/15	I/M

CRUSTACEA

Malacostraca

<i>Coenobita clypeatus</i>	Land Hermit Crab	-	-	-	-	0/nr	0/0/1	I/M
<i>Cardiosoma</i> sp.	African Blue River Crab	-	-	-	-	0/nr	0/0/1	I/M

Notostraca

<i>Triops cancriformis</i> (E)	British Tadpole Shrimp	5	-	nr	-	0/nr	0/0/0	A/N
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ARACHNIDA

Araneae

<i>Argiope</i> sp.	Spider	2	-	-	-	0/2	0/0/0	I/N
<i>Nephila senegalensis</i>	Senegalese Giant Orb Spider	-	-	3	-	0/0	0/0/0	I/na
<i>Phoneutria nigriventer</i>	Brazilian Wandering Spider	-	-	-	2	0/0	0/0/0	I/na
<i>Phoneutria</i> sp.	Wandering Spider	-	-	-	1	0/0	0/0/0	I/na
<i>Brachypelma auratum</i>	Flame-knee Spider	-	-	-	-	0/0	0/1/0	I/M
<i>Brachypelma smithii</i> (K)	Red-kneed Bird-eating Spider	1	-	2	12	112/0	2/13/0	I/M
<i>Brachypelma emilia</i>	Red-legged Bird-eating Spider	-	-	1	-	1/0	0/0/0	I/M
<i>Brachypelma vagans</i>	Red-rumped Bird-eating Spider	-	-	-	-	3/0	0/0/0	I/M
<i>Grammostola spatulata</i>	Chile Rose Bird-eating Spider	1	-	-	1	0/0	0/0/0	I/na
<i>Lasiodora parahybana</i>	Brazilian Bird-eating Spider	-	-	-	-	0/0	0/2/0	I/M
<i>Avicularia avicularia</i>	Pink-toed Bird-eating Spider	-	130	10	44	76/0	0/1/0	I/B
<i>Avicularia hirsuta</i>	Pink-toed Bird-eating Spider	-	-	1	-	1/0	0/0/0	I/M
<i>Avicularia versicolor</i>	Surinam Bird-eating Spider	-	-	-	-	1/0	0/0/0	I/M
<i>Xenesthis immensa</i>	Lesser Black Bird-eating Spider	-	-	-	1	0/0	0/0/0	I/na

		1	2	3	4	5	6	7/8
<i>Latrodectus hasselti</i>	Red-back Black Widow Spider	-	-	1	-	0/0	0/0/0	I/na
<i>Latrodectus hesperus</i>	Brown Black Widow Spider	3	-	1	-	0/0	0/2/0	I/M
<i>Latrodectus mactans</i>	North American Black Widow Spider	1	-	-	-	0/0	0/1/0	I/M
<i>Poecilotheria subfusca</i>	Sri Lankan Ornamental Spider	-	-	1	-	10/0	1/1/0	I/M
Scorpiones								
<i>Euscorpium italicum</i>	European Scorpion	1	-	-	1	0/na	0/1/0	I/M
<i>Androctonus australis</i>	Tunisian Fat-tailed Scorpion	8	-	-	4	0/na	2/2/0	I/M
<i>Androctonus crassicauda</i>	Fat-tailed Scorpion	-	-	1	-	0/na	0/0/0	I/na
<i>Buthus occitanus</i>	Yellow Scorpion	-	-	1	-	0/na	0/0/0	I/na
<i>Pandinus imperator</i>	Imperial Scorpion	-	-	4	-	3/na	0/0/8	I/M
<i>Pandinus</i> sp.	Malagasy Jungle Scorpion	1	-	-	-	0/na	0/0/1	I/M
Uropygi								
<i>Mastigoproctus giganteus</i>	Giant Whip Scorpion	-	-	-	-	0/0	0/1/0	I/M
MYRIAPODA								
Chilopoda								
<i>Scolopendra abnormis</i>	Serpent Island Centipede	20	-	8	-	0/0	0/0/12	I/N
<i>Scolopendra abnormis</i>	Round Island Giant Centipede	8	-	2	-	1/0	0/0/5	I/N
<i>Scolopendra</i> sp.	Giant Centipede	1	-	1	-	0/0	0/0/0	I/na
Diplopoda								
<i>Graphidostrepsis</i> sp.	Giant Millipede	-	nr	nr	-	6/nr	1/2/0	A/M
<i>Epibolus</i> sp.	Giant Millipede	-	-	nr	nr	0/0	0/0/0	A/na
<i>Epibolus pulchripes</i>	Mombassan Train Millipede	15	nr	nr	6	26/nr	10/9/0	A/B
Unidentified species	Fire Millipede	4	nr	nr	-	0/nr	0/0/0	A/na
Unidentified species	Malagasy Giant Pill Millipede	11	nr	nr	-	0/nr	0/0/0	I/na
Unidentified species	Polydesmid Millipede	-	nr	nr	2	0/nr	1/0/0	A/M
INSECTA								
Orthoptera								
<i>Locusta migratoria</i>	Migratory Locust	200	nr	nr	-	0/0	0/0/0	A/na
<i>Schistocerca gregaria</i>	Desert Locust	400	nr	nr	-	100/nr	20/20/0	A/B
<i>Gryllus bimaculatus</i>	African Field Cricket	-	nr	nr	-	400/nr	50/50/0	A/M
<i>Gryllus campestris</i> (E)	British Field Cricket	6	2700	1000	1500	200/nr	0/0/0	A/B
<i>Gryllus</i> sp.	Indian Field Cricket	1	-	1	-	0/nr	0/0/0	I/na
<i>Pholeogryllus geertsii</i>	Cave Cricket	-	nr	nr	-	200/nr	0/0/0	A/B
<i>Hemideina crassidens</i>	Wellington Tree Weta	2	75	55	40	0/0	8/10/0	I/B
<i>Decticus verrucivorus</i> (E)	British Wart-biter Cricket	-	1630	1188	442	0/1597	0/0/0	I/B
<i>Macrolyristes corporalis</i>	Long-legged Katydid	-	-	3	-	0/0	0/0/0	I/na
<i>Gryllotalpa gryllotalpa</i> (E)	Mole Cricket	8	-	4	-	8/0	2/3/0	I/M
<i>Eugaster</i> sp.	Whistle Cricket	9	-	9	-	0/0	0/0/0	I/na
Blattodea								
<i>Gomphadorhina portentosa</i>	Malagasy Hissing Cockroach	-	nr	nr	-	20/na	8/10/0	A/M
<i>Periplaneta americana</i>	American Cockroach	-	nr	nr	-	500/0	250/250/0	A/M
<i>Periplaneta australasiae</i>	Australian Cockroach	-	nr	nr	-	50/0	25/25/0	A/M
Mantodea								
<i>Tenodera sinensis</i>	Chinese Mantis	-	-	nr	-	0/0	0/0/0	I/na
Unidentified species	Praying Mantis	2	-	1	1	0/0	0/0/0	I/D

Phasmatoden

		1	2	3	4	5	6	7/8
<i>Acrophylla wuelfingi</i>	Queensland Titan Stick Insect	-	nr	nr	-	75/300	1/1/0	A/B
<i>Aretaon asperrimus</i>	Thorny Stick Insect	-	nr	nr	12	0/0	0/0/0	A/na
<i>Eurycantha calcarata</i>	Indonesian Spiny Stick Insect	-	nr	nr	-	0/100	23/29/0	A/B
<i>Exatosoma tiaratum</i>	Macleay's Spectre Stick Insect	120	nr	nr	-	204/300	4/2/0	A/B
<i>Heteropteryx dilatata</i>	Malaysian Jungle Nymph	-	nr	nr	-	0/100	9/5/0	A/B
Coleoptera								
<i>Scarabaeus semipunctatus</i>	African Dung Beetle	12	nr	18	-	0/nr	0/0/4	A/M
<i>Helicocypis</i> sp.	Horned Dung Beetle	-	nr	2	-	0/nr	0/0/0	I/na
<i>Pachnoda marginata</i>	Margined Chafer Beetle	-	nr	10	-	0/nr	0/0/0	A/na
<i>Blaps mucronata</i>	Churchyard Beetle	100	nr	6	80	0/nr	0/0/14	A/M
<i>Blaps</i> sp.	Desert Beetle	-	nr	1	-	0/nr	0/0/1	A/M
Unidentified species	'Citroen' Desert Beetle	-	nr	2	-	0/nr	0/0/0	A/na
<i>Anthia</i> sp.	Domino Beetle	-	-	2	-	0/0	0/0/0	I/na
Unidentified species	St Helena Carabid	-	nr	5	-	0/0	0/0/0	I/na
Diptera								
<i>Drosophila melanogaster</i>	Fruit Fly	-	-	-	-	0/0	0/0/1	C/M
Lepidoptera								
<i>Bombyx mori</i>	Silkworm	-	nr	nr	-	0/300	0/0/0	A/M
<i>Dryas julia</i>	Flambeau	7	nr	nr	-	0/0	0/0/0	I/na
<i>Heliconius charitonius</i>	Zebra Butterfly	29	nr	nr	-	nr/nr	27/27/0	I/B
<i>Heliconius melpomene</i>	Postman Butterfly	-	nr	nr	-	nr/nr	0/0/0	A/na
<i>Actias luna</i>	American Moon Moth	-	nr	nr	-	20/0	0/0/0	A/M
Hymenoptera								
<i>Ampulex compressa</i>	Jewel Wasp	5	nr	nr	-	nr/nr	28/9/0	A/B
<i>Apis mellifera</i>	Honeybee	2	-	4	-	0/0	0/0/2	C/M
<i>Atta cephalotes</i>	Leaf-cutting Ant	4	-	2	3	1/0	0/0/1	C/M
<i>Formica rufa</i> (V)	Red Wood Ant	-	-	-	-	0/0	0/0/1	C/M
Odonata								
<i>Ishnura/Coenagrion elegans/puella</i>	Blue-tailed/Azure Damselflies	35	nr	35	-	0/0	0/0/0	A/na
Hemiptera								
<i>Oncopeltis fasciata</i>	Milkweed Bug	-	nr	5	-	0/nr	0/0/0	A/na
<i>Platymenus biguttata</i>	Assassin Bug	-	nr	nr	-	60/nr	0/0/10	A/B
ONYCHOPHORA								
Peripatidae								
<i>Macroperipatus geayi</i>	Velvet Worm/Peripatus	-	3	5	-	0/0	0/0/0	I/na

