

Editorial

This issue is the final part of the first volume of *The Linnean*. In it we have included information on the running of the Society, partly for the benefit of new Fellows, but also in the hope that it may stimulate more of you to participate in the Society's affairs.

The first historical article concerns Smith's acquisition of Linnaeus's Collections in 1784. By this purchase James Edward Smith became a figure of world importance in natural history, a position he further enhanced in 1788 by founding the Linnean Society of London in association with six others. On Smith's death in 1828 Linnaeus's Collections were purchased by the Society, and many years later Smith's own letters, some 3000 in all, were presented to the Society by his widow. Dr James Smith was a keen entomologist and an able botanist. His own major enterprise was the writing of *English Botany*, illustrated by James Sowerby (with more than 2500 drawings). This work was published in 36 volumes between the years 1790 and 1814. Smith did not participate in the first three volumes and so the work is usually cited as Sowerby & Smith.

The second article relates to F. O. Bower's appointment to the Glasgow Chair of Botany in 1885. Bower must have found the atmosphere at Glasgow stimulating, for not only did he publish several classical botanical text-books, but he also produced numerous scientific papers of which those on the interrelationships of seed plants have recently been supported by cladistic analysis (Crane, 1985). Of the unsuccessful candidates for the post, William Ramsey McNab remained Professor of Botany at the Royal College of Science, Dublin, whereas Harry Marshall Ward first became Professor of Botany at The Royal Indian Engineering College, Cowper's Hall, Surrey and then Professor of Botany, Cambridge (1895–1906).

The final article concerns the mammal collections on show at the British Museum (Natural History) which are being reorganized so that the fossil and extant forms may be exhibited together for the first time. The palaeontological and zoological displays have remained separate from the outset following Owen's proposal that they should be housed on the ground floor of the east wing. It is astonishing that it should have taken over 100 years for this prejudice to have been overcome.

Presidential message

As I take over the Presidency of our Society from my predecessor, Professor Sam Berry, it seems a good opportunity to offer a message to the great majority of Fellows who could not get to Burlington House for our Anniversary Meeting (and so incidentally, could not participate in our election procedure!). I am fortunate in that for the first time as an incoming President, I have the medium of *The Linnean* in which to send such a message. This is an important (but not the only) symptom of a new outward-looking spirit in the Society, which Sam Berry did much to promote. Other important developments in the same vein, which he helped to foster, include the growth of our closer liaison with the British Ecological Society and the Society for Experimental Biology and a connection with the Mammal Society. We have long been associated with the Systematics Association and are forging closer links with them. These are

important indications of our concern for the well-being of biology as a whole, and the need for biologists to collaborate in furthering our common ends.

The holding of more meetings in the regions has been an important development in extending the participation of Fellows who work and live well away from London. The recent meetings at Keele, Oxford and Southampton are instances of this, and forthcoming regional meetings on Malham Tarn and on the Shropshire Meres are advertised in this issue.

Thanks mostly to the efforts of our Treasurer and the Finance Committee I take over at a time when our financial affairs are in reasonably healthy shape. The plans for our Bicentenary celebrations (of a scientific nature!) in 1988 will involve us in considerable expenditure, which we hope will be largely met by various fund-raising activities, but which will need your help. The refurbishing of our meeting room, and improvements in the housing of the collections are also under way.

But in a period of looking back reflectively over 200 years of achievements and activity it is vital that we look to the future, too. Biologists don't need reminding that the future health of the Society rests in the hands of its youngest Fellows. The employment and other economic prospects for young professional biologists are at a low ebb. It is important for the future well-being of our Society that we do everything we can to defend their interests and expectations, and facilitate in every possible way their participation in activities which may further their career opportunities. Recruitment of the younger generation and encouragement of their active participation in our meetings are vital to our survival.

W. G. Chaloner
31 May 1985

SOCIETY NEWS

Important Notices

The Bicentenary—Fund-Raising

The matter of raising funds as one of the activities for the bicentenary is now being finalized. Whilst we intend to call on the expertise of professionals, when required, we nevertheless must have help from inside the Society—from the Fellowship. Previous experience is not essential but drive and enthusiasm certainly are! Secretarial and financial support will be available. If you are interested, please let the office know.

Specialist Group—The Freshwater Group

Council has approved the formation of The Freshwater Group, to be run by the London Freshwater Group, to act as a forum for the varied disciplines which come together in the study of the biology of fresh waters. Communication will be largely by informal scientific meetings and discussions, with occasional site visits. The likely range of subject matter will include taxonomy/morphology, physiology, species and community ecology, the use and management of freshwater resources and environmental aspects of these such as pollution, and tropical limnology. It is hoped that participants will include not only biologists but also chemists, hydrologists and engineers. Enquiries should be addressed to

Dr K. T. O'Grady, Water Research Centre, Conservation and Fisheries Management, Medmenham Laboratory, P.O. Box 16, Marlow, Buckingham SL7 2HD.

Room Closure

The Rooms will be closed over the festive season from **23 December 1985** to **1 January 1986**.

Addresses for the redirection of Journals

Fellows should note that the instructions about notifying changes of address on the inside covers of the journals refer to **subscribers**. As members of the Society are not subscribers in this sense you should ignore those instructions and notify all changes of address to Burlington House in the normal way.

Deadlines

The closing dates for material for *The Linnean* are **10 December 1985** for the March issue, **17 April 1986** for the September issue, and **25 August 1986** for the December 1986 issue.

Notes

Preamble

Those of you who have been Fellows for some while, and especially if you have been on Council or an Officer or Editor will be well aware of many of the notes and notices we put in this section of *The Linnean*, the Newsletter. We feel, nevertheless, that it is time we explained to the Society as a whole some of the matters affecting the way the Society conducts its affairs.

From its earliest days, and the Royal Charter was signed only 14 years after it was founded, the Society has been international in its outlook and interests as well as in its membership. This is reflected both in the importance attached to maintaining links with our 50 Foreign Members, and the close contacts we try to maintain with the 750 Fellows who live outside the United Kingdom. (We use this distinction as it avoids us having to distinguish between U.K. nationals living abroad, members of the Commonwealth and foreign nationals—quite apart from being an easy figure for our computer to pick out!) We are therefore keen to involve members, wherever they live, in the business of the Society.