Total: Invertebrates: approx. 83 species; approx. 4350 specimens; 5 colonies

WHIPNADE WILD ANIMAL PARK

MAMMALS

Marsupialia

Macropus rufogriseus frutica Red-necked (Bennett's) Wallaby** 463 - - - - - 485

Primates

Saimiri sciureus Squirrel Monkey (Black-capped form) 20 - 1 - 1 2 6/11/1

Leontopithecus rosalia (E) Golden Lion Tamarin 2 - - - - - 1/1

Pan troglodytes (V) Chimpanzee 9 - 1 1 - - 6/3

Rodentia

Cynomys ludovicianus Prairie Marmot** 200 - - - - - 250

Dolichotis patagonum Mara** 120 - - - - - 180

Carnivora

Canis lupus (V) Grey Wolf 18 - - - 3 - 6/6/3

Ursus arctos Brown Bear 5 - - - - - 1/4

Ailurus fulgens (V) Red Panda 1 2 - - 1 1 0/1

Helogale parvula Dwarf Mongoose 8 - - - - - 4/4

Panthera leo Lion 2 - - - - - 1/1

Panthera tigris altaica (E) Siberian Tiger 3 - - - 1 - 0/2

Acinonyx jubatus (V) Cheetah 7 1 - - - 1 5/2

Pinnipedia

Zalophus californianus Californian Sealion 3 - 1 - - - 1/2/1

Phoca vitulina Common Seal 1 - - - - - 1/0

Halichoerus grypus Grey Seal 1 - - - - - 0/1

Proboscidea

Elephas maximus (E) Asian Elephant 3 - - - - - 0/3

Perissodactyla

*Equus burchelli antiquorum** Chapman's Zebra 1 - - - - - 1/0

*Equus grevyi** (E) Grevy's Zebra 8 - 2 - - - 3/7

*Equus hemionus onager** (V) Asiatic Wild Ass 8 - - - - - 2/6

*Equus przewalskii** (Ex?) Przewalski's Horse 19 - 2 - 3 2 7/9

Rhinoceros unicornis (E) Asian One-horned Rhinoceros 3 - - - 1 - 1/1

Ceratotherium simum simum (V) White Rhinoceros 8 - - - - 1 1/6

Diceros bicornis michaeli (E) Black Rhinoceros 2 - - - - - 1/1

Artiodactyla

Hippopotamus amphibius Hippopotamus 4 - - - 1 - 2/1

Hexaprotodon liberiensis (V) Pygmy Hippopotamus 5 - - - - - 2/3

*Lama glama** Llama 2 - - - - - 2/0

Camelus bactrianus Bactrian Camel 16 - 4 - 1 3 5/11

Muntiacus reevesi Reeves's Muntjac** 30 - - - - - 35

Dama dama Fallow Deer 23 - 9 1 1 - 8/13/9

*Axis axis** Axis Deer 56 - 23 14 2 6 18/27/12

*Axis porcinus** Hog Deer 40 - 14 8 9 - 18/16/3

*Cervus duvauceli** (E) Barasingha 29 - 10 4 - - 14/18/3

*Cervus nippon taiouanus** Sika Deer 53 - 15 5 6 21 8/20/8

Cervus elaphus Red Deer 84 3 11 - 6 - 6/85/1

*Elaphurus davidianus** (E) Père David's Deer 78 - 25 5 2 19 12/30/35

Rangifer tarandus Reindeer 5 - - - 1 1 0/3

Hydropotes inermis (V) Chinese Water Deer** 350 - - - - - 463

*Giraffa camelopardalis** Giraffe 1 - 1 - - - 1/1

*Giraffa camelopardalis reticulata** Reticulated Giraffe 4 - - - - - 2/2

*Tragelaphus angasi** Nyala 12 - 6 - 3 - 4/11

*Tragelaphus spekei** Sitatunga 8 - 4 1 1 - 4/6

*Tragelaphus euryceros** Bongo 4 - - - 1 - 1/2

*Boselaphus tragocamelus** Nilgai 28 - 15 - 2 24 1/15/1

*Bos gaurus** (V) Gaur 2 - - - - - 1/1

Bos grunniens Yak 16 - 6 1 1 6 2/8/4

*Syncerus caffer nanus** African Buffalo 6 - 1 - - 2 3/2

Bison bison American Bison 2 - 1 1 - - 1/1

Bison bonasus (V) European Bison 8 - 1 - 1 - 1/7

*Hippotragus equinus** Roan Antelope 11 1 3 3 2 3 3/4

*Kobus ellipsiprymnus** Common Waterbuck 4 - 3 1 1 - 2/3

Kobus megaceros (V) Nile Lechwe 7 - 2 - 2 - 5/2

*Oryx gazella gazella** Gemsbok 5 - 3 - 1 - 1/6

*Oryx dammah** (E) Scimitar-horned Oryx 29 - - - 1 6 0/22

*Antelope cervicapra** (V) Blackbuck 20 2 6 4 3 - 4/9/8

*Gazella thomsonii** Thomson's Gazelle 2 - - - 1 - 0/1

Ovibos moschatus Musk Ox 2 - - - 1 - 0/1

Ovis musimon Mouflon 1 - - - - - 0/1

Ovis canadensis Bighorn Sheep 3 - 1 - - - 1/3

Domestic

Shire Horse 1 - - - - - 1/0

Cream Pony 2 - - - - - 1/1

Welsh Pony (Cream form) 1 - - - - - 1/0

Oxford Sandy x Black Pig 1 - - - - - 0/1

Belted Galloway Cattle 1 - - - - - 1/0

Red Poll Cattle 3 - - - - - 0/3

Jersey Cattle 2 - - - - - 1/1

Lincoln Longwool 1 - 1 - - - 0/2

Hampshire Sheep 10 1 12 2 11 - 1/9

Windsor White Goat 15 - - - 1 1 6/7

Total: Mammals 1902 10 184 51 72 99 2124

BIRDS

Casuariformes

Dromaius novaehollandiae Emu 6 - 9 1 1 1 3/2/7

Sphenisciformes

Aptenodytes patagonica King Penguin 13 - 2 2 1 - 3/3/6

Eudyptes crestatus Rockhopper Penguin 14 - 2 - 3 - 2/3/8

Spheniscus humboldti Humboldt's Penguin 52 - 8 2 - 12 20/25/1

Ciconiiformes

Ciconia ciconia White Stork 13 1 4 - - 1 1/2/14

Eudocimus ruber Scarlet Ibis 16 - 3 3 1 2 1/2/10

Phoenicopterus ruber ruber Rosy Flamingo 47 - - - 1 - 0/0/46

		1	2	3	4	5	6	7
Anseriformes								
<i>Cygnus atratus</i>	Black Swan	3	-	-	-	-	-	2/0/1
<i>Cygnus melanocoryphus</i>	Black-necked Swan	1	-	-	-	1	-	-
<i>Cygnus cygnus</i>	Whooper Swan	2	-	-	-	-	-	1/1
<i>Coscoroba coscoroba</i>	Coscoroba Swan	2	-	-	-	1	-	1/0
<i>Anser indicus</i>	Bar-headed Goose	45	-	-	-	8	2	5/8/22
<i>Anser canagicus</i>	Emperor Goose	4	-	-	-	1	-	2/1
<i>Branta leucopsis</i>	Barnacle Goose	11	-	-	-	-	-	4/0/7
<i>Branta ruficollis</i> (V)	Red-breasted Goose	3	-	-	-	1	-	2/0
<i>Branta sandvicensis</i> (V)	Nene	-	3	-	-	-	-	2/1
<i>Alopochen aegyptiacus</i>	Egyptian Goose	8	-	-	-	-	-	1/1/6
<i>Tadorna cana</i>	South African Shelduck	7	-	-	-	7	-	-
<i>Tadorna tadorna</i>	Shelduck	6	-	-	-	5	-	1/0
<i>Aix sponsa</i>	Carolina Duck	1	-	-	-	1	-	-
<i>Anas sibilatrix</i>	Chiloe Wigeon	1	-	-	-	1	-	-
<i>Anas bahamensis</i>	Bahama Pintail	-	6(6)	-	-	-	-	3/3
<i>Aithya ferina</i>	European Pochard	-	3(3)	-	-	-	-	1/2
<i>Somateria mollissima mollissima</i>	Eider Duck	12	-	-	-	-	-	5/7
Falconiformes								
<i>Haliaeetus indus</i>	Brahminy Kite	-	1	-	-	-	-	0/0/1
<i>Haliaeetus leucocephalus</i>	Bald Eagle	1	-	-	-	-	-	0/1
<i>Gyps africanus</i>	African White-backed Vulture	2	-	1	-	-	1	0/1/1
<i>Gyps rueppelli</i>	Ruppell's Griffon Vulture	3	-	-	-	-	-	1/2
<i>Accipiter nisus</i>	Eurasian Sparrowhawk	1	-	-	-	-	-	0/1
<i>Parabuteo unicinctus</i>	Harris's Hawk	-	2	-	-	-	-	1/1
<i>Falco biarmicus</i>	Lanner Falcon	4	-	-	-	-	1	3/0
<i>Falco cherrug</i>	Saker Falcon	1	-	-	-	-	-	1/0
Galliformes								
<i>Tragopan temminckii</i>	Temminck's Tragopan	-	3	-	-	-	1	1/1
<i>Gallus gallus</i>	Red Jungle Fowl**	21	-	-	-	-	(12)	35
<i>Pavo cristatus</i>	Common Peafowl**	140	-	-	-	-	-	160
Gruliformes								
<i>Grus japonensis</i> (V)	Red-crowned Crane	3	4	-	-	-	2	2/3
<i>Grus vipio</i> (V)	White-naped Crane	5	2	1	-	-	2	4/2
<i>Grus rubicunda</i>	Brolga	3	-	-	-	-	-	2/1
<i>Anthropoides paradisea</i> (V)	Stanley Crane	4	-	2	1	-	2	1/2
<i>Bucconanans carunculatus</i> (V)	Wattled Crane	4	-	-	-	-	-	2/2
<i>Balearica regulorum</i>	South African Crowned Crane	1	-	-	-	-	-	0/1
<i>Cariacus cristata</i>	Red-legged Seriema	1	-	-	-	-	-	1/0
<i>Otis tarda tarda</i> (V)	Great Bustard	3	-	-	-	1	-	1/1
Charadriiformes								
<i>Haematopus ostralegus</i>	Oystercatcher	5	-	-	-	-	-	0/0/5
<i>Burhinus bistriatus</i>	Double-striped Thick-knee	2	-	-	-	-	-	1/1
Recurvirostridae								
<i>Himantopus himantopus</i>	Black-winged Stilt	1	1	-	-	-	-	1/0/1
Psittaciformes								
<i>Agapornis personata</i>	Masked Lovebird	-	5	-	-	-	-	0/0/5
<i>Ara ararauna</i>	Blue-&-gold Macaw	1	1	-	-	-	-	2/0
<i>Ara macao</i>	Scarlet Macaw	2	-	-	-	-	-	2/0

Cyanoliseus patagonus*Myiopsitta monachus**Psittacula eupatria***Strigiformes***Tyto alba**Otus leucotis**Bubo bubo bengalensis**Nyctea scandiaca**Strix aluco sylvatica**Speotyto cunicularia***Coraciiformes***Dacelo novaeguineae***Piciformes***Ramphastos vitellinus citreolaemus*

Patagonian Conure

Quaker (Monk) Parrakeet

Alexandrine Parrakeet

Barn Owl

White-faced Scops Owl

Bengal Eagle Owl

Snowy Owl

Tawny Owl

Burrowing Owl

Kookaburra

Citron-throated Toucan

Total: Birds

	1	2	3	4	5	6	7
Patagonian Conure	1	-	-	-	-	-	1/0
Quaker (Monk) Parrakeet	2	-	-	-	-	-	1/1
Alexandrine Parrakeet	2	-	-	-	-	-	2/0
Barn Owl	2	-	-	-	-	-	1/1
White-faced Scops Owl	2	-	2	-	1	-	2/1
Bengal Eagle Owl	1	-	-	-	-	-	0/1
Snowy Owl	4	-	-	-	-	1	1/2
Tawny Owl	2	-	-	-	-	-	1/1
Burrowing Owl	1	-	-	-	-	-	0/0/1
Kookaburra	1	-	-	-	-	-	0/0/1
Citron-throated Toucan	1	-	-	-	-	-	0/1
Total: Birds	494	32(9)	34	9	35	28(12)	522

REPTILES**Testudines***Terrapene carolina**Testudo hermanni* (V)*Testudo kleinmanni* (V)*Testudo horsfieldi**Geochelone denticulata**Chelus fimbriatus***Crocodylia***Osteolaemus tetraspis***Sauria***Eublepharis macularius**Basiliscus plumifrons**Iguana iguana**Eumeces schneideri**Mabuya perrotetti**Scincus scincus**Uromastyx hardwicki**Uromastyx aegyptius**Chamaeleo owenii**Chamaeleo senegalensis**Anolis carolinensis**Anolis sagrei**Ameiva sp.**Varanus exanthematicus*

Three-toed Box Tortoise

Hermann's Tortoise

Egyptian Tortoise

Horsfield's Tortoise

Yellow-footed Tortoise

Matamata

West African Dwarf Crocodile

Leopard Ground Gecko

Plumed Basilisk

Common Iguana

Schneider's Skink

Red-sided Skink

Sand Fish

General Hardwicke's Dabb Lizard

Egyptian Dabb Lizard

Owen's Chameleon

Senegal Chameleon

Green Anole

Brown Anole

Ameiva

Bosc's Monitor

Three-toed Box Tortoise	-	3	-	-	-	-	2/1
Hermann's Tortoise	9	-	-	-	1	-	2/6
Egyptian Tortoise	4	4	-	-	-	-	5/3
Horsfield's Tortoise	10	-	-	-	-	-	6/4
Yellow-footed Tortoise	3	-	-	-	-	3	-
Matamata	2	-	-	-	-	-	1/1
West African Dwarf Crocodile	11	-	-	-	1	6	1/3
Leopard Ground Gecko	4	-	9	-	-	9	1/3
Plumed Basilisk	2	-	1	1	-	-	1/1
Common Iguana	3	-	-	-	1	-	1/1
Schneider's Skink	1	-	-	-	1	-	-
Red-sided Skink	-	10	-	-	1	-	0/0/9
Sand Fish	1	-	-	-	-	-	0/0/1
General Hardwicke's Dabb Lizard	8	-	-	-	2	-	0/0/6
Egyptian Dabb Lizard	1	-	-	-	-	1(1)	-
Owen's Chameleon	-	2	1	-	-	2	0/1
Senegal Chameleon	-	4	-	1	2	-	0/0/1
Green Anole	1	-	-	-	1	-	-
Brown Anole	1	-	-	-	1	-	-
Ameiva	1	-	-	-	-	-	0/0/1
Bosc's Monitor	8	-	-	-	1	3	0/0/4

		1	2	3	4	5	6	7
Serpentes								
<i>Python molurus bivittatus</i> (V)	Burmese Python	1	-	-	-	-	-	0/1
<i>Corallus enydris cooki</i>	Cook's Tree Boa	3	-	-	-	-	-	1/2
<i>Cerastes cerastes</i>	Horned Cerastes Viper	2	-	-	-	-	2	-
<i>Echis carinatus sochureki</i>	Saw-scaled Viper	8	-	-	-	-	5	0/0/3
<i>Eryx johnii</i>	Smooth Sand Boa	2	-	-	-	-	-	2/0
Total: Reptiles		86	23	11	2	12	31(1)	75

AMPHIBIANS

Anura								
<i>Dendrobates auratus</i>	Green & Black Poison Frog	5	-	4	-	-	-	0/0/9
<i>Dendrobates truncatus</i>	Yellow & Black Poison Frog	7	-	10	-	-	-	0/0/17
<i>Ceratophrys cranwelli</i>	Wide-mouthed Frog	1	-	-	-	-	-	1/0
Total: Amphibians		13	-	14	-	-	-	27

The numbers given for fishes and invertebrates at Whipsnade represent the numbers held at the end of 1995

FISHES

Characiformes		
<i>Serrasalmus nattereri</i>	Red-bellied Piranha	0/0/24
<i>Paracheirodon innesi</i>	Neon Tetras	0/0/2
<i>Hyphessobrycon pulchripinnis</i>	Lemon Tetra	0/0/12
<i>Pristella riddlei</i>	X-ray Tetra	0/0/3
<i>Hemigrammus erythozonus</i>	Glowlight Tetra	0/0/4
Cypriniformes		
<i>Rasbora heteromorpha</i>	Harlequin Fish	0/0/12
Gymnotiformes		
<i>Electrophorus electricus</i>	Electric Eel	0/0/1
Perciformes		
<i>Acanthurus dussumieri</i>	Hawaiian Surgeon Fish	0/0/1
<i>Cromileptis altivelis</i>	Pantherfish/Polka-dot Grouper	0/0/1
<i>Monodactylus argenteus</i>	Silver Fish	>30
<i>Lutianus</i> sp.	Long-finned Snapper	0/0/1
<i>Chrysiptera parasema</i>	Yellow-tailed Damselfish	1/1
<i>Amphiprion ocellaris</i>	Clownfish	0/0/6
<i>Amphiprion clarkii</i>	Clark's Clownfish	0/0/3
<i>Chromis viridis</i>	Blue-green Chromis	0/0/10
<i>Valencienna strigata</i>	Blue-cheeked Goby	0/0/2
<i>Valencienna puellaris</i>	Orange-spot Goby	0/0/2
<i>Ptereleotris zebra</i>	Shotsilk Goby	0/0/6
<i>Ptereleotris evides</i>	Torpedo Goby	0/0/4
<i>Ptereleotris splendidum</i>	Firefish Goby	0/0/1

<i>Meiacanthus oualanensis</i>	Canary Blenny	0/0/2
<i>Anthias squamipinnis</i>	Lyretail Coralfish	0/0/1
<i>Gramma loreto</i>	Royal Gramma	0/0/1
Lophiiformes		
<i>Antennarius</i> sp.	Angler Fish	0/0/1
Siluriformes		
<i>Plecotomus</i> sp.	Plecotomus Catfish	0/0/1
Total Fishes: approx. 25 species; approx. 133 specimens		

INVERTEBRATES

ARACHNIDA

Araneae		
<i>Brachypelma smithii</i> (K)	Red-kneed Bird-eating Spider	0/1/4
<i>Grammostola cala</i>	Chile Rose Bird-eating Spider	0/1
<i>Poecilotheria regalis</i>	Indian Ornamental Spider	1/1
<i>Steatoda albomaculata</i>	Gambian False Widow Spider	0/0/24

Scorpiones

<i>Leiurus quinquestriatus</i>	Desert Scorpion	0/0/2
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MYRIAPODA

Diplopoda		
<i>Epibolus pulchripes</i>	Mombassan Train Millipede	0/0/3
Unidentified species	Nigerian Plated Millipede	0/0/4

INSECTA

Orthoptera		
<i>Schistocerca gregaria</i>	Desert Locust	Colony
<i>Pholeogryllus geertsi</i>	Cave Cricket	0/0/10

Coleoptera

<i>Oryctes nasicornis</i>	European Rhino Beetle	0/0/9
<i>Scarabaeides</i> sp.	Desert Beetle	0/0/6

Hymenoptera

<i>Acromyrmex octospinosus</i>	Leaf-cutter Ants	Colony
<i>Atta cephalotes</i>	Leaf-cutter Ants	Colony

MARINE INVERTEBRATES

<i>Stichodactyla</i> sp.	Carpet Anemone	2
<i>Linckia laevigata</i>	Blue-fingered Starfish	2
<i>Ophiocoma</i> sp.	Brittle Starfish	2
Unidentified species	Serpent Starfish	1
<i>Lysmata amboinensis</i>	Cleaner Shrimp	1

Total Invertebrates: approx. 18 species; approx. 74 specimens; 3 colonies

SUMMARY

	1	2	3	4	5	6	7	Number of species (excluding domestic)
London Zoo								
Mammals	741	130	609	41	100	518	821	83
Birds	586	146(12)	132	32	123	102(9)	607	135
Reptiles	344	657 (1)	44	10	109	354	572	108
Amphibians	34	60	23	-	42	11	64	9
Total	1705	993(13)	808	83	374	985(9)	2064	335

Estimated number of fishes and invertebrates in the Collection at 31 December 1995:

Fishes	Approx. 2445 specimens	210 species
Invertebrates	Approx. 4350 specimens (+ 5 colonies)	~ 83 species

Whipsnade Wild Animal Park

Mammals	1902	10	184	51	72	99	2124	58
Birds	494	32(9)	34	9	35	28(12)	522	56
Reptiles	86	23	11	2	12	31 (1)	75	20
Amphibians	13	-	14	-	-	-	27	3
Total	2495	65(9)	243	62	119	158(13)	2748	137

Note: Births, deaths, arrivals and departures of free-ranging animals at Whipsnade are not recorded.

Estimated number of fishes and invertebrates in the Collection at 31 December 1995:

Fishes	Approx. 133 specimens	25 species
Invertebrates	Approx. 74 specimens (+ 3 colonies)	18 species

Grand Total

Zoological Society
of London

4200	1058	1051	145	493	1143	4812	430*
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Grand Total of fishes: approx. 2578 specimens of 228 species*

Grand Total of invertebrates: approx. 4424 specimens (+ 8 colonies) of 95 species*

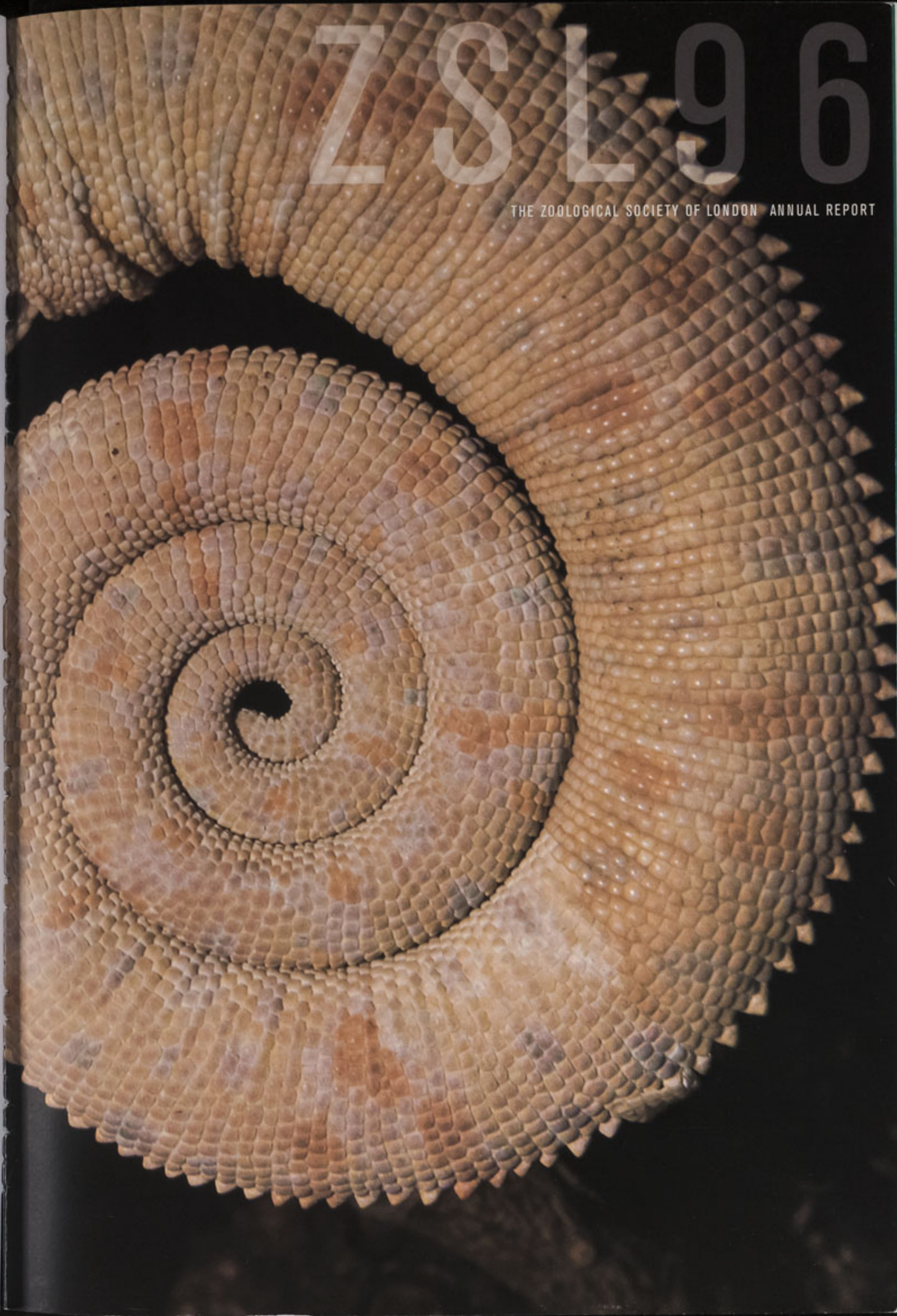
* The species common to London Zoo and Whipsnade Wild Animal Park are counted as one





ZSL 96

THE ZOOLOGICAL SOCIETY OF LONDON ANNUAL REPORT



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Yemen chameleon
photo: Jean-Luc Bénard

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ZSL MISSION

To promote the worldwide conservation of animals and their habitats by presenting outstanding living collections, breeding threatened species, increasing public awareness through information and education, conducting relevant research and undertaking action in the field. The ZSL pursues this mission by: 1. keeping and presenting animals at London Zoo and Whipsnade Wild Animal Park in accordance with best practice; 2. giving priority to species that are threatened in the wild; 3. increasing public understanding of animals and their welfare and of the issues involved in their conservation; 4. maintaining an outstanding education and information programme, particularly for schoolchildren and families; 5. undertaking field conservation programmes, both in Britain and abroad; 6. developing its role as a leading centre for research and conservation biology and animal welfare; 7. fulfilling its role as a learned society and force for zoology and animal conservation through publications, scientific meetings, lectures, the award of prizes for outstanding achievement and the promotion of conservation policy.

ZSL 96

PRESIDENT'S INTRODUCTION

The Zoological Society of London is famous for its zoos in Regent's Park and Whipsnade. It is famous as the oldest zoological society in the world. But very few people know about the breadth of its work today. This Report sets out to provide that wider picture. It shows the Society as a professional scientific body, holding meetings, producing learned publications, and maintaining the largest privately owned library of zoological books in the country. It reviews aspects of our research programme, which informs the scientific community, and provides an essential foundation for our activities in field conservation and the maintenance and captive breeding of threatened species. It summarises our work in the field, supporting animal conservation in a steadily widening circle of countries. And it explains how the two zoos continue to develop, applying modern concepts of animal welfare to make sure that the animals in our care are as healthy and contented as possible.

The Report does not set out to be comprehensive, or to provide a dry depiction of what is, in fact, a complicated organisation (though readers will find the structure of that organisation explained). It chooses highlights. Some appear more than once in different guises - for a piece of research often enlightens field activity, facilitates the maintenance of animals in captivity, and at the same time passes into the professional literature where others may seize upon it and develop its insights further. There are many cross-cutting themes in our work.

My distinguished predecessor, Field Marshal Sir John Chapple, said as he handed over to me that our Society had passed from survival to revival and needed to go on to 'thrival'. This report shows that the Zoological Society of London is, indeed, beginning to thrive. But we are ambitious to do more, and there are the roots of exciting new developments in these pages. A Millennium biodiversity centre that will also be an outstanding invertebrate display. New exhibits on the Mappin Terraces. An elephant conservation facility at Whipsnade. Plans for a major National Aquarium. The ideas are here. The professional skills are here. The confidence is here. We have shown that if we can secure the resources, the Society can do great things.

Sir Martin Holdgate
President



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Clinton Keeling

Christopher Marler

Martin Rowson, MA

To 22 May 1996

Anthony Farmer, PhD, CBIol, FIBiol, FLS, ARPS

John Knowles, OBE

The Hon. Peregrine Simon, FLS, OC, *Vice-President*

Jane Thornback, MSc

Ian Webb, BSc(Econ), MBA



REVIEW OF THE YEAR

ZSL has had a remarkable year. We have completed several important developments and started work on new projects, in London, at Whipsnade and overseas; we have redesigned and substantially improved our committee structure, the organisation of our executive team, and our membership schemes; and our trading operations have generated a useful surplus. It is highly unusual for any institution - in the public or private sector - to deliver all of these achievements in the same year.

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Hari, the Sumatran tiger, born 4 January 1996.

Covering Tiger Week: *BBC Newsroom South East* (left) *London Tonight* (right).



We have taken advantage of several opportunities; the weather was kind to us over the summer for both zoos, the BBC TV series *Animal Hospital on the Hoof*, with our vets providing the 'stories', drew even more visitors to Whipsnade, our scientists were very successful in raising research grants, and we received a further instalment of the John Perry legacy.

But these opportunities can only benefit us if we manage our businesses tightly and keep the costs of our activities under control. The significant surplus at Whipsnade was achieved on the foundation of highly controlled costs. The same is true of the Institute of Zoology. London Zoo improved its trading position in the face of a slight down-turn in visitor numbers which was mirrored by all of the capital's main attractions. Our Field Conservation & Consultancy operation started work on major projects in two new countries - in Egypt on the Sinai Peninsula and in Sumatra.

The result of all this activity is that donation income can be put into our reserves and used to fund investment in our future and to support work that cannot be afforded from our trading activity. With a third successive year of surplus before exceptional items (almost £400,000 this year), this is an assurance we can give to potential donors with great confidence.

Steffi, the 'new born' giraffe at Whipsnade, shown on *Animal Hospital on the Hoof*.

Hari faces the spotlight for the first time. *The Times* 13 February 1996. photo: Martin Beddall



New tiger cub comes up to scratch

LONDON ZOO's newest tiger is no pussy cat. The male Sumatran tiger cub, which made its first public appearance yesterday, is proving big quite a handful.

Caroline Connor, 20, the keeper who has been caring for the cub since its birth three weeks ago after its mother, Mira, was unable to suckle it, said: "He's no pushover, this one. He likes to get his own way."

The cub is already getting through nearly a pint of milk a day and is well on the way to its father's daily ration of 10lb of beef.

Covered in scratches, Miss Connor said: "He's got quite a temper. He just doesn't know what to do with his big paws."

The cub, which will be greeting visitors at the zoo in Regent's Park from today, is one of only 250 Sumatran tigers in captivity. There are fewer than 600 left in the wild. The cub will be named after a competition later this month.



We have made the significant changes in our organisation that followed the appointment of a Director General. In the 1995 annual report, our President reminded us that the purpose behind creating this new post was to "promote cohesion in our work and management, to make the whole greater than the sum of its parts". Senior executives now have responsibility for activity across the whole of ZSL, not just for isolated business units, and this process of integration will continue during 1997. Teams of colleagues from across ZSL come together to develop new projects and initiatives which are tested rigorously against our mission.

Our new committee structure is now in place. The Finance & General Purposes Committee, the Science & Conservation Advisory Committee and the Education & Information Advisory Committee are all in operation. Details of their membership are contained in the supplement.

The mission of ZSL can only be achieved with sound financial performance. We now have to use that business strength to enable us to fulfil a unique role in a troubled world. The issues of animal and habitat conservation and animal welfare are full of passion, anger, and sometimes deep despair. ZSL is increasingly recognised as a source of scientifically sound and calmly objective expertise. The problems that the world confronts are serious, but many of these have solutions. The partnerships we have in Tanzania, Kenya, Uganda, Saudi Arabia, Indonesia, Botswana, Egypt and in many other countries where our staff work are clear indications of our importance and usefulness to the international community. Our co-operative activities with English Nature, the Departments of the Environment and Agriculture, the RSPCA, and with national voluntary organisations and private companies indicate how our national profile is also growing.



Tiny tot

Staff at London Zoo were stunned if not to say shell-shocked when this tiny Kleinsmann's tortoise was born there earlier this month. Little Jurgen, as he has been nicknamed in honour of the famous German Euro 96 footie player with a very similar sounding name, is currently the size of a 50p piece and will still only measure just 10cms when fully grown. He would normally be found scuttling around the deserts of Egypt, Libya and Israel.

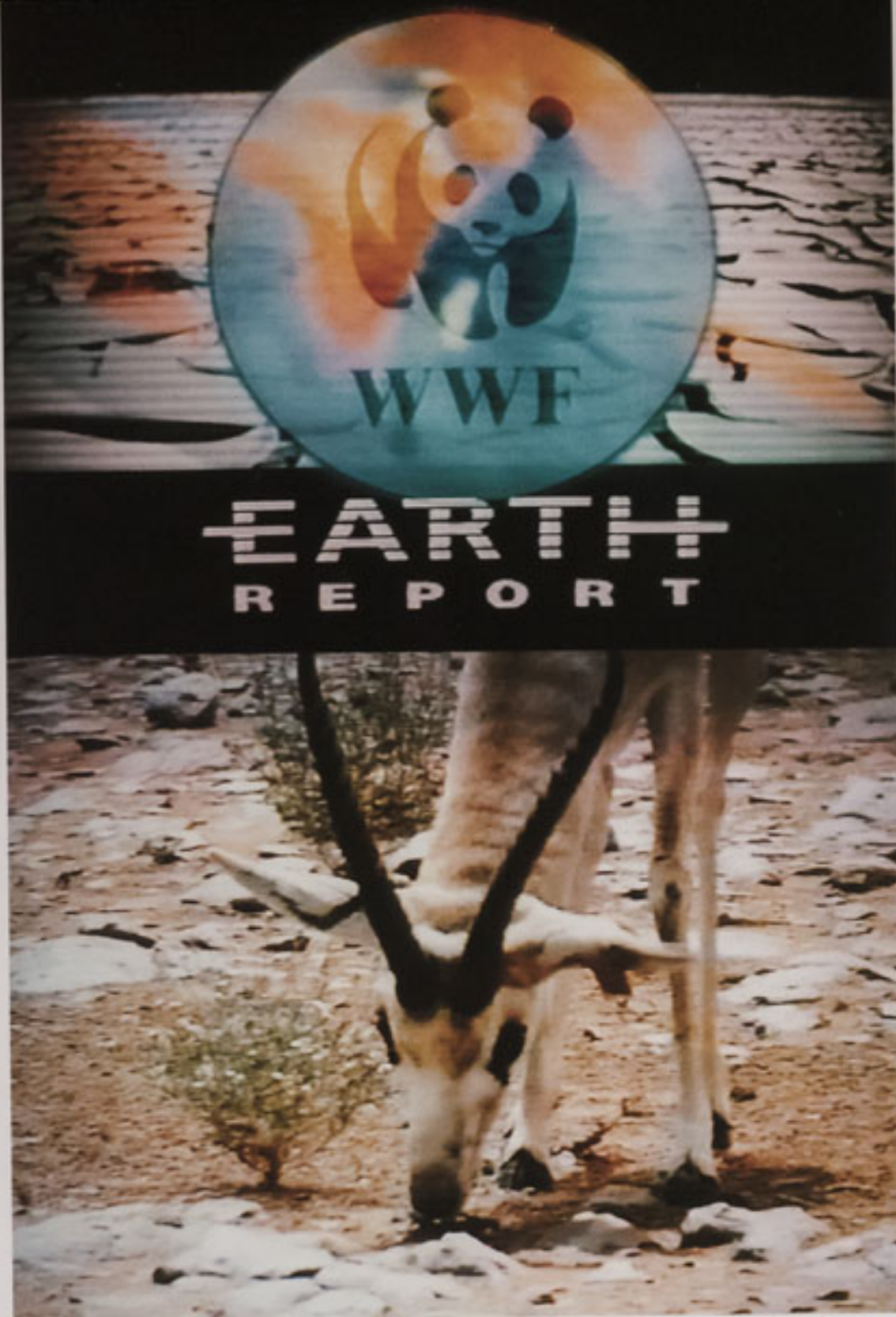


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Three Kleinmann tortoises were born at London Zoo in July. *The Sunday Times 'Funday'* 25 August 1996. photo: Solo Syndication

After six years of paperwork, our three hawksbill turtles finally went to Sea World in Florida.

Major developments have included the completion of the development of one of Europe's most advanced facilities for Asian elephants at Whipsnade. It will be formally opened during 1997 as the number of elephants in the herd is increased. In London Zoo, the animal accommodation and visitors' viewing area in the amphitheatre for our Animals in Action displays were substantially improved; this has resulted in a greater variety of events showing the natural behaviour of animals.

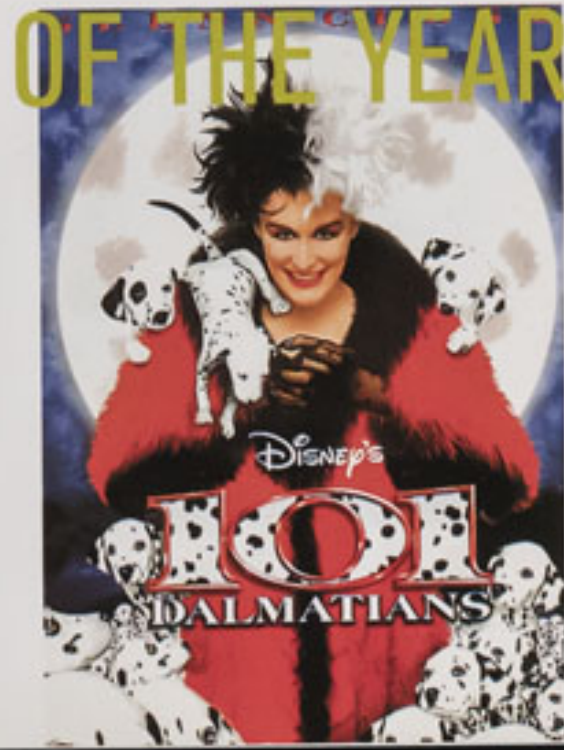


Earth Watch programme featuring ZSL's work in Saudi Arabia. image: courtesy of TVE.

Animal Hospital on the Hoof presenters at Whipsnade.

Rolf Harris waltzing Matilda the kookaburra.

London Zoo features in Disney's live action film *101 Dalmatians*.





We have also been planning for the future. Detailed work with the Millennium Commission and financial backers has brought the Millennium Project for Regent's Park very close to contract signature. We expect to begin work creating a unique exhibit on biodiversity, with the world's largest collection of living invertebrates by mid-1997. The Mappin Terraces, closed for many years, are being redeveloped to modern standards of display and husbandry and will be open in the spring of 1997. Major investment has been planned and approved for Whipsnade, including new hippo facilities; we have also planned a six-year programme for the refurbishment of our extensive road network in the Park.



Behind all these successes are people. The welfare of our animals, the quality of our science, the resilience of our business operations, and - above all - the sense of wonder we create at the richness and diversity of the animal world, rely totally on the skills, experience and commitment of our staff. By making the whole greater than the sum of the parts, it is they who will enable ZSL to be a significant and practical force for good in animal conservation.