As this Newsletter, by including the Proceedings, has to be regarded as archival material, yet also has to explain matters of importance or current interest to the steady stream of newly elected members, we have to walk a narrow path between being either pedantic and stuffy or apparently frivolous and repetitive.

It is our aim to bring matters to your notice in a certain amount of detail on the first occasion, and subsequently only to allude to them by way of reminders when necessary. Please see the next two notes, especially.

Who runs the Society?

The Bye-Laws (Ch. 9, Sect. 2) make it clear that any Fellow may be nominated to stand for election to Office or to the Council, provided he is

properly proposed. In recent years however, very few if any nominations have been made other than by the Council itself. With such a wide, international franchise and with Council's necessarily somewhat restricted knowledge of available talent, it very much welcomes proposals by the Fellowship, particularly for the five regular annual replacements on Council.

For the required ballots to occur at the Anniversary Meeting in May, Council has to confirm the nominations at its meeting in March and, in case some nominees decline to stand when approached, initially to consider them when it meets in January. It is therefore necessary to receive any proposals you may wish to make annually by the beginning of the year.

Honours and Awards

You will realize from the Agenda of the Anniversary Meeting in the Spring issue that the Society makes a number of awards each year. Again it is open to the Fellowship to make recommendations for these, as well as to sign Forms of Recommendations for Foreign Membership (on the special Forms held in the Office). Council also considers all these in January.

Closing Date

Recommendations and proposals for any of the above for next year should be made, in confidence if necessary, to the Executive Secretary by 2 January 1986.

Research Grants

In looking at this year's applications, the Grants Committee was conscious of the need fully to support the events being planned for the Bicentenary, particularly the proposed expedition to Australia. This led it to be more ruthless than ever in its assessments. The Committee also affirmed that the Society would not normally support student expeditions unless there was clear evidence of well-directed research associated with them. This was not to ascribe a judgment on the motivation of applicants or on their competence, but an assertion that as Trustees, on behalf of the Society, they had to ensure that the limited funds were spent as usefully as possible.

The Grants Committee, whilst not wishing to stop all grants, intends to allow the relevant Funds to accumulate. Applications should therefore continue to be made, but there can be no guarantee that all or indeed any will be entertained for the next two years.

To enable decisions to be made annually in good time, the closing date for applications to the Appleyard and Bonhote Trust Funds, details of which are in *The Linnean*, 1(4), and which may also be obtained from the Office, has been advanced to 31 December.

Pounds Sterling or Dollars

Naturally we run the Society's finances in pounds sterling but as the majority of our Fellows who live abroad are west of the Atlantic, we also maintain a U.S. dollar account with the Society's Bankers, Lloyds Bank plc, here in London. If, therefore, you are in a dollar area and are not already doing so, you may find it easier to pay your Annual Contribution and other bills in dollars using the rate of exchange applicable at the time of payment—but only U.S. dollars please.

Long Term Finance

Many of the Fellows will know how well the Society has been helped in the past, and how it continues to benefit from legacies and bequests from many sources, mostly from the Fellowship.

This note is written to bring to your notice facts with which you may once have been familiar, but might possibly have overlooked.

Firstly, being a charity, any money left to the Society is not subject to the Capital Transfer Tax regulations. An Estate's liability is therefore reduced by the amount bequeathed, and so any personal beneficiaries, spouses excepted, although not so well endowed will be relatively less penalized than might at first glance be expected.

Secondly, any money which you might consider bequeathing has to be used for the purpose, and only for the purpose described in the wording of the bequest. It is therefore most important that the wording, whilst meeting the wishes of the benefactor, is not so restrictive that the money, either capital or even possibly income, can in years to come be almost, if not totally, inaccessible. We would therefore suggest that if you are in any way thinking of passing something on to the Society either as a lifetime gift or as a legacy, the greatest satisfaction to yourself and benefit to the Society will be achieved if you discuss your intentions with the Executive Secretary or Treasurer before drawing up the necessary papers.

Thirdly, certain Learned Societies and other charitable bodies have, in recent years, been able to effect a most sensible scheme of charitable bequests by a number of like-minded generous people acting in concert. This depends on taking advantage of the tax laws relating to charities, an age spread amongst the donors, and an intention to establish a series of Trusts from which in due course the organization can draw a regular and hopefully, increasing income. Should anyone be interested in participating in such a scheme they are requested to write personally and if preferred, in confidence, to the Treasurer who will explain the details.

Personalities

Dr William Stearn: This year's anniversary meeting marked the retirement of William Stearn from the Curatorial Committee. Dr Stearn has been a member of that committee since 1959 and its Chairman since 1968. His knowledge of the Linnaean Collections (both books and specimens) is encyclopaedic and his day to day expertise will be sadly missed.

Elected F.L.S. in 1934, William Stearn has been one of our most stalwart members for more than 50 years. He served on council from 1959 to 1963, was a Vice-President in 1961–2 and President 1979–82. He is an outstanding scholar (his publications number over 370 papers) and a mine of information on plants and their distributions, their names and cultivation and on the history of gardens, gardeners and botanists. Besides the Linnaean Gold Medal he has been awarded the Victoria Medal of Honour from the Royal Horticultural Society, the Linnaean Medal from the Royal Swedish Academy and the Chicago Horticultural Society Silver Medal. He is a Knight of the Polar Star, has received honorary doctorates from Cambridge, Leiden and Uppsala and is a foreign member of the Royal Swedish Academy of Sciences. We sincerely hope that he will continue to be active in the Society and will attend our meetings for many years to come.



William Stearn examining Linnaean specimens in the Society's rooms.

New Symposium Volume

Ecology and Genetics of Host-Parasite Interactions—Eds Rollinson, D. & Anderson, R. M., 1985, 265 pp. Academic Press. This volume contains the papers presented at an International Symposium organized by the Society and the British Society for Parasitology held at Keele University, 12–13 July 1984. Normal retail price £35, special price to Fellows £23. Cheques should be made payable to Academic Press.