Professor R McNeill Alexander
Secretary

Richard Burge
Director General



ZSL, as a scientific society, seeks to recognise and encourage excellence in zoological research at all levels of achievement. One of the ways it does so is by giving awards and prizes each year and Council has announced the following awards for contributions to zoology in 1996:

The Zoological Society of London Frink Medal for British Zoologists (for significant and original contributions by professional zoologists to the development of zoology in its wider implications) to *Professor John Krebs, FRS*, of the Natural Environment Research Council, in recognition of his outstanding role in the establishment and development of the discipline of behavioural ecology.

The Scientific Medal (awarded to zoologists 40 years of age and under, in recognition of scientific merit) to *Professor Peter Holland*, of the University of Reading, for highly original contributions to our understanding of molecular evolution, with particular reference to duplicated gene families in Chordata; to *Dr David Reid*, of The Natural History Museum, London, for his elegant studies of the taxonomy and phylogenetics of littorinid molluscs; and to *Professor William Sutherland*, of the University of East Anglia, for his pioneering theoretical and empirical research linking animal behaviour with population distributions and dynamics, and for applying his work to our understanding of conservation issues.

The Zoological Society of London Marsh Award for Conservation Biology (for contributions of fundamental science and its application to the conservation of animal species and habitat) to *Dr Jeremy Thomas*, of the Natural Environment Research Council, Institute of Terrestrial Ecology, for his outstanding work in conservation ecology and in particular for his classic study on the conservation of the Large Blue butterfly and the way that he has underpinned this work with excellent science.

The Stamford Raffles Award (awarded to an amateur zoologist for distinguished contributions to zoology) to *Mrs Norma Chapman*, for her outstanding contribution to knowledge of deer in Britain.

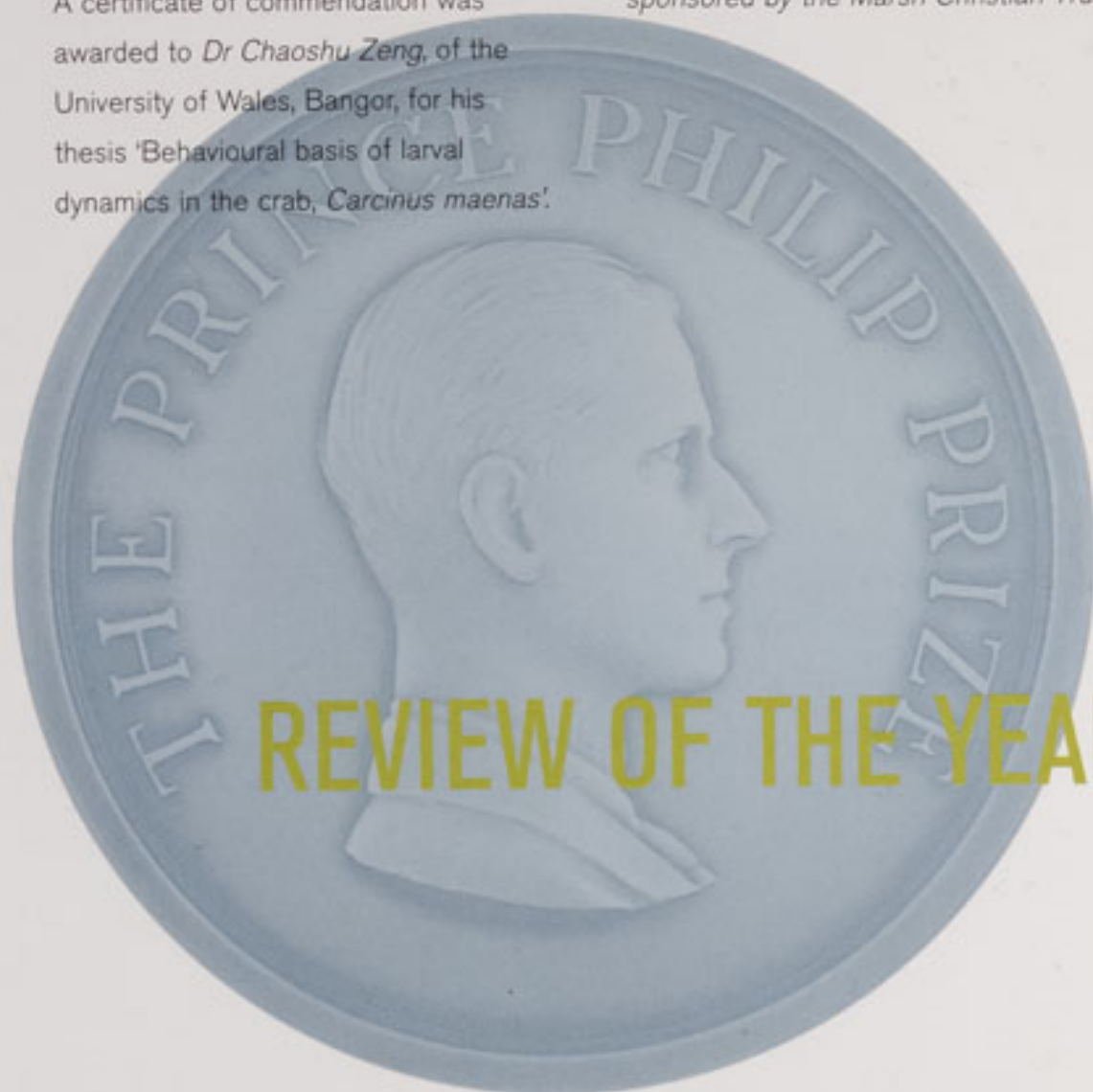
The Thomas Henry Huxley Award (for original work submitted as a doctoral thesis) to *Dr Alexander Willmott*, University of Cambridge, for his thesis 'The mechanics of hawkmoth flight'. A certificate of commendation was awarded to *Dr Chaoshu Zeng*, of the University of Wales, Bangor, for his thesis 'Behavioural basis of larval dynamics in the crab, *Carcinus maenas*'.



The bronze sculpture *Black rhinoceros* by Anita Mandl, donated by the HSBC Group, is the current Stamford Raffles Award.

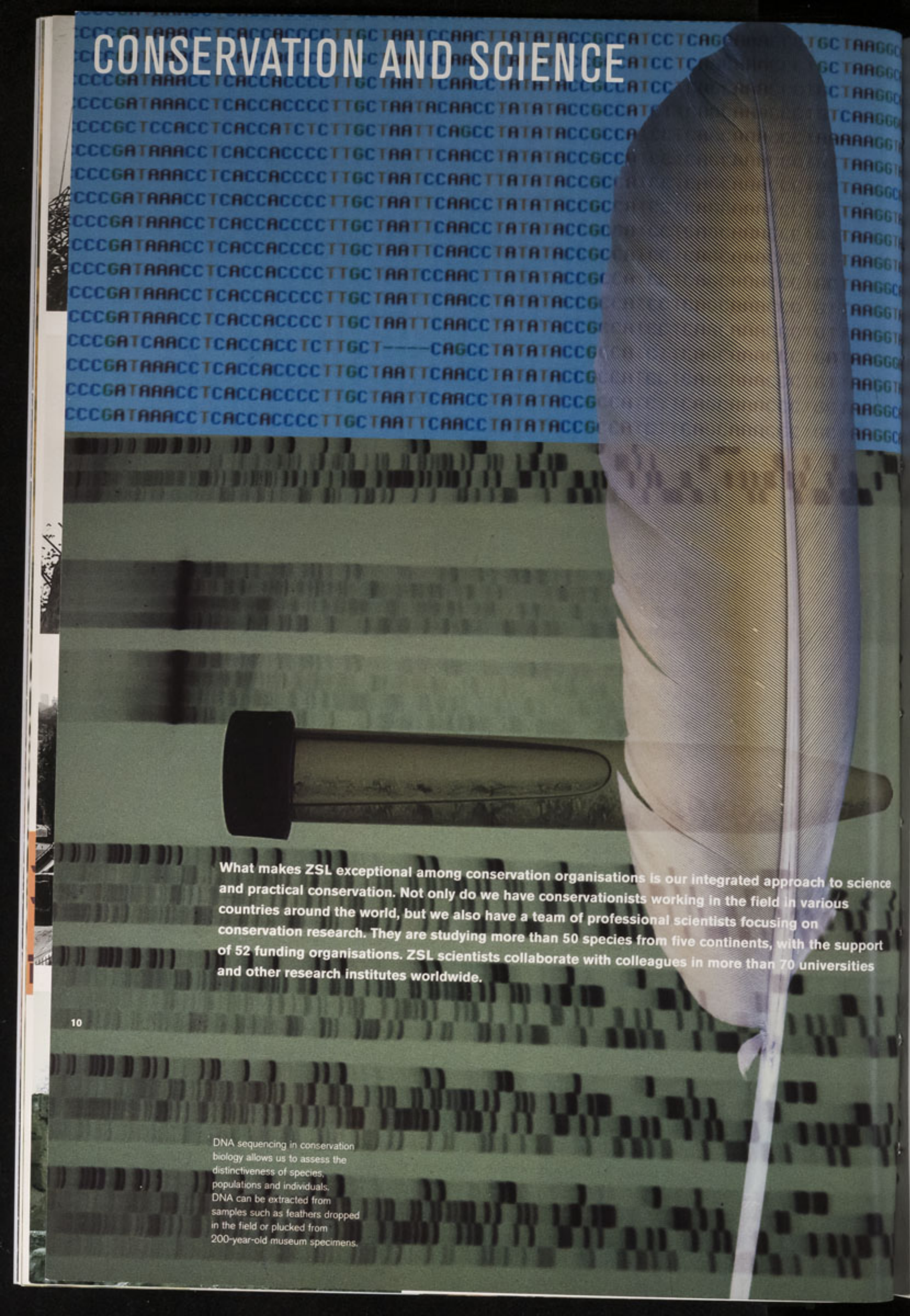
The Prince Philip Prize (open for competition to pupils under 19 years of age of schools or other places of education in the United Kingdom, the Channel Isles or the Isle of Man, on the basis of an account of practical work involving some aspect of animal biology) to *Miss Mhairi Cameron*, of Culloden Academy, for her essay 'Progesterone levels and behaviour during the bovine oestrus cycle'.

The Marsh Award for Conservation Biology, the Thomas Henry Huxley Award and the Prince Philip Prize are sponsored by the Marsh Christian Trust.



REVIEW OF THE YEAR 9

CONSERVATION AND SCIENCE



What makes ZSL exceptional among conservation organisations is our integrated approach to science and practical conservation. Not only do we have conservationists working in the field in various countries around the world, but we also have a team of professional scientists focusing on conservation research. They are studying more than 50 species from five continents, with the support of 52 funding organisations. ZSL scientists collaborate with colleagues in more than 70 universities and other research institutes worldwide.

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DNA sequencing in conservation biology allows us to assess the distinctiveness of species, populations and individuals. DNA can be extracted from samples such as feathers dropped in the field or plucked from 200-year-old museum specimens.

Staff at our two zoos continue to manage a wide range of national and international breeding programmes for endangered species. More than 20 such projects, involving animals from crickets to tigers, are being co-ordinated at London Zoo.

The 1996 World Conservation Congress was the largest ever.

ZSL was represented by our President, Sir Martin Holdgate, together with Alexandra Dixon, the Director of Field Conservation & Consultancy, and Dr Georgina Mace of the Institute of Zoology. Our special concern was the application of science in conservation and ZSL emerged with credit. We hope to make an increasing mark in the world before the next World Conservation Congress in four years time.

During 1996, staff at the Institute of Zoology organised the first attempt to apply the Red List criteria of the IUCN to marine fish. Participants at our workshop examined the evidence for 148 species of marine fish and recommended that 118 of them should be placed on the Red List. These species included Atlantic cod, blue-fin tuna, halibut and haddock. Because of the commercial value of these species, the proposed listings attracted a good deal of attention and controversy, not least at the World Conservation Congress. The workshop played a vital role in bringing marine fishes to the forefront of the conservation agenda and opened up some interesting scientific questions that need to be addressed.

At an IUCN UK seminar on sustainable fisheries in December, chaired by Sir Martin Holdgate, Dr Georgina Mace, Dr Heather Hall and Elodie Hudson represented ZSL. Dr Mace gave a topical talk on the relationship between sustainable use of fish stocks and the risk of extinction. The meeting, which was attended by the Secretary of State for the Environment, the Rt Hon. John Gummer MP, also included representatives of the fishing industry, government agencies and the conservation community.

ZSL was represented at the Okapi Workshop at the White Oak Conservation Centre in Florida.

Most of the zoos that hold okapi were represented, as well as the key people from the field. The meeting began the process of developing a comprehensive plan for the management of both wild and captive okapi.

ZSL's symposium on Conservation in a Changing World drew together conservation scientists from all over the world. One speaker presented data suggesting that the scientific community does not always concentrate on the questions of most importance to wildlife managers. This is where ZSL's Institute of Zoology is particularly important in focusing on the ecology, genetics and veterinary science that underpin effective animal conservation.

As part of ZSL's leading role in the conservation of tigers, Sarah Christie organised the Tiger Support Team,

formed of experts from various organisations. They visited three zoos in Russia as part of the international effort to maintain a healthy captive breeding programme. The team anaesthetised the tigers to give them full health checks. They took samples to check for disease, for genetic investigations and to store semen for the future.



A catch of cod shows the many other fish caught incidentally - in this case skate. photo: Richard Howard, from: *Ocean Planet - writing and images of the sea* by Peter Benchley & Judith Gradwohl.

Dr Saeed Mubarak (below), a vet from Khartoum in the Sudan, has worked at the King Khalid Wildlife Research Centre, Thumamah, in Saudi Arabia since 1987. He is particularly interested in wildlife management. In his time at Thumamah, which is managed by ZSL, he has become a dab hand with the dart-gun, having had to dart hundreds of gazelles. He also participated in the eradication of tuberculosis at Thumamah.



ZSL is now a partner in the **Sumatran Tiger Project in Way Kambas National Park**. The four-year project will gather data on Sumatran tiger ecology and set up community-based education initiatives to resolve human/tiger conflict. The project will send a supportive conservation message to the people of Indonesia.

Because of our continuing work with tigers in Thailand, the Thai authorities have shown their trust in ZSL by granting permission for us to export a number of concolor gibbons from their country. The animals will be individuals confiscated by the authorities and will augment the European breeding programme for this highly endangered species. The first gibbon, a female, which was previously a house-pet, has already arrived.

In support of the field conservation programme for the Asiatic lion, London Zoo teamed up with Helsinki Zoo to arrange for Dr Ravi Chellam of the Wildlife Institute of India to visit a number of carnivore translocation projects in Tanzania. Dr Chellam is responsible for a proposed programme to establish a second wild population of Asiatic lions by moving animals from the Gir Forest to another area within their historic range.

The management of Kathmandu Zoo passed from the Government of Nepal to the King Mahendra Trust for Nature Conservation. A masterplan was prepared and ZSL was asked to review this and make recommendations on the management of the site. Simon Tonge, Senior Curator at London Zoo, visited Kathmandu in April and spent a week providing training for staff, and advice and support for the masterplan team. ZSL prepared a report supporting the masterplan and making both general and specific recommendations for the zoo.

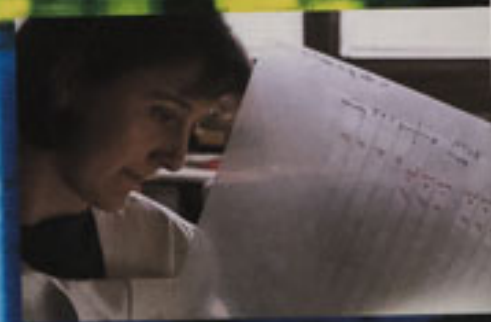
During 1996, Whipsnade continued to work closely with the Great Bustard Trust and conservationists in Russia. This culminated in a visit to Moscow by Clive Bates, of Whipsnade, to discuss the establishment of a joint co-operative programme between Russia and ZSL. The focus of work is on developing husbandry skills for the birds in captivity and supporting field conservation. As part of this work Whipsnade is assisting Hungary in the protection of nest-sites for the 1997 breeding season.

Links between Whipsnade and the Department of Wildlife in Ghana continued with a visit by two staff from Ghana in the early summer. This followed on from a number of visits made by Whipsnade staff to Ghana. The programme focuses on the training of zoo staff in Ghana with the aim of enabling them to increase their involvement in captive-breeding

programmes for their indigenous species. This is particularly important in Ghana because the zoos are run by the department that is also responsible for the protected reserves.

Both of these projects are made possible through the support of British Airways Assisting Conservation.