Society Representation on other Bodies

Apart from its multifarious connections through Fellows with dual memberships, the Linnean Society is represented officially on the following: Biological Council, British National Committee for Biology, British National Committee for Oceanic Research, Exeter University Court, Field Studies Council, Field Studies Council AIDGAP, Lawes Agricultural Trust, National Trust, Percy Sladen Memorial Fund.

Your representatives can both brief the Society on the activities and affairs of these bodies which will be of general interest, and also make known the views of the Society to them when appropriate. In the former case, as below, we will publish these briefs. In the case of the latter, Fellows are asked usually to make their points in writing to the Office so that they can be discussed by the Officers, Council or appropriate Committee prior to their being raised externally. Private enquiries can, of course, be directed to the representative concerned.

British National Committee for Oceanic Research

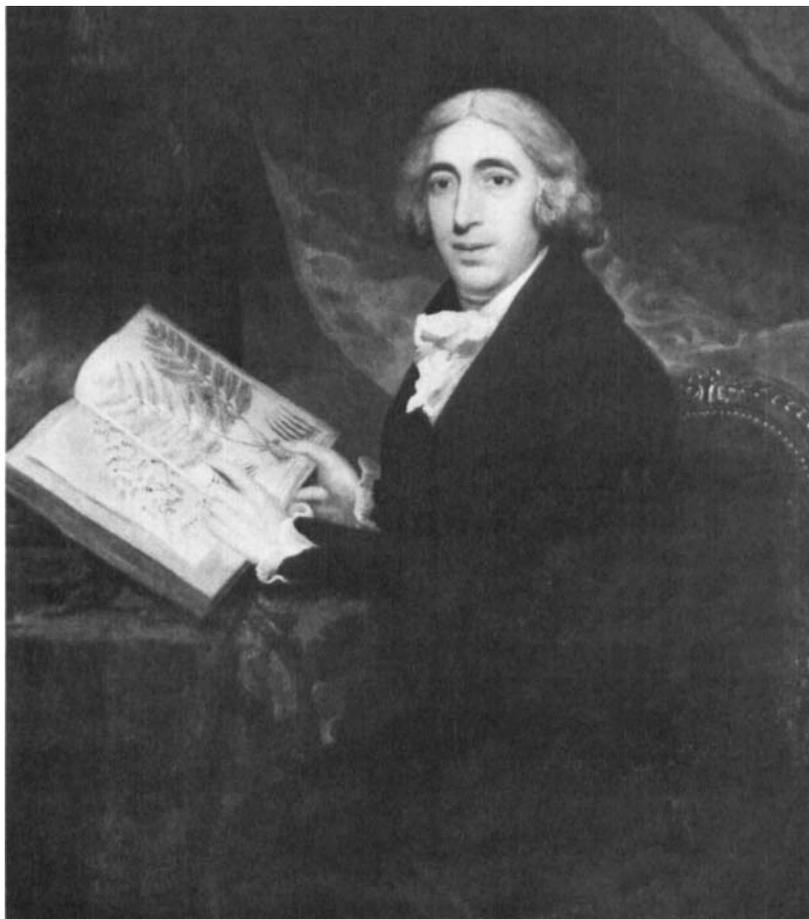
Five new SCOR working groups have been formed. These are: WG78 Determination of Photosynthetic Pigments in Seawater, WG79 Geological Variations in Carbon Dioxide and the Carbon Cycle, WG80 Effects of Hydrothermal Processes in the Ocean, WG81 Deep Water Palaeo-oceanography, WG82 Polar Deep Sea Palaeoenvironments.

Seven further working groups now under active consideration will cover: Ocean Palaeodepth Indicators, High Resolution Event Stratigraphy, Feasibility of Arctic Deep Sea Drilling, Role of Phase Transfer Processes in the Cycling of Trace Metals in Estuaries, Experimental Estuarine and Coastal Ecosystems, Importance of the Island Mass Effect on Tropical Coastal Zone Productivity, Data Assimilation in Ocean Models.

Anyone who wishes to know more about any of the above or their membership should contact Dr P. G. Moore F.L.S., University Marine Biological Station, Millport, Isle of Cumbrae, Scotland KA28 0EG (0475-530581/2).

Sir James Edward Smith

The Norwich Castle Museum is mounting an exhibition from 5 to 24 November 1985 entitled *Norfolk and the Grand Tour*. Our founder, who of course lived in Norwich for many years, is being featured in perhaps what to us is an unfamiliar role, but Fellows visiting the exhibition will recognize the portrait of him on show as being the one from our library. For details telephone 0603-61127.



Smith's portrait by John Rising.

Hardy British Ferns

Some while ago the Society was bequeathed a sum of £200 for “an article in the Botanical Journal illustrated with photographs of hardy British Ferns in order to assist any interested Fellow in identification”. The money can go towards “expenses for fees to such Fellow or Fellows or for photography and reproduction in the Society’s Journal as the Society thinks fit”. The money available does not therefore exclude those who are not Fellows. Would anyone interested please contact the Executive Secretary.

Communication (1)

We have had a plea from a Fellow in New Zealand to produce summaries of meetings. When we launched *The Linnean* we believed that the provision of abstracts, in very much the same format as those previously mailed to Fellows in the U.K. as coloured ‘billets’, would be what you still required. We do not think it practicable to attempt to report a summary for each meeting, whether it be a single one-hour evening paper or a whole-day symposium. However, should there be sufficient interest and demand we could call for speakers during the subsequent discussions to record matters which they felt needed adding to the previously published abstracts. These could be printed, perhaps, in the Proceedings in the form of a ‘meetings supplement’.

The same Fellow would like more notes “on matters of interest to biologists, geologists etcetera”. We will be delighted to disseminate any matter with which we believe the Society should be acquainted and in which there might be interest but which cannot be readily seen elsewhere.

We look forward to receiving your views on both the above.

Communication (2)

In January (1985) we received a telephone call from a lady in Hamburg enquiring about our Journals as she had had her letter on the subject addressed to Soho Square returned, and she was keen to know our new address. Whilst the Society has always been based in London – within half a mile of where we are now and altogether we have moved house six times in the last 197 years – we had to tell her that we vacated the premises in Soho Square 128 years ago.

Membership

We welcome the following who were elected on:

18 April 1985

Prof. John Alec Beardmore, B.Sc., Ph.D.
 Laurence Martin Cook, B.Sc., D.Phil.
 Daniel d'Auvergne Laffoley, B.Sc.
 Dr Carlo del Prete
 Julius Groner, B.S., M.S.
 T. John Humphreys, B.Sc., M.Sc.
 Sean Lawton Michael Karley
 Prof. James William Kimbrough,
 B.S., M.S., Ph.D.
 Prof. Arnold G. Kluge, B.Sc., Ph.D.
 John Albert Long, B.Sc., Ph.D.
 Colin Laurie McKelvie, B.A., M.A.

Fellows

Gopalkrishnan Subramanian Mani, M.Sc.
 Brian Michael Marcotte, B.Sc.,
 M.A., Ph.D.
 Nancy P. Moreno, B.S., M.S.
 Gordon Pritchard, B.Sc., Ph.D.
 Prof. Dr Hans Rieber
 John Graeme Robertson
 Caroline Sargent, B.Sc., Ph.D.
 Richard J. Schmidt, B.Pharm., Ph.D.
 Stephen Michael Tilling, B.Sc., Ph.D.
 Dr Irene Wagner-Dobler

Nicola Ann Hall, B.Sc.

Associates

David Andrew Younger, B.Sc.

24 May 1985

Prof. Per Brinck, Sweden
 Prof. Stephen Jay Gould, U.S.A.

Foreign Members

Prof. Georg Pilleri, F.L.S., Switzerland
 Prof. Helmut Zwölfer, F.R.G.

Daniel Hieronymus Burckhardt, Ph.D.
 Jill P. Dunstan, B.Sc.
 Isobel Espuelas, B.Pharm.
 Charles Edward Jarvis, M.Sc., Ph.D.
 Allan Mervyn Jones, B.Sc., Ph.D.
 George William Richardson Linsell
 Paul Losse, B.Sc.
 Roland Moberg, Ph.D.
 Clifford M. Nelson, M.Sc., Ph.D.

Fellows

Prof. Godvarthi Rajeswara Rao
 Colm Hugh Thomas Rooney, B.Sc.
 Durga Charan Roy, M.Sc., Ph.D.
 Arumanayaham M. Selvaraj, M.Sc., Ph.D.
 John Sydney Slade, B.Sc., Ph.D.
 Ernest Small, B.A., M.Sc., Ph.D.
 Johanna H. A. van Konynenburg-van Cittert
 M. Vivekanandan, M.Sc., Ph.D.

Sally Ann Hayns, M.Sc.
 (from Student Associate)

Associates

Goran Nilsson, B.Sc.

Meetings

26–27 September 1985. The Application of Recombinant DNA Techniques to the Biomedical Sciences. This, the inaugural symposium on Biotechnology, is being held at the Middlesex Hospital Medical School under the auspices of the Biological Council. Details may be obtained from P. N. Campbell, Courtauld Institute of Biochemistry, Mortimer Street, London W1P 7PN.

3 October 1985. This will be the inaugural meeting of the Freshwater Specialist Group, the formation of which is announced on p. 2. The programme, which was being finalized at the time of going to press, will run from 15.15 to 20.30 and include the Annual General Meeting of the London Freshwater Group at 18.00. Tea will be served at 16.30. Visitors will be welcome.

14 October 1985. Meeting of the Garden History Society in the Rooms. *Polish Gardens* by Mr A. Baggs and *The Restoration and Recreation of Historic Gardens* by Mr A. du Gard Pasley.

17 October 1985 at 10.45. Coffee will be served at 10.15 in the Library.

1. Admission of Fellows.
2. Confirmation of the Minutes of the Anniversary Meeting held on 24 May 1985.
3. Communication: ***The Humber Estuary: its Features and Management.*** This meeting is being organized by the Institute of Estuarine and Coastal Studies, University of Hull.

11.00. Dr J. S. Pethick (Dept. of Geography, University of Hull)—*The Quaternary history of the Humber*
Abstract

A study of the tidal regimes of the present Humber reveals that two distinct tidal types exist in the lower and upper estuary. The demarcation of these tidal types lies on the Ipswichian interglacial coastline. Subsequent deposition of glacial till lengthened the estuary and, it is suggested, created the present tidal regime. The implications for the development of the morphological and sedimentological characteristics of the estuary are discussed.

11.45. Dr N. V. Jones (Institute of Estuarine & Coastal Studies, and Dept. of Zoology, University of Hull)—*The Humber and its fauna*
Abstract

The Humber drains about 20% of England and is one of the major British estuaries but it is still relatively undeveloped and unpolluted.

This talk will attempt to expand on the above statement by outlining the history of developments, surveying the present habitats and describing the fauna in general terms.

12.30. Break for lunch.

14.00. Dr B. Barnett (Anglian Water Authority & Humber Estuary Committee)—*Biological Monitoring*
Abstract

The main approach to the work (community investigations) is outlined together with the rationale for monitoring. Sampling programmes and methods are described, and some preliminary results are briefly reviewed. Supplementary research, particularly the use of biological material for monitoring persistent contaminants, is also considered.

14.40. Dr P. F. Newell (Biological Sciences, Queen Mary College)—*The impact of wastes from a long established titanium dioxide factory (Tioxide UK Ltd) on the benthos*
Abstract

A continuing study in the Humber of the effect of acid/iron wastes from TiO₂ manufacture includes a full analysis of the macro- and meio-benthos. Groups of similar multispecies assemblages gave little evidence of a zone of impact from the wastes. The plentiful intertidal fauna is exploited by flocks of migratory birds.

15.20. Dr N. V. Jones—*The 'Sivand' oil spill**Abstract*

An outline of the incident in September 1983 when 6000 tons of Nigerian crude oil was released in the Humber. This was the first large scale oil spill in an enclosed estuary in Europe. Several studies have been made to monitor its effects and they all suggest that remarkably little environmental damage was done.

16.00. Tea (in the Library).

16.30. Dr R. S. Key (Nature Conservancy Council)—*Reclamation proposals for the Humber**Abstract*

Spurn Bight and Pyewipe Mudflats have been threatened with land reclamation. Both have been found to support high invertebrate productivity and winter populations of estuarine birds. A study to determine the likely effects of reclamation revealed that a relatively small proportion of the invertebrate productivity was actually used by the birds.