Conserving biodiversity in the Central Highlands of Ethiopia is the focus of a new ZSL project. An area of about 100 km² of Afro-alpine habitat has traditionally been protected by the local people for its sustainable use. It provides suitable habitat for a key population of Ethiopian wolf - the rarest member of the dog family in the world. There are now fewer than 500 Ethiopian wolves surviving in a few declining populations in small isolated pockets. This area probably holds the second most important population in the country. The Society is providing scientific expertise to complement and train Ethiopian partners, and thus compile inventories and ecological studies of the wildlife. We are also carrying out research with local communities to understand how they have traditionally utilised and protected this important habitat. The project will produce recommendations for a management strategy, incorporating the concerns of the local communities and the needs of the wildlife. These recommendations will be designed to support current conservation efforts and ensure sustainability in the long term.



"Quantifying and conserving biodiversity is now more important than ever. Our genetic research helps define appropriate units for conservation. We can assess diversity, study mating systems and identify novel evolutionary lineages. For example, a reappraisal of seahorse taxonomy is under way and a field key will be produced, accessible to fishers, conservationists, fishery managers and aquarists. This will be immediately useful for seahorse conservation." Dr Helen Stanley
Research Fellow

VULNERABLE ENDANGERED
CRITICAL

CONSERVATION AND SCIENCE

Using an automated system with fluorescent tags, it is now possible to score DNA samples (fox DNA here) for variability at six different microsatellite loci at once.
data: Stephan Funk



In their natural range, endangered Grevy's zebra compete with domestic livestock for critical resources such as water.

ZSL has begun a three-year programme in Lake Mburo National Park, Uganda, funded by the Overseas Development Administration (ODA) in collaboration with the African Wildlife Foundation. The Park represents the most biologically diverse savannah ecosystem in Uganda, supporting more than 50 species of mammals, 250 species of birds and numerous endemic fish. The Park also covers part of the Bahima pastoralists'

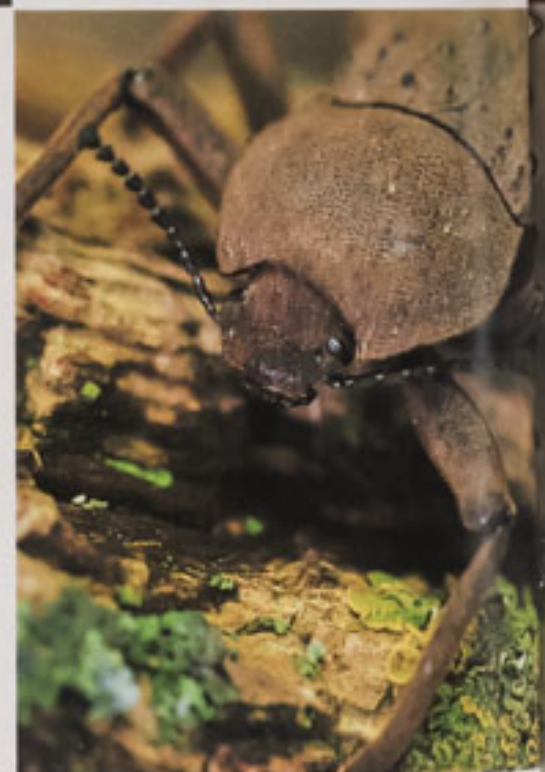
traditional grazing lands which include a vital source of water. Conflict with Park authorities is frequent. This project will use the Bahima pastoralists and their Ankole cows as a case study. The study will focus on how a conservation policy might allow the controlled integration of regionally-adapted cattle into the management of protected areas.

Our investigations of the Grevy's zebra in East Africa have identified some of the potential reasons for its dramatic decline.

Competition with domestic livestock is important because it forces zebras to move long distances to find water. This weakens the young which then have a lower chance of surviving to adulthood than offspring born to mothers in areas where livestock is excluded.

ZSL's field scientists carried out a survey of the large mammals of the St Katherine's Protectorate in South Sinai. They

discovered that, over the last decade, the numbers of dorcas gazelles have dropped throughout the Protectorate. This is a disturbing finding, given that the Protectorate acts as a corridor linking two important populations of this species.



One of the founder breeding Fregate beetles being kept at London to establish a secure *ex situ* population as a precaution against the threat from introduced rats. photo: Louise Murray

ZSL mounted two field missions to evaluate the status of the reserve on the island of Moorea set up to study conservation of *Partula* tree snails. Staff also conducted more field work in Tahiti. A further 240 captive-bred *Partula* (of three species) were released into the reserve. A captive colony was established for the first time in Polynesia at La Musée de Tahiti et des îles. ZSL staff participated in the annual meeting of the Pacific Island Land Snail Group. The group reviewed the conservation status of the Partulidae

family and produced a series of recommendations concerning the management of the captive populations.

In 1996, ZSL became involved with a conservation initiative for three remarkable endemic invertebrate species from the tiny Seychelles island of Fregate: the giant Fregate beetle, the enid snail and the world's largest known millipede. With the introduction of rats to Fregate, the endemic invertebrate species are potentially under considerable threat.

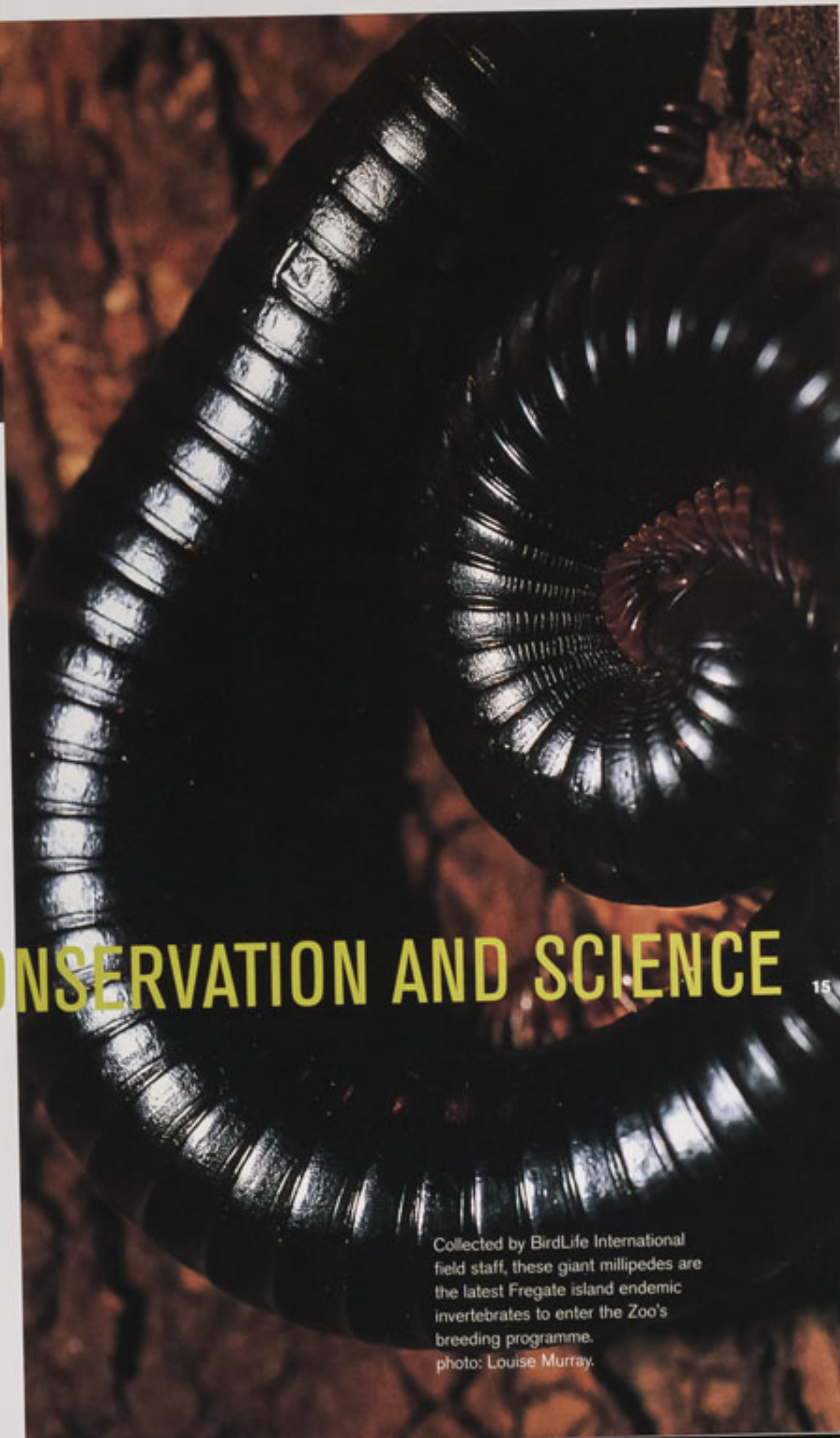
In collaboration with the Nature Protection Trust of Seychelles and BirdLife International, we have established founder populations of all three species at London Zoo and are assisting with a range of conservation efforts in the field.



"Not everybody loves invertebrates - part of my job is to get everyone to care for them as much as I do. Education is vital, such as talks, publicity and events like our Friendly Spider Programme, alongside our cutting-edge conservation breeding. Another year, another set of converts..."
Dave Clarke, Keeper-in-Charge, Invertebrates

Dave Clarke and millipede.
photo: Times Newspapers Ltd. / Simon Walker

CONSERVATION AND SCIENCE



Collected by BirdLife International field staff, these giant millipedes are the latest Fregate island endemic invertebrates to enter the Zoo's breeding programme.
photo: Louise Murray.



Inside an ant colony with multiple queens. Genetical work at ZSL can tell us who is related to whom (left).



An adult wart-biter cricket bred and reared at London Zoo as part of English Nature's Species Recovery Programme. photo: Rod Williams (above).

The two phonic types of pipistrelle bat and records of typical search phase echolocation calls: (Dr Gareth Jones, The University of Bristol, from *The Proceedings of the Royal Society B*), (above left).

ZSL has made progress this year on programmes for two of our native cricket species, the field cricket and the wart-biter cricket.

We have focused on investigations which clarify the status of the single-celled organisms living in the guts of these animals. Staff also collaborated with English Nature in a survey of French, Spanish and Dutch cricket populations. Monitoring of the UK field cricket release sites has confirmed that the new colonies, using zoo-bred stock, have become successfully established and are expanding at a healthy rate.

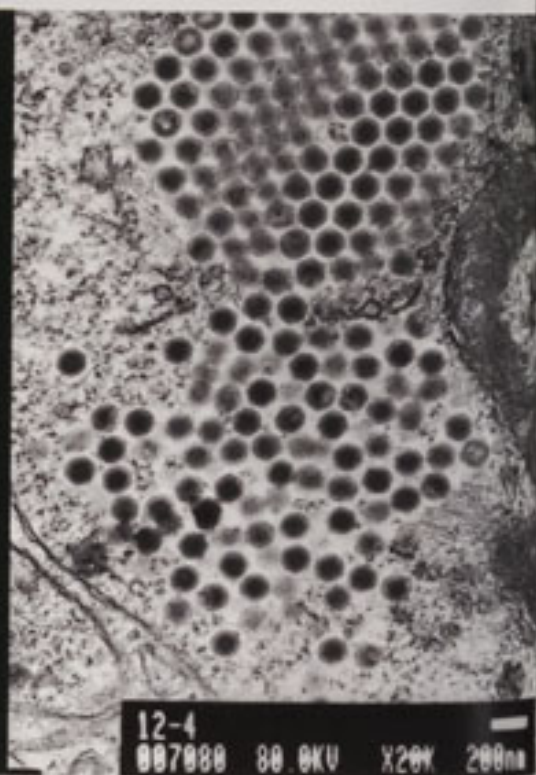
Areas of high biodiversity are of particular importance to

conservation and ZSL scientists have two projects studying the causes of such high diversity among the birds of East African savannah and West African rainforests.

Research at ZSL has been looking carefully at how to make choices about which areas of habitat would, if protected, conserve the greatest biodiversity. Reserves chosen simply because they have most species may not preserve the rarest species in which we are most interested, so our scientists have been investigating the best ways of making sensible choices on the basis of limited information.

The effects of inbreeding can be a major cause for concern in both zoo and free-living populations.

These effects are difficult to study in the wild, mainly because we do not have good information about the pedigrees of wild animals. In a major breakthrough, scientists at ZSL's Institute of Zoology have invented a new method of studying the subject that uses a single genetic test which does not rely on knowing detailed pedigrees.



Naked mole-rats in one of the colonies in the Institute of Zoology (left).

Transmission electronmicrograph of iridovirus cultured from the liver of a naturally-diseased common frog by using a fathead minnow epithelial cell line (above).

Several years ago, a theoretical biologist predicted that, in naked mole-rat societies, there must be some individuals that leave their own colony and invade a different one, taking fresh genetic material into the new colony. Now scientists, including mole-rat experts at ZSL, have found that such individuals do exist.

In an investigation of ant societies, ZSL scientists have discovered that many ants are not the offspring of any of the living queens in their colony. This discovery contradicts previous ideas and will have significant implications for our understanding of genetic variation in natural populations.


A new species of British mammal is a rare find but in the spring it was announced that the pipistrelle bat may in fact be two different species. The crucial genetic work in this discovery was carried out in ZSL's conservation genetics laboratory.

ZSL's veterinary pathologist published a major study of the possible causes of the mass mortality in common frogs in southern England. The project has identified a newly-discovered virus as the most likely principal cause and we now aim to make more detailed studies of this virus.

ZSL staff sit on a huge range of expert groups involved in policy-making and implementation in the world of animal conservation, including 11 of the World Conservation Union's Specialist Groups, and more than 20 Taxon Advisory Groups. We are also represented on the Councils, Boards and Committees of at least 30 other national and international organisations.

CONSERVATION AND SCIENCE

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Golden mantellas - one of the endangered amphibian species kept at London Zoo.

The Institute of Zoology is maintaining its active programme of undergraduate and postgraduate teaching. Apart from our involvement in running a course on mammalian reproduction and organising part of a Master of Research (MRes) degree in Environmental Science at University College London, our MSc course in Wild Animal Health, run in collaboration with the Royal Veterinary College, is now in its third year. The eight students of the new intake are of seven different nationalities, reflecting the strong international appeal of the course.

ZSL plays a major part in raising public awareness of the threats facing endangered species. For example, Tiger Week - co-ordinated by the Federation of Zoological Gardens - helped us to raise funds and inform visitors about the conservation projects for Sumatran, Siberian and Bengal tigers. The final sum of over £70,000 will go towards anti-poaching patrols and other conservation measures.



Tiger post - an illustration donated to London Zoo's Tiger Auction by Sir Hugh Casson (top left).

One of the cartoons donated to the Tiger Week auction (above).



Nevil Gorthy is a volunteer at both London Zoo and Whipsnade, and is one of our team of around 200 volunteers who give their time to help the work of ZSL. "The volunteer's role is similar at both locations. By manning information posts and education displays, we try to give visitors a more enjoyable visit and at the same time tell them about animals in general and conservation in particular". Nevil Gorthy



Responsible ownership is encouraged in London's Pet Care leaflets.

Brass rubbing, badge-making and I-spy trails are available for young children.