17.00. Mr D. R. Sayers (Anglian Water Authority)—*Pollution control in the Humber**Abstract*

A discussion of the legislation currently developing for the control of pollution in estuarine and coastal waters. The Humber is the first British estuary for which Environmental Quality Objectives and E.Q. Standards have been developed. The derivation of these instruments and their application will be described.

17.40. Dr R. Rafe (Nature Conservancy Council)—*Nature conservation and the Humber**Abstract*

The Humber estuary is internationally important for wintering waders and wildfowl. Additionally there are important fringing saltmarshes and reedbeds. Much of the estuary is notified as a Site of Special Scientific Interest, there is a statutory Wildfowl Refuge and several nature reserves. Possible threats to the conservation interest come from present, and possible future, agricultural and industrial activities.

18.20 Discussion.

18–20 October 1985. Regional Meeting: *The Natural History and Conservation of the Malham Tarn Area.* To be held at the Field Centre.

Background

Situated in the heart of the Yorkshire Dales, the area around Malham Tarn is a Nature Reserve owned by the National Trust and leased to the Field Studies Council. Although it lies at 400 m, there is a remarkable diversity of plant and animal habitats within its boundaries. Three separate grade one SSSI designations underline its outstanding geographical and biological importance.

*Programme***Friday 18 October**

16.00– Arrival and registrations.

18.00

18.30 Sherry; Dinner.

*Diversity at altitude: the special scientific value of the Malham Tarn area.*20.00 Mr Edward Jackson (Deputy Warden)—*Geology, geomorphology and vegetation history.*Dr Jonathan Adams (Dept. of Adult Education, University of Leeds)—*The freshwater habitats.*Dr Margaret Bradshaw (Dept. of Biological Sciences, University of Exeter)—*Higher plants—some Pennine comparisons.***Saturday 19 October**

08.15 Breakfast.

09.15 Dr Michael Proctor (Dept. of Biological Sciences, University of Exeter)—*The Malham Tarn peatlands.*Dr Robert Cameron (Dept. of Extramural Studies, University of Birmingham)—*Terrestrial molluscs of the Malham Tarn area.*Mr Thomas Lord (Stainforth, North Yorkshire)—*Pleistocene mammals from the Malham area.*

12.30– Lunch.

13.30

13.30– Field Excursions. Options:

16.30 *Tarn Fen and Tarn Moss*—Dr M. Proctor,
Higher Plants—Dr M. Bradshaw,
Freshwater Invertebrates—Dr J. Adams,
Bird Communities—Mr E. Jackson.

16.30– Tea.

17.00

17.00 Dr Stephen Ward (Deputy Regional Officer, Nature Conservancy Council NE)—*Limestone pavement flora.*Dr Henry Disney (Dept. of Zoology, Cambridge University)—*Evaluating insect faunas—experiences at Malham Tarn.*

18.30 Sherry; Dinner.

20.00 Professor Michael Delaney (Environmental Sciences, University of Bradford)—*Population ecology of small rodents at Malham Tarn.*Dr Allan Pentecost (Biology Dept., Chelsea College, University of London)—*Tufa and lower plants.***Sunday 20 October**

08.15 Breakfast.

09.30– Field Excursions. Options:

12.30 *Limestone pavement flora*—Dr S. Ward,
Terrestrial molluscs—Dr R. Cameron,
Invertebrates—Dr H. Disney,
Tufa and lower plants—Dr A. Pentecost.

12.30– Lunch

13.30

Conservation in Practice

- 13.30 Dr Michael Usher (Dept. of Biology, University of York)—*Wildlife conservation and evaluation*.
 Dr S. Ward & Miss Sarah Priest (Assistant Regional Officer, Nature Conservancy Council NE)—*Management for Conservation in the Malham–Arncliffe SSSI*.
- 16.15 Tea and dispersal.

Administration

Enquiries, registration and reservations should be made direct to the Warden, Malham Tarn Field Centre, Settle, North Yorkshire BD24 9PU. Tel. Airton (07293) 331. Booking forms are also available at Burlington House.

24 October 1985 at 18.15. Wine and sandwiches on conclusion.

Environmental Problems in Siberia—Past and Present. This is the second General Interest Lecture by Mr J. Massey Stewart F.L.S., on a vast but little known region.

Abstract

The lecture examines: man's impact on the tundra and taiga; air and water pollution; the U.S.–U.S.S.R. environmental programme with its work on the endangered Siberian white crane and other specifically Siberian projects; nature reserves and protected areas; conservation methods; the Red Data Book of the U.S.S.R.; likely future patterns.

24 October 1985. *The Jodrell Laboratory at Kew and the beginnings of Botanical Research.* This 'Linnean Society Lecture' is being given to the Student Biological Society at Aberystwyth by Professor K. Jones F.L.S., Deputy Director, Royal Botanic Gardens, Kew. Anyone interested in attending should contact Mr G. Griffith, The School of Biological Sciences, University College of Wales, Aberystwyth SY23 3DA.

9 November 1985. A Practical Workshop on Pollen. This is the fifth in the series of practical workshops organized especially for Vith-form teachers and held on Saturdays during term time. It will be run at the Botany Department, Royal Holloway and Bedford New College, Virginia Water, Surrey, by Professor W. G. Chaloner P.L.S. There will be a registration fee of £7.00 to cover administrative costs and lunch. Applications from Fellows or Associates who are not teachers will also be entertained; forms may be obtained from the Office.

Outline

The study of pollen can offer teachers an opportunity to introduce pupils to a range of investigations that they themselves can carry out, relating to pollination biology, the air spora, the source of honey, and the past vegetation of Britain.

This workshop will include two introductory lectures. However, the majority of the time will be devoted to practical work in the laboratory, including SEM examination of pollen. Teachers will be able to study the structure of pollen and its germination *in vivo* and on sugar-agar. Aspects of the alternation of generations will be illustrated by looking at the formation of pollen, and the

behaviour of nuclei in the pollen tube. The practical work will also include the collection and recognition of pollen from the air spora, from commercial honey, and from peat borings. Pollen counts in peat preparations will be used to illustrate vegetational history.

11 November 1985. Meeting of the Garden History Society in the Rooms. *Landscaping at Keele* by Dr K. Goodman and *The Landscape Engravings of William Woollett* by Mr M. Symes.

14 November 1985 at 17.00. Tea at 16.30 and refreshments on conclusion.

1. Admission of Fellows.
2. Minutes of the Scientific Meeting held on 17 October 1985.
3. Ballot for the election of Fellows, Associates and Student Associates.
4. Communication: ***Plants and Animals as sources of Pharmaceuticals.***

Professor J. D. Phillipson F.L.S. (Dept. of Pharmacognosy, School of Pharmacy, University of London)—*Plants as sources of pharmaceuticals.*

Abstract

It might be supposed that a combination of elegant organic chemistry coupled with rational drug design would prove to be such a powerful combination that natural products would be relegated to the realm of historical interest. Such a view is presumptuous because the pharmaceutical industry continues to rely on Nature for the production of most of the antibiotics, as a source of chemicals for the production of steroids and other drugs and for novel chemical structures which provide the basis for new drug molecules. Despite the considerable advances which have been made in providing powerful and effective medicines, there is a resurgence in the use of herbal medicines in western countries, and the majority of the world's population continues to rely on traditional medicines for the treatment of disease. Field plants or their technically modified forms will undoubtedly remain as sources of pharmaceuticals in the future.

Dr D. H. Calam (National Institute for Biological Standards and Control)—*Animals as sources of pharmaceuticals.*

Abstract

Substances of animal origin were once thought to contain a 'life force' that precluded their synthesis. Although this idea was disproved, the complex structure of many such substances used in medicine required continuing dependence on the animal sources. Important developments that have occurred over the past 20 years or so will be reviewed and some prospects for the future will be considered.

28 November 1985 at 18.15. Refreshments and Book Bring and Buy on conclusion (see p. 32).

Recent research on the Linnaean Collections. This is the third in the series of General Interest evenings devoted to the antecedents of the Society. Dr C. E. Jarvis is engaged on the Linnaean Typification project and Dr M. G. Fitton is the Curator of Insects in our Collections. Both work at the British Museum (Natural History).

Pressed plants by Dr C. E. Jarvis

The Linnaean plant collections have for the past 4 years been the subject of a special project aimed at producing a catalogue of Linnaean plant names, together with their typifications. The lecture will review the project, its progress and through examples will illustrate the wealth of original material still in existence, both in London and elsewhere.

Jumping to conclusions by Dr M. G. Fitton

Insect specimens in the Linnaean collection present special problems when it comes to determining their origin and authenticity. Although these problems are a common factor in all investigations, findings are not always easily assimilated or applied in particular cases. In many ways we are further from their solution than were early workers. Benefits resulting from advances in taxonomy and sophisticated techniques not available to our predecessors are reduced to nought if the specimens to which they are applied are not authentic.

12 December 1985 at 17.00. Tea will be served at 16.30 and refreshments on conclusion.

1. Admission of Fellows.
2. Minutes of the Scientific Meeting held on 14 November 1985.
3. Communication: ***Communication in Biology.***

Dr Nick Taylor, London Scientific Films.

Abstract

Scientists working in television are often placed in an awkward position. The problem is to balance entertainment against instruction. Knowing that science never tells the truth and that today's science will look as silly in 50 years' time as the science of 50 years ago looks today, means that there is strong reaction against films with a poor commentary. Is it necessary or desirable to sacrifice accuracy, scientific or otherwise, in the name of entertainment?

13 December 1985. Meeting of the London Freshwater Group at Queen Mary College, Mile End Road, London E1 4NS. Details from Dr A. Hildrew, School of Biological Sciences.

16–20 December 1985. Databases in Systematics. This training course, being run by the Systematics Association at Southampton University, is open to members of the Society. Details may be obtained from Dr R. Allkin, Dept. of Biology, Building 44, The University, Southampton S00 5NH.

16 January 1986 at 17.00. Tea will be served at 16.30 and refreshments on conclusion.

1. Admission of Fellows.
2. Minutes of the Scientific Meeting held on 12 December 1985.
3. Communication: ***Biological Effects of Ozone.***

Dr M. R. Ashmore (Dept. of Pure and Applied Biology, Imperial College of Science and Technology).

Abstract

The ozone layer of the earth's stratosphere serves a vital role in protecting the biosphere from ultraviolet radiation. However, ozone itself can have harmful effects on plants, animals and humans. Ground-level ozone concentrations have been increasing over the last 30 years in many parts of the world, primarily as a result of pollutant emissions from the increasing number of motor vehicles, and are now high enough in some regions to affect human health, reduce agricultural production, and disrupt forest ecosystems.

30 January 1986 at 14.00. *Expert Systems in Systematics*. It is often asserted that computer expert systems should allow major advances in biological identification and classification. If you would like a simple explanation of what expert systems do, and of how they might be applied in biological systematics, you should hear the four papers being read at this afternoon meeting of the Computer Applications Specialist Group.

30 January 1986 at 17.00. Tea will be served at 16.30 and refreshments on conclusion.

1. Admission of Fellows.

2. Minutes of the Scientific Meeting held on 16 January 1986.

3. Communications: *The Evolutionary Genetics of the House Sparrow*.

These papers could not be read as originally planned over a year ago due to a combination of a rail strike and inclement weather. The Abstracts were printed in *The Linnean* 1(3) and copies may be obtained from Burlington House.

2-4 June 1986. Symposium: *Chemistry, Taxonomy and Economic Botany of Euphorbiales*.

This symposium, being run jointly with the Phytochemical Society, is the first in the series of Scientific Meetings associated with the Society's Bicentenary. It will be held at the Jodrell Laboratory, Royal Botanic Gardens, Kew. The international selection of speakers will cover a wide range of topics. Registration forms will be available later in the year.

29 June-5 July 1986. *IV Latin American Botanical Congress*. This international symposium being held in Colombia will cover Structural Botany, Systematic and Evolutionary Botany, Chemosystematics and Phytochemistry, Numerical Taxonomy, Phytogeography, Palaeobotany and Palynology, Floristics, Economic Botany and Ethnobotany, Ecology, Physiology, Ecophysiology and Genetics. The first circular and additional information may be obtained from Dr E. Forero F.L.S., Apartado 54546, Bogota, Colombia, or Sr E. Renteria, Apartado 51407, Medellín, Colombia.