"Doing my work with a camera pointing at me and Rolf Harris asking lots of questions was challenging to say the least! Once into the routine, however, it became less intrusive and I was able to explain my job to the presenters whilst getting on with it. I was delighted to have the

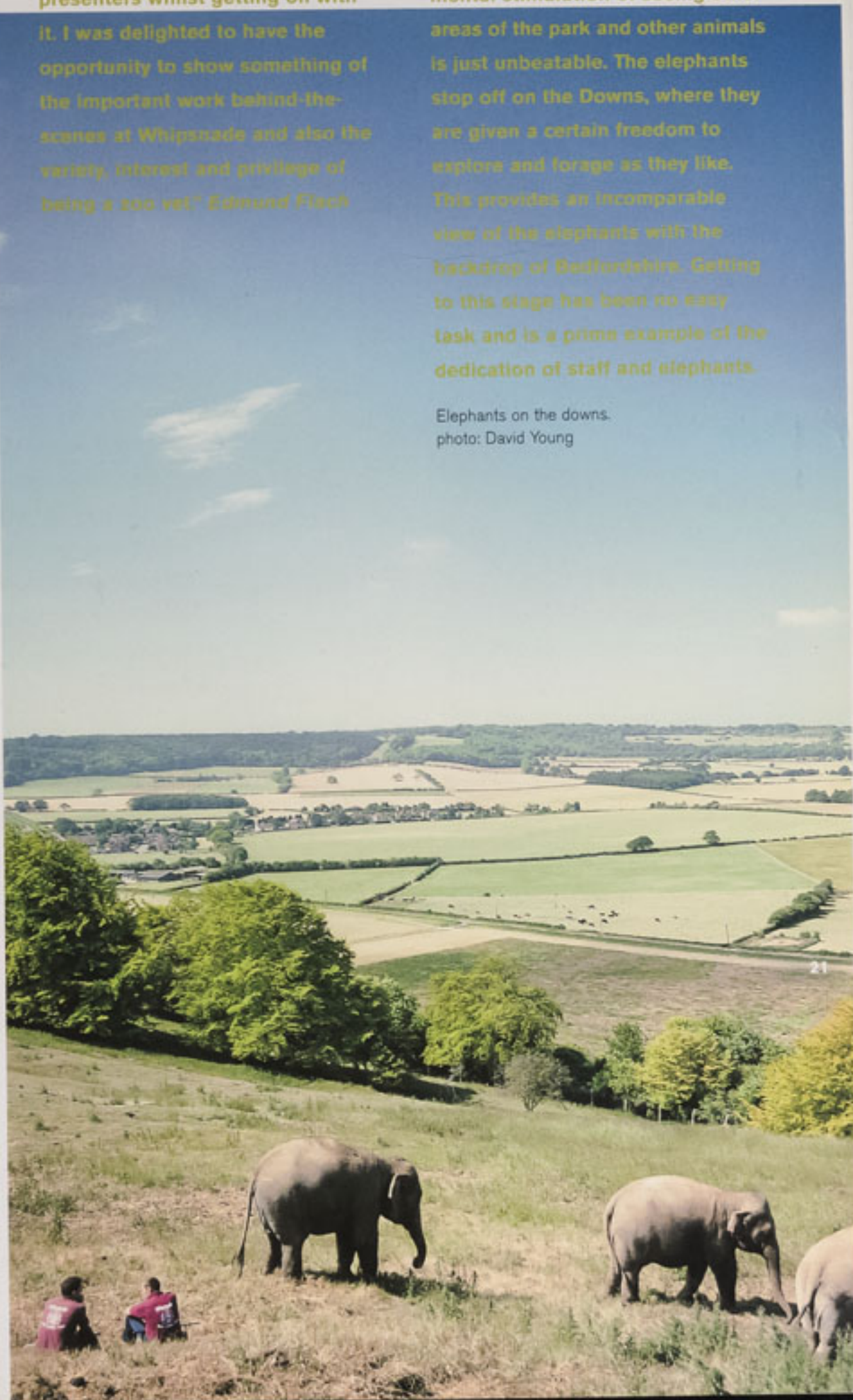
opportunity to show something of the important work behind-the-scenes at Whipsnade and also the variety, interest and privilege of being a zoo vet." Edmund Flach

What do a barrister, a former airline pilot, a photographer and an air traffic controller have in common? A love of steam railways and a willingness to give up spare time as a volunteer on the Whipsnade railway, which carried 140,000 passengers in 1996. "As a barrister who spends long hours in the Crown Court, I find driving steam locomotives at Whipsnade to be the perfect antidote to the tensions of trial work. I have worked with steam for 16 years, and have been a part-time driver for five happy years, three of them at Whipsnade. The real icing on the cake is the very close contact with the animals. There is something new on every trip, and since the animals are used to the train, you often see behaviour that is hidden from the normal visitor. Couple that to the friendly and cheerful team and you should see why I drop my wig and gown with thanks on a Friday, and climb into a boiler suit instead." Brian Payne (front row, centre)

Steam engine *Superior* was built in 1920 for Bowater's line in Kent.

A brisk, two mile walk each day is guaranteed to keep man and beast in relatively good shape. At Whipsnade the elephants get their keepers out for a walk whenever possible and at the same time manage to grab a snack on the way. After over a year of taking the elephants out of their paddock and into areas of the park, they are now walking amongst the traffic on even the busiest of weekends. Obviously the exercise is good for them, but more importantly, the mental stimulation of seeing other areas of the park and other animals is just unbeatable. The elephants stop off on the Downs, where they are given a certain freedom to explore and forage as they like. This provides an incomparable view of the elephants with the backdrop of Bedfordshire. Getting to this stage has been no easy task and is a prime example of the dedication of staff and elephants.

Elephants on the downs.
photo: David Young



INTERNATIONAL ZOO YEARBOOK 35



Sand cats from London Zoo on the jacket of Volume 35 of the *International Zoo Yearbook*.

ZSL's meetings and scientific publications are planned to respond to the needs and interests of both scientists and the general public. Currently there are four series of meetings, all open to the public as well as to ZSL members and staff, aimed at different levels of interest and expertise.

The well-illustrated popular Tuesday Talks covered wide-ranging topics - wildlife and conservation problems of remote parts of the world, forensic zoology, and the natural history of species such as seahorses, dolphins, the bonobo, and British owls. The 1996 Stamford Raffles Lecture, *Gaia & Noah's Ark: Human Responsibilities in Nature*, was given by Sir Crispin Tickell.

Each Scientific Meeting features several speakers who report on current research on different aspects of a particular theme.

Although aimed at a more academic audience, these meetings also attract students and the general public. *Bringing Back the Wolf, Trading in Wild Animals and Human Evolution & Dispersal* proved highly popular and boosted the average attendance at Scientific Meetings in 1996 to more than 100.

The Institute of Zoology's afternoon seminars, held during each academic term, offered a more informal opportunity for visitors as well as staff to hear a speaker and discuss the data presented.

The ZSL Symposia bring together leading scientists from all over the world. We invite experts to present papers at meetings lasting two full days. *Conservation in a Changing World: Integrating Processes into Priorities for Action*, was organised by Dr Georgina Mace, Dr Andrew Balmford and Dr Joshua R. Ginsberg and held jointly with Conservation International. *Social Learning among Mammals*, organised by Dr Hilary O. Box and Professor Kathleen M. Gibson, was held jointly with The Mammal Society and The Primate Society of Great Britain. Both symposia were well attended, the second being fully booked, with almost 300 tickets sold.

The papers given at Symposia are published in the series *Symposia of the Zoological Society of London*. Three volumes were published during the year: No. 68, *The Biology of Xenopus*, edited by Professor R.C. Tinsley and Professor H.R. Kobel, No. 69, *Miniature Vertebrates: The Implications of Small Body Size*, edited by Dr P.J. Miller, and No. 70, *Venomous Snakes: Ecology, Evolution & Snakebite*, edited by Professor R.S. Thorpe, Dr W. Wüster and Dr Anita Malhotra.

Volume 35 of the *International Zoo Yearbook* was prepared for publishing. The cat family is the special topic of Section 1, in which 29 articles reflect increasing concern about the conservation and management of both captive and wild felids. A number of articles assess the benefits of enrichment of captive environments.

The development of assisted reproduction techniques for endangered felids is reviewed. The 16 articles in Section 2, *The Developing Zoo World*, include reports on the establishment of biomedical reference collections and their value to conservation biology. The volume also lists vertebrate species bred in captivity in 1994, a census of rare animals in captivity as at 1 January 1995 and a list of authorised international studbooks and registers.

The *Journal of Zoology* continues to fulfil its role as a monthly international forum for the publication of research papers within the whole field of zoology.

During the year, 162 papers were published, covering topics as widely diverse as the home ranges of leopards in rain forest, genetic resource banks in wildlife conservation, and habitat selection by European beavers. The inclusion of short reports on a number of the lectures given at the Society's Scientific Meetings has been reintroduced. A rigorous selection policy has reduced the time between acceptance of papers and their publication.

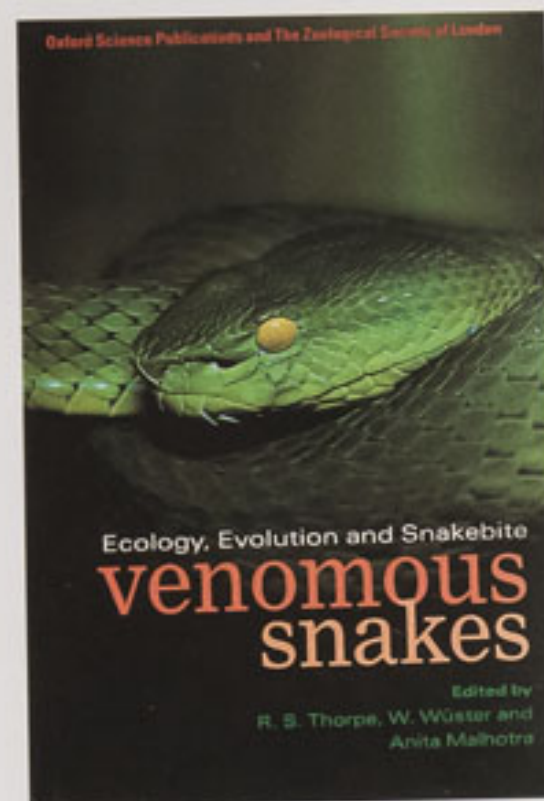
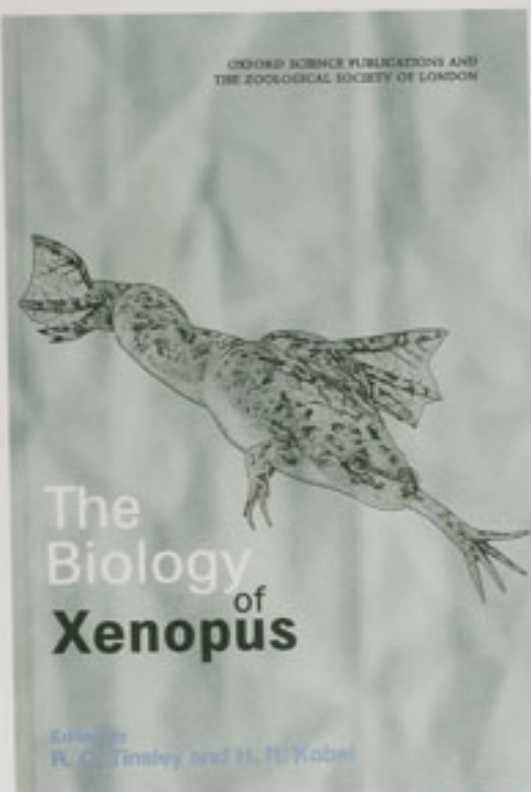
***Zoological Record* Volume 132, indexing 72,000 items of zoological literature, was published jointly with BIOSIS.** Available in print, online and on CD ROM, *Zoological Record* is an annual index, with emphasis on systematics, to the zoological content of books and serials published throughout the world each year.

Work continued on *Nomenclator Zoologicus*, the essential reference work for zoological taxonomists, which gives the name of every genus and subgenus in zoology since 1758, with bibliographical details. Volume 9, covering some 38,000 names assigned in the period 1978-1994, was in proof by the end of the year. Data were provided and processed by BIOSIS in conjunction with ZSL.

Most of the material indexed for these two publications was obtained from the holdings of the Document Supply Centre at Boston Spa and the libraries of the Natural History Museum in London. The generous support of these and other assisting institutions is gratefully acknowledged.




Report of the workshop held in collaboration with WWF and IUCN at the Zoological Society of London from April 29th-May 1st, 1996.



EDUCATION & INFORMATION


Report of the workshop on marine fish Red Listing organised by the Institute of Zoology.

Two volumes in the Society's Symposia series, published in 1996.



Although the media still tend to confuse the different business operations of ZSL and attribute everything to London Zoo, 1996 saw an increasingly high level of understanding of our work at home and overseas, with a great deal of positive coverage on a wide range of stories.

A pregnant male seahorse – a captive breeding programme is an important part of Project Seahorse. photo: Amanda Vincent



Over 20 million seahorses are traded in 39 countries for traditional Chinese medicine every year. photo: Amanda Vincent

It was particularly encouraging that many of ZSL's scientific and conservation activities were widely reported. Richard Kock of Field Conservation & Consultancy was featured in the *Sunday Telegraph* in November and was interviewed by BBC World Service's *Outlook* programme to coincide with his talk at an evening event at the House of Commons hosted by Ken Livingstone MP. Most national newspapers covered the Marine Fish Red Listing Work Group in July. Andrew Cunningham's work on frog viruses continued to be in the news, as did Paul Jepson's work on marine mammal strandings, with BBC *Here & Now* covering the stranding of a harbour porpoise in November. Sarah Cleaveland's work on canine distemper in the Serengeti also hit the news, with Channel 4 devoting a whole programme to her work.

Project Seahorse was launched in July at the same time as the publication of a TRAFFIC report written by Dr Amanda Vincent of Oxford University, and now of McGill University in Canada. Project Seahorse is a ZSL conservation initiative that pulls together work on the management of seahorses by Dr Heather Hall, genetic studies by Dr Helen Stanley and field programmes by Dr Vincent. Dr Vincent's work in the Philippines was featured in BBC's *OED*. Widespread coverage was achieved for the launch of a new adoption scheme for seahorses at London Zoo.

In October, Dr Georgina Mace's work with the IUCN on Red Lists made the front page of *The Independent* and she was also interviewed by BBC *Newsround* and BBC *World Service TV*.

In November, we submitted an application to the Millennium Commission for a £100m National Aquarium to be built in London Docklands. Media activity around the application included a front cover feature in the *Weekend Telegraph*, coverage in *The Observer* financial pages and other mentions in national newspapers and television.

ZOOwatch Live's team from BBC Science and Features returned to Whipsnade to present *Animal Hospital on the Hoof*. This was prime-time television for six weeks, reaching an average of 8.1 million people and outperforming *The Bill*; additional coverage was gained in national and regional press and included the birth of Sparky, a swamp deer born by caesarian section, and Steffi, a giraffe. Bert the vulture and his fear of heights was a real favourite with the British public and the story of his progress ran periodically from the spring onwards in the *Daily Mail*, *The Times*, *The Scotsman*, *The Daily Telegraph* and regional papers from all over the country.

Veterinary work at Whipsnade was also featured with the opening of the John Ellerman Centre, and in a careers section in the *Daily Mail*. The repeat of the TV series *Vets in the Wild* on Channel 4 charted the progress of four veterinary surgeons trained on the former post-graduate course based at Whipsnade.

Dr Heather Hall diving with seahorses in the Caribbean.



Zoostyle, the first fashion show to be held at London Zoo, was attended by HRH The Princess Royal. Photographers caught the formal introduction to Her Royal Highness of Charlotte, the Mexican red-kneed bird-eating spider, resulting in most national newspapers covering the story.

Hari, the Sumatran tiger, born at London Zoo, featured nationally and internationally. Further coverage was obtained when he was introduced to Liffey the dog, his new companion.

The birth of three Kleinmann tortoises as part of the captive-breeding programme received staggering media attention, with pictures appearing in all major regional and national newspapers.

With the licensing of London Zoo as a wedding venue, the first marriage to take place was covered by regional and national media including the *Evening Standard*, *Capital Radio* and *BBC Newsroom South East*.

London Zoo's Children's Committee members continued to be young ambassadors, featuring in their local media and some national media. Thirteen-year-old Laura Hughes from Liverpool and eleven-year-old Anna Stothard from London were interviewed by *Blue Peter* and *Nickelodeon* about Tiger Week in May.

Three turtles that arrived at London Zoo in the 1980s as Customs seizures were moved to Turtle Point in Sea World of Florida, having outgrown their tank. The turtles have settled into their new home at Sea World, with plenty of room to move around and enjoy the sunshine on their sandy beach. *The Times*, *Daily Express*,

The Guardian and others all carried pictures, and Carlton TV's *London Tonight* was broadcast from the Zoo to bid them farewell.

Whipsnade's 65th birthday was celebrated with the reintroduction of lighting around the white lion chalk figure carved into the Downs.

Stuart Earley helped to present the Chiltern Radio *Breakfast Show* whilst the radio presenter became a keeper at Whipsnade for a day. Regional papers covered both stories.

Whipsnade animal stories included brown bears cooling down during the summer with blocks of ice packed with fruit. Dunstable Fire Brigade were pictured on ladders cleaning down the ceiling of the giraffe house, and helping around the park on other projects.

Capital Radio's Chris Tarrant Breakfast Show came live from London Zoo again in September to coincide with the video launch of the animated film *101 Dalmatians*. This tied in with the Zoo featuring in the opening scene of Disney's new live-action feature film of the same story.

Animal adoptions schemes were covered by regional and national media for St Valentine's Day, Mother's Day, Easter, Father's Day and Christmas.



T-shirt designs in aid of Zoostyle: Benny Ong (top), Ally Capellino (centre), John Rocha (bottom).

A close encounter of the arachnid kind - the Princess Royal meets Charlotte the Mexican red-kneed bird-eating spider. photo: Alpha photographic press agency



FUNDRAISING

Fundraising has now been centralised for the whole of ZSL.

Claire Knapton is undertaking this new function as ZSL Fundraising Co-ordinator, reporting to the Director General.

The various business operations previously raised funds independently to support their own projects. The centralised fundraising operation will facilitate a ZSL strategy to raise funds for objectives agreed in advance by all the business operations. This focus and co-ordination will allow us to use resources more effectively to generate more money for all aspects of our work. A three-year fundraising plan will be in place early in 1997.

A significant amount of voluntary income was received in 1996, primarily from legacies, although donations from charitable trusts and individuals amounted to over £100,000. A further £682,000 was received from the estate of John Perry, bringing the total received from this most generous legacy to over £1.7 million. Some £20,000 was received in philanthropic support from companies, while special events raised over £7,500. Over the next three years we will be striving to do even better, publicising ZSL as a charity at the leading edge of animal conservation and providing real value for money donated to us.



John Perry visits London Zoo as a child in 1951.



LZ

LONDON ZOO

In 1996, visitor numbers were similar to those in 1995, after substantial growth in 1993 and 1994. Strong growth is expected to return soon after Easter 1997 when we complete a major development on which we started work in late 1996: the re-opening of the Mappin Terraces. This major piece of construction work has been managed by our own staff.

28



Three young blacktip reef sharks at London Zoo. The trade in shark fins now threatens many shark species. photo: Jean-Luc Bénard

The Site & Services Department also managed the upgrading of the facilities for the Events Department last winter. We improved the comfort

for audiences at the *Animals in Action* show in the Amphitheatre, added a new bird of prey demonstration on the Riding Lawn, and provided extensive new holding facilities. Our visitors now experience shows that rival those to be found anywhere else in the world.

Tigers continue to be a major focus of our activities. During the year, Hari,

the young male Sumatran tiger, was hand-reared at the Zoo, and proved a great attraction to our visitors. He will eventually play a part in the European breeding programme for Sumatran tigers, co-ordinated by London Zoo. Towards the end of the year London Zoo took part in Tiger Week which raised money for tiger conservation in the wild. Our activities generated a substantial proportion of the sums raised around the country; these included an auction of around 60 pieces of tiger art ranging from the output of our children's Tiger Art competition to an original piece by Sir Hugh Casson donated for the event. Our tiger activities continue to be generously sponsored by Esso.

The Christmas promotion for 1996 was highly popular and has set the pattern for the next couple of years.

The children enjoyed meeting Isaac the innkeeper, Amos the shepherd and Melchior the Wise Man 'at home'; they visited Santa's new grotto, and mulled wine and mince pies went down well as usual.

Finally, London Zoo has undergone a departmental reorganisation during the course of the year.

We have reduced the number of departments and focused individual departmental activities more closely on 'business processes' than before. The new Senior Management Team has undertaken serious self-analytical work to improve its performance; 1997 will prove the test of the new structure.



A Sumatran tiger K'Nex style: part of the exhibition of this construction toy, held at London Zoo.

A colourful brochure is mailed out to over 6,300 schools in London and the Home Counties.



Do ferrets bite? A face-to-face encounter at *Animals in Action*.

Dana, the ruffed lemur, is one of many animals in a display of natural behaviour at London Zoo.




WWAP

WHIPSNADE WILD ANIMAL PARK

Whipsnade was 65 years old in 1996. This milestone was marked by the best ever financial year, with record turnover, record surplus and the highest visitor numbers for 21 years. This was the fourth successive annual surplus at Whipsnade and in these four years turnover has increased by over 40%.

FCC

FIELD CONSERVATION & CONSULTANCY



1996 saw major developments within the newly named Field Conservation & Consultancy operation, which manages ZSL's overseas and UK field projects. Our project portfolio expanded considerably with the addition of two EU-funded programmes, one in Sumatra and one in Sinai.

Both projects are being implemented by consortia in which ZSL provides essential scientific and practical expertise. In Sinai, Dr John Grainger from ZSL heads a team tasked with the restoration of the biological and cultural resources of the St Katherine's Protectorate. This is a complex project involving a variety of interest groups in a remote, albeit beautiful, environment. In Sumatra, Dr Kathryn Monk is seconded by ZSL as the Scientific Expert for the Gunung Leuser Management Project. Her remit is specifically to establish the research programme (in collaboration with Indonesian counterparts) which will document and monitor the biological processes of this critically important area.

We also received funding from the Department of the Environment's Darwin Initiative for a three-year programme in Ethiopia. This will use traditional resource management practices to assess the need for a new protected area in the Central Highlands for the conservation of the highly endangered Ethiopian wolf. The Overseas Development Administration (ODA) agreed to support a project in Uganda looking at the integration of the culturally significant Ankole cow into a protected area as a standard management practice.

These projects are all more general than the species-specific work we have undertaken in the past. They demonstrate ZSL's perception of the need to address broader community concerns in ways which seek to achieve conservation benefits that last beyond the lifetime of ZSL's involvement. However, we also continue our commitment to individual wildlife issues. In Kenya, Richard Kock dealt with a variety of issues including an outbreak of rinderpest, translocation of a pack of

wild dogs, continued surveys of distemper in the lions of Masai Mara, and most especially, the successful translocation of 30 hirola, otherwise known as Hunter's hartebeest, to Tsavo National Park. Fewer than 500 of these large antelopes are believed to remain, with the main cause of decline being poaching, loss of habitat and disease. Relocating even 30 turned out to be a politically contentious issue but was highly successful in veterinary terms, as these animals are notoriously sensitive to capture stress.

Our biggest and longest running project - with the Saudi National Commission for Wildlife Conservation and Development - has entered its tenth year.

The gazelles continue to do very well with over 600 living freely in the Empty Quarter and a further 200 or so in the National Ibex Reserve. Now we are looking for additional release sites to build on the existing success. Another major development this year has been the transfer in February of the genetics laboratory and its specialised techniques from the Institute of Zoology to our centre outside Riyadh. In the brief time it has been there, the laboratory has already demonstrated that its work is crucial not only to gazelle taxonomy but also to that of other species such as baboons.



Ethiopian wolf in Afro-alpine ecosystem, Central Highlands.

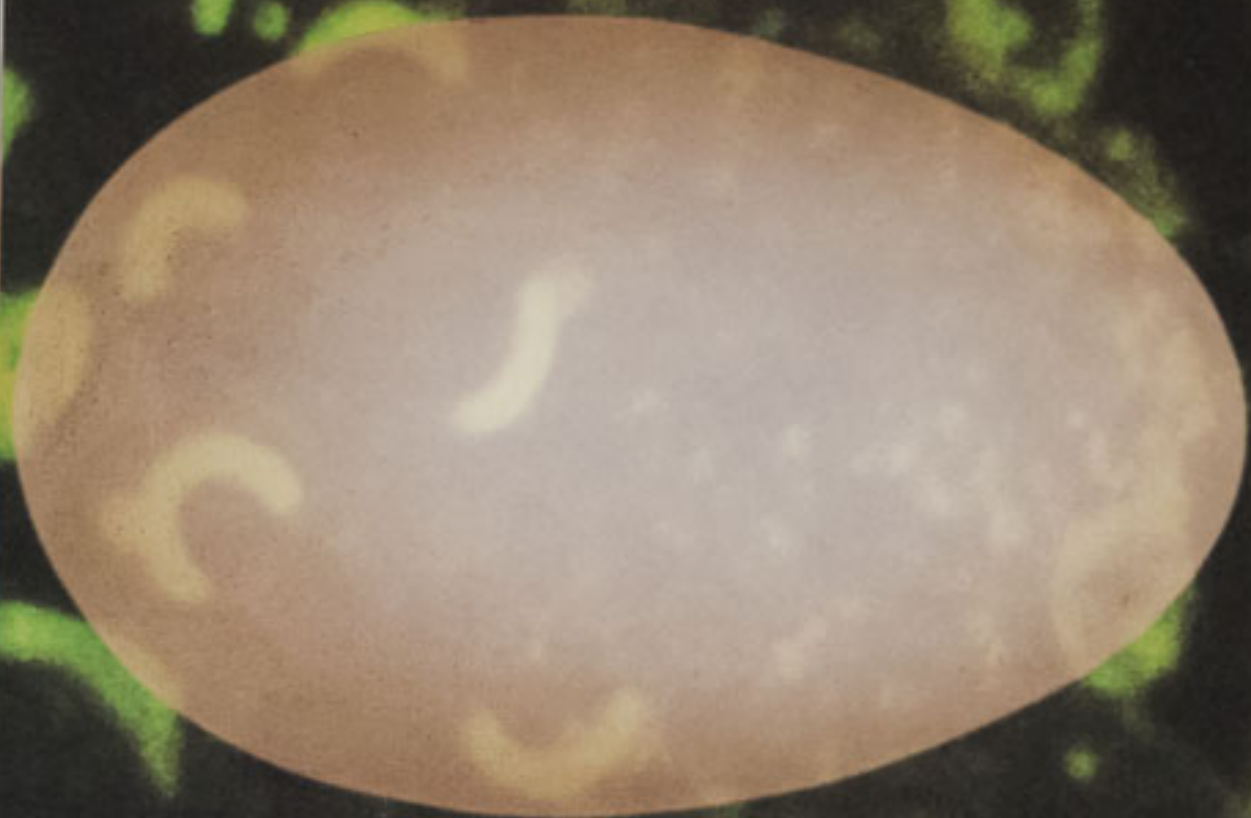
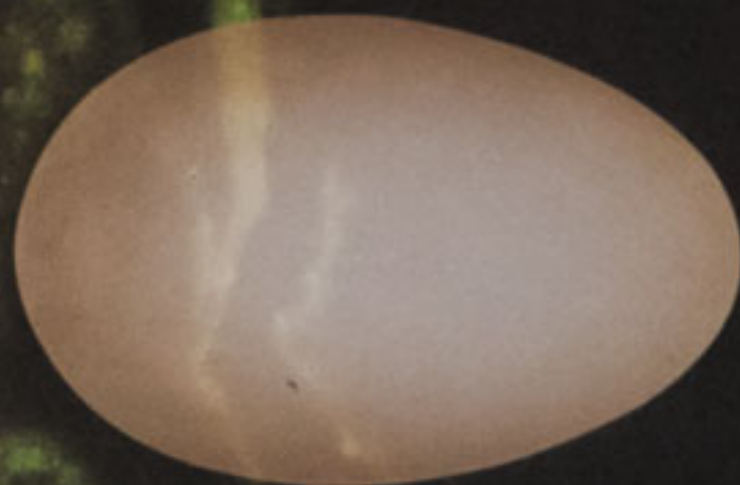
One of the last collared idmi in the National Ibex Reserve; most are now wild-born. photo: Kevin Dunham

Richard Kock with Alexandra Dixon taking samples from a darted lion as part of on-going monitoring of distemper in Masai Mara. photo: Johannes von Schwarzenberg



IOZ

INSTITUTE OF ZOOLOGY



For the third year running, the Institute achieved an operational surplus. This consistency, the result of careful financial management, provides the opportunity for our scientists to carry out their vital research in an environment of financial stability. Such stability is critically important as the Institute continues to establish itself as a leading centre for the study of conservation biology. An account of the Institute's work is presented in *Science for Conservation*.

The Institute achieved a Grade 4 in the 1996 Research Assessment Exercise, which is an evaluation of

research quality by the Higher Education Funding Council for England. This result is an improvement on the Grade 3 obtained in 1992 and is a highly creditable achievement given that over the last four years we have been involved in a major process of change. The grade means that our research is virtually all rated of national importance and at international level in some areas.

The Institute continued to win research grants and contracts in an increasingly competitive world.

Dr Mike Bruford has won a major European Commission grant to work on the genetic diversity of cattle, sheep and goats. The research is part of a Europe-wide collaboration with five other institutions. It is worth £208,000 over three years and will fund a post-doctoral geneticist (Dr Kate Byrne) and a PhD student (Saffron Townsend). It also includes part of the cost of a new DNA sequencer, the balance of which has been provided by ZSL. Dr Bill Holt and his colleagues have been awarded a contract by the Ministry of Agriculture, Fisheries & Food for work on the enhancement of sperm survival. This work, which will be carried out by Dr Alireza Fazeli, is being done in collaboration with the Royal Veterinary College and is worth £140,000 to the Institute over three years. Grants and contracts build on our core funding of £1.5 million per annum which is provided by the Higher Education Funding Council for England.

The Institute places great importance on its programme of graduate training. Six out of our 26

PhD students completed and submitted their theses during 1996. Topics ranged from competition between Grevy's zebra and domesticated livestock in Kenya, to reproductive technologies in red deer, and the epidemiology of rabies in domestic and feral dogs in Tanzania. Our students also include visitors from abroad who work with us to study animals in the Society's collections or to make use of expertise in our research groups: one student from Erlangen University in Germany is studying the behaviour of the free-ranging population of maras at Whipsnade. All 10 students on the 1995-96 MSc in Wild Animal Health achieved passes. The prize for the best results in 1994-95 (donated by Mazuri Zoo Foods, and awarded a year in arrears because of the timing of the exam results) was won by Paul Holmes.

The John Ellerman Centre, our veterinary hospital at Whipsnade, was completed on time and is now in full use. Previously, our veterinary

hospital at Whipsnade was in a poor state of repair. Thanks to the generosity of the John Ellerman Foundation, the Steel Charitable Trust and others, we have built a splendid new hospital which provides facilities for the veterinary care of the animals in the collection at Whipsnade. Donations of surplus operating theatre equipment by Bedford Hospital have helped to equip the new centre. The building was officially opened by Mr Dennis Parry of the John Ellerman Foundation in August 1996.



The Institute of Zoology's scientific report for 1996.

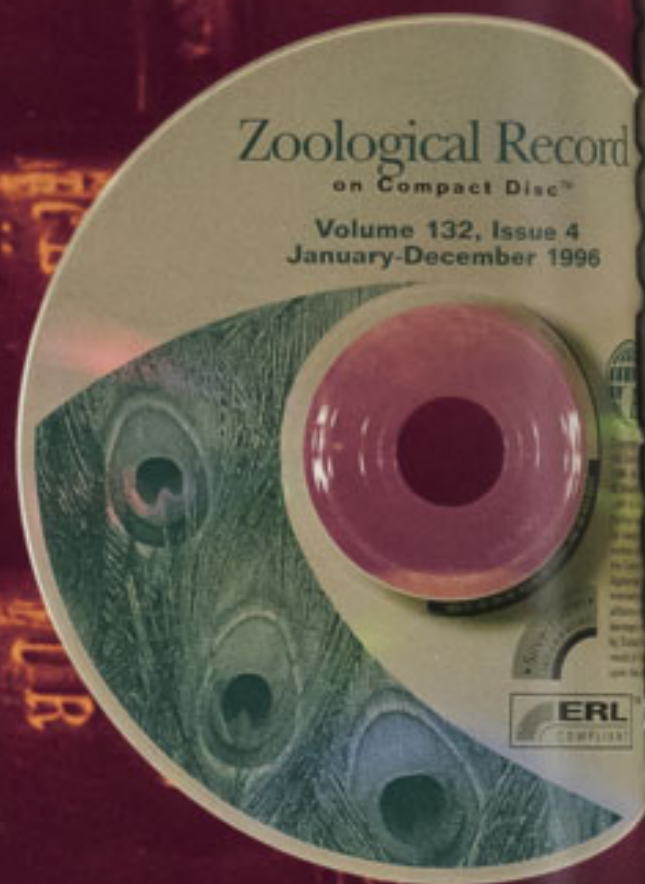
John Ellerman Centre, the new veterinary hospital at Whipsnade.

As part of a survey of bird communities in the transitional areas between rainforest and savannah (known as ecotones) in Cameroon this tooth-billed barbet was caught and ringed.



F&L

FELLOWSHIP & LIBRARY



At the end of 1996 there were 3,101 Fellows. Of these, 72 have joined the new scheme which is essentially a core Fellowship and which provides the opportunity to join Lifewatch and Friends of Whipsnade Wild Animal Park at a special Fellows' rate.