Smith's acquisition of Linnaeus's library and herbarium

If it had not been for the unexpected events which enabled James Edward Smith to buy Linnaeus's books and herbarium, Smith might unwillingly have had to practise medicine and there might have been no Linnean Society. On 23 December 1783 he (a twenty-four-year-old medical student) was breakfasting at

the house of Sir Joseph Banks, when he heard of the death of Linnaeus's son and that Dr Acrel, Professor of Medicine at Upsala, had written to Dr Englehart in London, offering the whole collection to Banks for 1000 guineas. Banks declined the offer but advised Smith to make the purchase himself; he wrote immediately to Acrel to say he was interested and to ask for a catalogue of the collection.

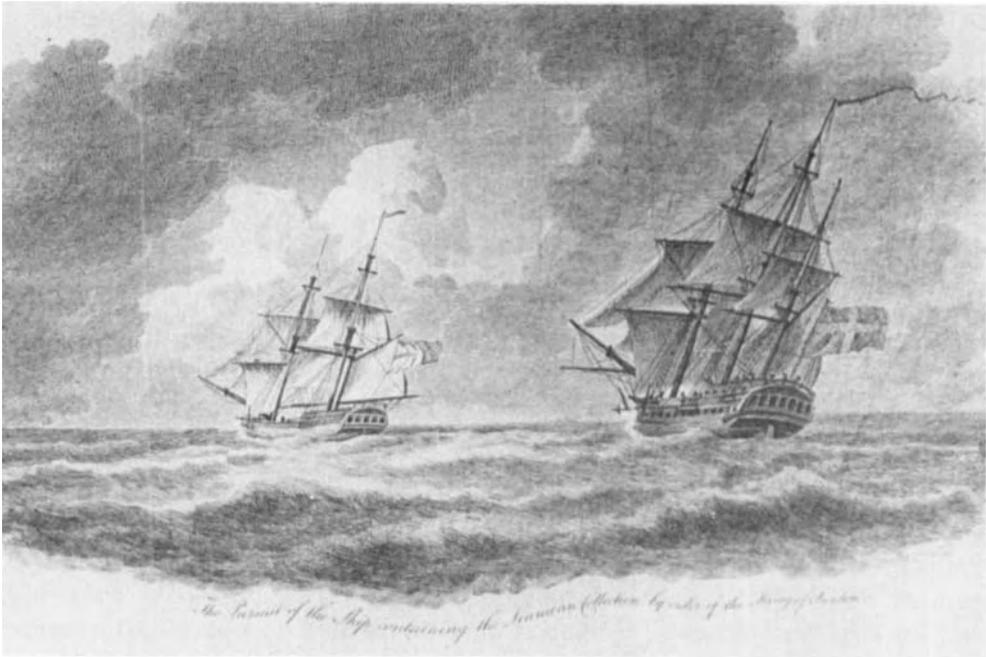
The following day Smith wrote to his father to acquaint him with this news and clearly asked for a loan. "I hope you and my mother will look on this scheme in as favourable a light as my friends here do." He explained that there was no time to be lost as many people wished to purchase the collection, including the Empress of Russia. To begin with his father not unnaturally refused; 1000 guineas was an immense sum for a cloth merchant with a large family still to be educated. "Had I but you, I had not hesitated one moment, every shilling of mine should be at your devotion to serve any good purpose, and your dear mother would be as contented as I should be, to retire up on the moderate income of our real estate, till Providence withdrawing us from the world, should leave you in possession of that also." He also pointed out to his son that "it will require no small nor inelegant house to place so capital a collection". Smith's father could not believe that the Swedes would allow the collection to leave the country for so paltry a sum. He cautioned his son "against the enthusiasm of a lover or the heat of an ambitious man". There are evidently many letters on the subject missing from Smith's manuscript correspondence. It seems that if her husband did not appear in a totally favourable light, his widow suppressed the letters.

Smith duly received a detailed catalogue set out in Latin and his father and brother hastened to London from Norwich to talk it over. "We shall come on horseback or shall put the horses in a chaise." Smith impressed his father with the immense value of the collection, which included a few scarce books which would sell for an exorbitant price. He mentioned a book on insects, "for a copy of which Sir Joseph Banks gave books to the value of thirty pounds and which had long been sought for in vain by the Royal Library". Smith heard later that the small herbarium collected by the young Linnaeus was to go to Baron Alströmer to pay back a debt of £55. The executors were unwilling to separate anything from the collection and offered the whole to the Baron, but thought it unlikely he would buy it. They would offer the reduced collection for 900 guineas. Smith replied that he would agree to this, or would buy the whole and pay the debt to Alströmer. He hoped his father would approve. This indicates that by 10 April his father had been persuaded to provide the money.

Smith wrote confidentially to Acrel saying he thought it a disgrace that the University should have suffered such a treasure to leave, "but if those who ought most to have loved and protected the immortal name of Linné failed in their duty, he shall not want a friend or an asylum while I live..." Smith wrote as a "piece of respect" to his old friends Woodward, Bryant and Pitchford to inform them of his purchase. Pitchford wrote back stressing that the collection should not interfere with the pursuit of his medical studies, "as the cultivation of natural history cannot be pursued with vigour but by persons of independent fortune; for others it must only be as an amusement or relaxation from other studies". Dr Jonathan Stokes congratulated him on having the spirit to make the purchase and hoped that he would not be tempted to accept the liberal offers from L'Heritier and Broussonet in France. Smith replied that he had no intention of disposing of it to anyone.

By August he had persuaded the Treasury that everything except the books should be admitted and delivered to him without duty or any charges whatever. For this favour he was principally indebted to Admiral Sir John Jervis (later Earl of Saint Vincent). Dr Acrel wrote to say that the heirs had now received half the sum owing and that the collection had left for Stockholm. Smith heard that it included a very rare book—the first volume of Rudbeck's *Campi Elysi*, of which there were only two or three copies in the world, the rest having been burnt in a fire in Upsala. He knew Banks would offer £100 for it.