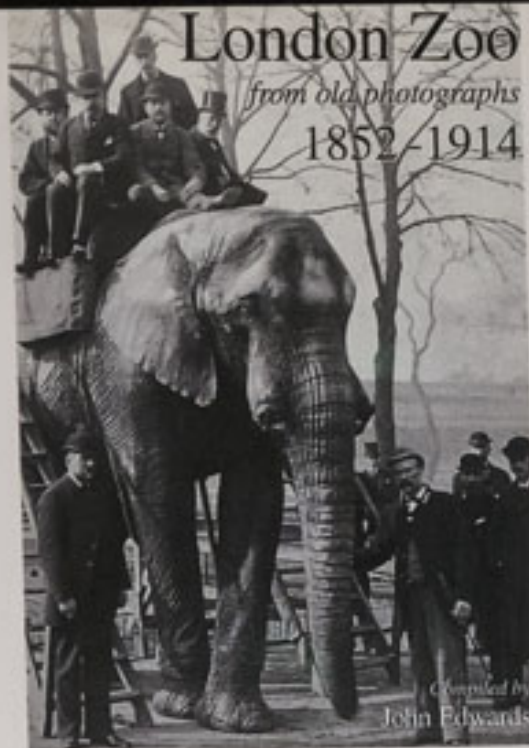
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Zoological Record
on Compact Disc™

Volume 132, Issue 4
January-December 1996



John Edwards's fascinating compilation of early photographs includes rare examples from ZSL's extensive photographic archive and from the Royal Collection.



The number of Fellows who have joined the new scheme is very encouraging as it has not yet had an official launch. New presentation folders have been designed and produced, featuring an eye-catching illustration by James Marsh.

In 1996 Patsy Conway retired after 14 years as Fellowship Officer; she will have been well known to Fellows by name, if not by face. Marion Hoyland joined in September in the new role of Fellowship Services Manager.

A series of Fellows' Evenings proved very successful. The events have enabled Fellows to meet one another and enjoy some excellent presentations by staff on various topics. These will be continued in 1997, hopefully attracting an even greater attendance by Fellows.

The Fellows' Newsletter is still being produced entirely by voluntary labour and provides a valuable link with ZSL's work for many Fellows who live either overseas or too far away to be able to travel to visit our collections.

The Library continues to maintain its pre-eminence as the largest collection of zoology books in private ownership in the country, much of the material being available for Fellows to borrow.

Over 5,400 people visited the Library and 2,600 enquiries were received from the general public. We added 680 new books, many of these being received as donations.

The Library's strategy and collection policy underwent extensive review by a team consisting of Peter Olney, Director of the Federation of Zoological Gardens and Senior Editor of the *International*

Zoo Yearbook, Dr Beryl Leigh, Head of Reference Services, Science Reference Information Service, and Ann Sylph, Librarian for the Society. As part of the process, a questionnaire was distributed amongst Fellows and other users to assist in an analysis of Library use.

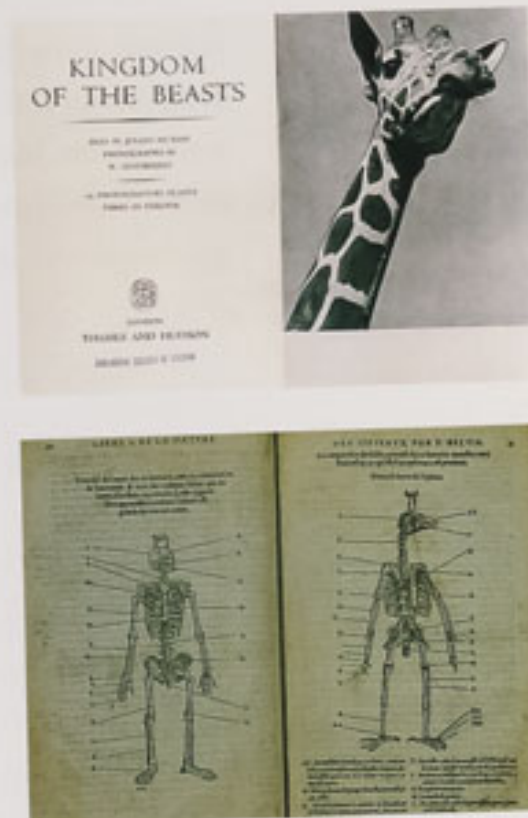
The Review Team recognised the integral role of the Library in supporting the Society's mission and objectives as an educational charity. Its strengths include the combination of scientific and more general material about animals, the wide range of material available for loan, and the unique and extensive collections, with as much as possible available on open access.

The team concluded that the Library should have a clearly defined subject-scope and suggested subject headings 'core' to the collection and associated subjects. Now that these have been established, guidelines for new acquisitions and management of the existing collection can be reviewed and re-focused. The review provides options for a Library which continues to pursue the mission of the Society. We organised evening tours of the Library for Fellows and Lifewatch Members. Participants were invited to view items from the archives, rare books, photographs and paintings. A 'themed tour' was also held - *Images of Mammals Through the Ages*. Three tours were also given to London Blue Guides. Tony Swann presented a Tuesday Talk on the theme of *Great Zoological Books*, drawing on the Library's collection to illustrate his talk. Subsequently, he produced a lavishly illustrated booklet based on his talk and the Library held a follow-up tour.

A grant from the Lord Zuckerman Memorial Fund allowed new air conditioning and dehumidifying

equipment to be installed in the Library's strong-room where many of ZSL's rare books, paintings and archives are stored. This new plant maintains humidity and temperature, and so helps to conserve these rare documents. A team of volunteers cleaned and carried out minor repairs to the books held there.

The Library participated in the exhibition, organised by the Royal Borough of Windsor and Maidenhead, to mark HRH The Prince Philip, Duke of Edinburgh's 75th birthday in June. The exhibitors borrowed a selection of ephemera from the Society's archives showing his involvement with ZSL as President from 1960-1977.



Visitors to the library have access to around 200,000 books dating back to 1500. *Kingdom of the Beasts* 1956. photo: W. Suschitzky. Comparison of human and bird skeleton, Pierre Belon 1555.

TREASURER'S STATEMENT

The attached summarised financial statements show the overall results of the Society for the year to 31 December 1996. The Society achieved a surplus of £1,127,000 for the year and increased its total funds to £15,728,000, a further satisfactory performance, although the result was largely influenced by the receipt of further funds (£682,000) from the estate of John Perry.

The results for 1996 are not directly comparable with those of the previous 9-month period which excluded the winter months when visitor numbers to the Zoos are low.

Whipsnade achieved a highly satisfactory result with a surplus of £691,000, mainly due to increased visitor numbers (from 423,000 to 475,000) and higher visitor spend. This result was not matched by London Zoo where visitor numbers fell slightly (from 984,000 to 947,000) and sponsorship and fundraising did not meet expectations. The Institute of Zoology achieved a successful result through careful management of costs. Field Conservation & Consultancy was at break-even and the Learned Society showed a small surplus for the year.

Capital expenditure for the year was approximately £1,900,000, a major increase on the prior period. Major projects included:

- the new Asian Elephant House at Whipsnade**
- preliminary work on the biodiversity centre at Regent's Park**
- work on the Mappin Terraces**
- renewal of perimeter fencing at Whipsnade**
- completion of the John Ellerman Veterinary Centre at Whipsnade**

Funding for capital expenditure came primarily from surpluses generated in the preceding period and from the positive cash flow achieved on operations. The Perry bequest money has been retained to boost central resources but will be loaned to operating divisions if the need for central financing of capital projects arises.

The Society's bid for Millennium Commission funding to build a national aquarium has not succeeded for the moment and we have written off the cost incurred to date of £152,000. Progress has been made on the funding of the biodiversity centre, now to include part of the invertebrate collection; the Society expects to raise sufficient funding to limit its borrowing to £1 million, which will be repayable over six years from the completion of the building. The lease of the Regent's Park site is now expected to be finalised shortly and will not include all of the onerous clauses relating to the property.

The Society has again demonstrated a sound financial result in 1996. Funds have further increased and a good start has been made in upgrading buildings both at Whipsnade and Regent's Park, funded from the positive cash flow. The Society also hopes for a successful outcome to negotiations on its liability to VAT which would provide a major financial boost to its revenues. It remains, however, indebted to members and donors for their support in order to maintain and improve its facilities and services in the public interest.

Harry Wilkinson FCA
Treasurer

SUMMARISED ACCOUNTS FOR 1996

Consolidated Statement of Financial Activities for the year ended 31 December 1996

	12 months to 31.12.96 £000	9 months to 31.12.95 £000
Operating Income		
Visitor Admissions	7,088	5,652
Catering and Shops	3,487	2,750
Less: Cost of Goods Sold	(1,231)	(972)
	2,256	1,778
Other Zoo Operating Income	856	601
Government and other Grants	2,323	1,720
Sales and Fees	661	389
Subscriptions	189	112
Donations and other Income	664	603
Total Operating Income	14,037	10,855
Operating Expenditure		
Staff Costs	7,440	5,305
Animal Foodstuffs	419	281
Repairs and Maintenance	375	336
Depreciation	954	630
Release of Capital Grant	(14)	(9)
Utilities and other Overheads	2,352	1,599
Publicity and Advertising	1,087	1,156
Administration	1,458	915
Total Operating Expenditure	14,071	10,213
Operating (Deficit) / Surplus for the year / period	(34)	642
Income from Investments	105	112
Interest Receivable	328	299
	433	411
Surplus for the year / period before Exceptional Items	399	1,053
Exceptional Items		
Capital and Major Donations	709	1,051
Grant application costs	(152)	-
Surplus on Sale of Assets	41	29
Transfer from Deferred Liabilities	-	317
Unrealised Gain on Market Value of Investments	130	128
	728	1,525
Surplus for the year / period	1,127	2,578
Total Funds balance brought forward	14,601	12,023
Total Funds balance carried forward	15,728	14,601

Cash Flow Statement for the year ended 31 December 1996

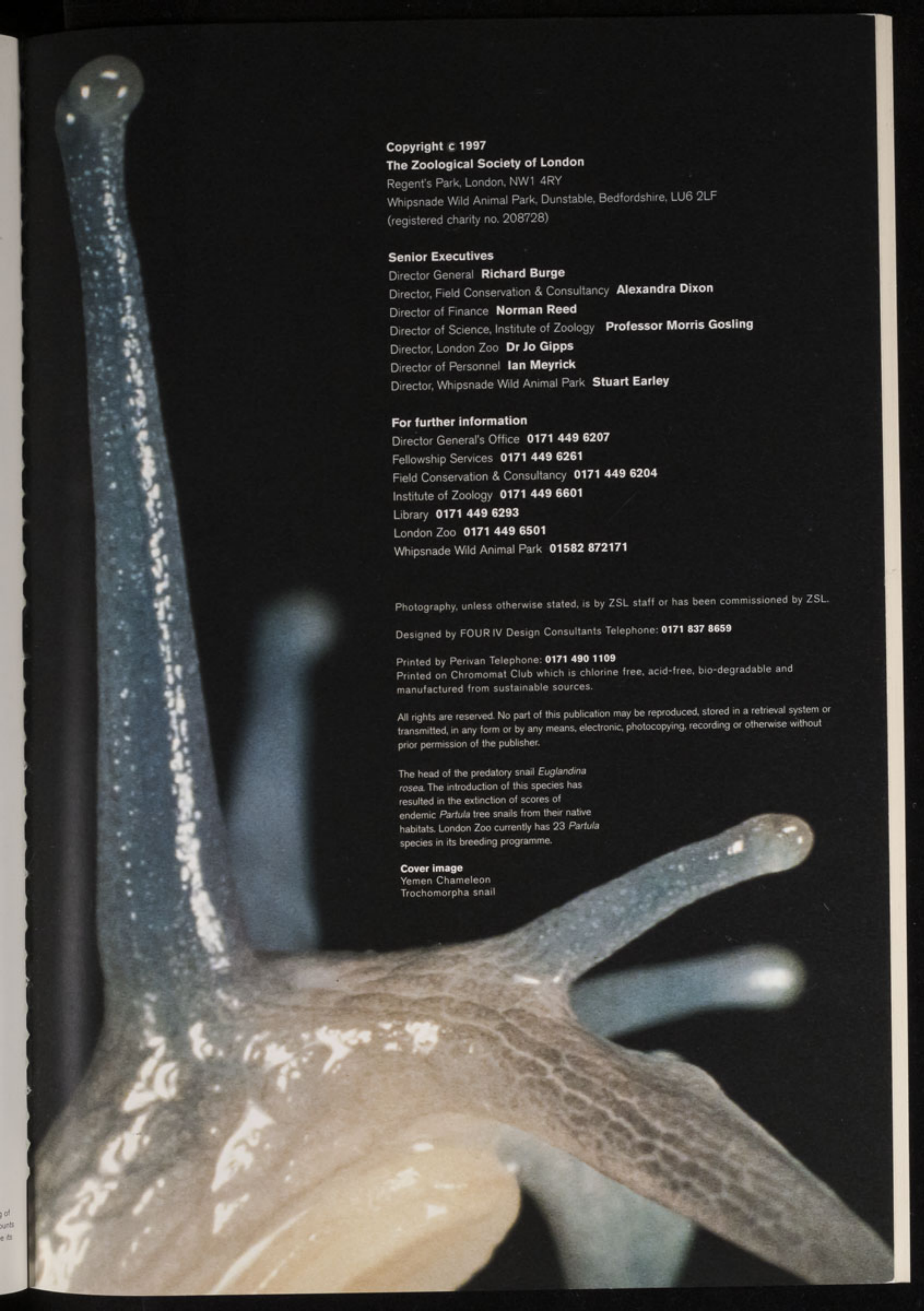
	12 months to 31.12.96 £000	9 months to 31.12.95 £000
Surplus from Operations	399	1,053
Exceptional Items	728	1,525
Surplus for the year / period	1,127	2,578
Add Back Depreciation	954	630
	2,081	3,208
Less Purchase of Fixed Assets (Net)	(1,839)	(895)
	242	2,313
Changes in other Assets and Liabilities	(100)	(694)
Net Cash Inflow	142	1,619

**Revenue Account by
Division for the year
ended 31 December 1996**

	12 months to 31.12.96 Surplus/ (Deficit) £000	9 months to 31.12.95 Surplus/ (Deficit) £000
Divisions:		
Zoological Gardens	(99)	295
London Zoo	691	717
Whipsnade Park	<u>592</u>	<u>1,012</u>
Scientific:		
Institute of Zoology	78	46
Capital receipts	201	-
Field Conservation and Consultancy	-	3
Learned Society	<u>42</u>	<u>(22)</u>
	<u>321</u>	<u>27</u>
Endowment Funds	54	48
Other Designated Funds	159	1,556
ZSL Development Trust	<u>1</u>	<u>(65)</u>
	<u>214</u>	<u>1,539</u>
Surplus for the year / period	<u>1,127</u>	<u>2,578</u>

**Consolidated Balance Sheet
at 31 December 1996**

	31.12.96 £000	31.12.95 £000
Fixed Assets		
Tangible Assets	8,390	7,486
Investments	<u>2,003</u>	<u>1,772</u>
	10,393	9,258
Current Assets		
Stock	383	368
Debtors	945	941
Cash at Bank and in Hand	<u>6,302</u>	<u>6,160</u>
	7,630	7,469
Creditors: Amounts falling due within one year	<u>(2,043)</u>	<u>(1,825)</u>
Net Current Assets	5,587	5,644
Deferred Liabilities:		
Amounts falling due after more than one year	<u>(252)</u>	<u>(301)</u>
	<u>5,335</u>	<u>5,343</u>
Net Assets	<u>15,728</u>	<u>14,601</u>
Funds		
General	11,564	10,651
Endowment	543	489
Other Designated	<u>3,621</u>	<u>3,461</u>
Total Funds	<u>15,728</u>	<u>14,601</u>



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The Zoological Society of London

Regent's Park, London, NW1 4RY

Whipsnade Wild Animal Park, Dunstable, Bedfordshire, LU6 2LF
(registered charity no. 208728)

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Director, Field Conservation & Consultancy **Alexandra Dixon**

Director of Finance **Norman Reed**

Director of Science, Institute of Zoology **Professor Morris Gosling**

Director, London Zoo **Dr Jo Gipps**

Director of Personnel **Ian Meyrick**

Director, Whipsnade Wild Animal Park **Stuart Earley**

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Designed by FOUR IV Design Consultants Telephone: **0171 837 8659**

Printed by Perivan Telephone: **0171 490 1109**

Printed on Chromomat Club which is chlorine free, acid-free, bio-degradable and manufactured from sustainable sources.

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The head of the predatory snail *Euglandina rosea*. The introduction of this species has resulted in the extinction of scores of endemic *Partula* tree snails from their native habitats. London Zoo currently has 23 *Partula* species in its breeding programme.

Cover image

Yemen Chameleon
Trochomorpha snail