At the end of October 1784 the *Appearance*, an English brig sailed by Captain Axel Daniel Sweder, arrived in England. There were nearly 3000 books in six cases, five cases of plants, four of minerals, two of insects, and many more of letters and manuscripts—twenty-six cases in all. The freight cost £80 and the Captain was paid £5. Dr Acrel was paid his expenses amounting to £4 10s in medical books.



The pursuit of the ship containing the Linnaean collections by order of the King of Sweden.

The ship had just sailed when Gustavus III of Sweden returned home from France. It is alleged that he immediately sent a vessel to the Sound to intercept, but it was too late. There is a fine stipple engraving by W. Ridley after a picture by John Russell of this episode, published in Robert Thornton's *Sexual System of Linnaeus* (1800). Although there is no foundation for the story, it is certain there was much ill-feeling in Swedish academic circles and many scapegoats. The Swedes were positive that if the King had not been absent the collection would have remained in Sweden.

Smith originally intended to house the collection in the British Museum, but

decided to take a house so that it might be safer and more accessible to him and his friends. He hired rooms in Paradise Row, Chelsea, and Banks and Dryander helped him arrange the collection. After his death in 1828, the Linnean Society bought the library and collection from his widow for £3150, thereby incurring a heavy debt which was not paid off completely until 1861.

Margot Walker

Appointment to a 'Crown' Chair of Botany: Glasgow 1885

Frederick Orpen Bower, in his autobiographical sketch (Bower, 1938), described succinctly the initial moves in his appointment to the Regius Chair of Botany at the University of Glasgow "... on an early day in April 1885". Isaac Bayley Balfour, the previous occupant, had been nominated to the vacant Chair of Botany at Oxford in 1884. However, no formal announcement of a successor was made in Glasgow for 12 months, and acceptance of Balfour's resignation had been delayed. The first intimation Bower had of the turn of events was the appearance in his room, at the Jodrell Laboratory at Kew (where he carried out his researches whilst lecturing on botany at the Normal School of Science at South Kensington under T. H. Huxley), of Sir Joseph Hooker, W. T. Thiselton-Dyer, Professor D. Oliver and J. G. Baker, the four chief officials at Kew Gardens. Sir Joseph explained that a hitch had occurred in the Glasgow appointment, and he considered it Bower's duty to apply. Bower was given 24 hours to reach a decision (although knowing he was "bound to obey"), and then to present his card to the Lord Advocate at the Scottish Office in Whitehall if he was agreeable to his name being proposed. Having duly presented his card together with four letters of support from the Kew officials, within a few days Bower received a letter from Sir William Harcourt, the Home Secretary, stating that the recommendation for his appointment at Glasgow had been sent to Queen Victoria, that in due course his appointment would be officially gazetted, and meantime he was to write to the Clerk of Senate at Glasgow, where the summer session of medical botany classes was to start in three weeks time. As stated by Bower (1938) "... not by my own choice, but by force of circumstances never fully explained to me, I was transferred from a satisfactory appointment in London to the Regius Chair in Glasgow". With the passage of 100 years it would seem fitting to enquire whether there is now any enlightenment on the background events leading to Bower's appointment and to the dramatic changes in his life style which resulted. An intriguing aspect of the so-called 'hitch' in the Balfour succession is to be found in an article published by Bower in the *Glasgow Herald* in 1926, reviewing his 40 years tenure of the Glasgow Chair. Here he stated that the problems associated with the choice between two candidates under consideration for the Balfour succession almost precipitated a minor Cabinet crisis.

Both the Court and Senate Minutes of the University of Glasgow yield little background information on the course of events. The first mention of Bower's name is to be found in the Minutes of the Senate meeting held on 16th April 1885, when the following letter from the Home Secretary was read by Principal Caird:

Sir,

With reference to your letter of the 9th inst., I have the honour to acquaint you, for the information of the Senatus of the University of Glasgow, that the Queen has been pleased to approve of the appointment of Mr F. Orpen Bower, M.A., F.L.S. to the vacant Professorship of Botany in the University, in place of Dr Bayley Balfour.

I am, Sir, Your Obedient Servant,
(signed) W. V. Harcourt

Principal Caird, D.D., LL.D.
The University,
Glasgow, N.B.

There is no record of Principal Caird's letter of 9 April, but the "pressing" nature of the turn of events is self-evident. At this same Senate meeting a more mundane feature came up for discussion—which lecture room was to be used by the botany class in the coming summer session. The Greek classroom was accordingly allocated with the strict proviso ". . . that the Professor and Fabrick Committee prevent as far as possible the disfiguring of the classroom, and to restore the room to its present condition before the opening of the winter session". Since the summer botany classes were held solely for medical students at that time, the proviso suggests that the Senate were acting on previous experiences of lively behaviour.

In his autobiographical sketch, Bower stated that his appointment to the Regius Chair dated from April 1885, but this is not in strict accord with the course of events as recorded in the Senate Minutes. At the meeting on 1 May 1885, Her Majesty's Commission to Mr Frederick Orpen Bower to be appointed Professor of Botany (dated 25 April 1885) ". . . was read with all due respect". The commission outlined the amounts and sources of the Professor's salary (£200 per annum, plus part of the revenues from the Isle of Shuma—an addition which Bower claimed in later years he never did receive) and then quoted the suitability of his "abilities and good endowments" for the "discharge of the said office", with the nomination of Bower to be Professor of Botany at Glasgow "during all the years of his life", with all the rights and privileges which belong to "any other Professor of the said University", and requiring that the "University Court, Principal and Professors thereof admit him and receive him the said Frederick Orpen Bower to the peaceable exercise and possession of the said office in the usual form." The appointment thus followed the form "*ad vitam aut culpam*", although, as stated by Bower many years later, misconduct of such a nature as to warrant dismissal would have been costly for both sides, and difficult to prove in practice. With the reading of the Commission, Senate decreed that Bower should write a Latin essay ("De Somno Plantarum") which he would have to read before the Senate once his Commission had passed under the Great Seal in Edinburgh. At this same Senate meeting it was decided that Mr Bower be appointed to conduct the botany class "until the induction of the Professor of Botany could take place". Thus Bower started on his first course of lectures at the University without having officially assumed the title of Professor. Then, at the Senate meeting on the following 12 May, Mr Bower "being in

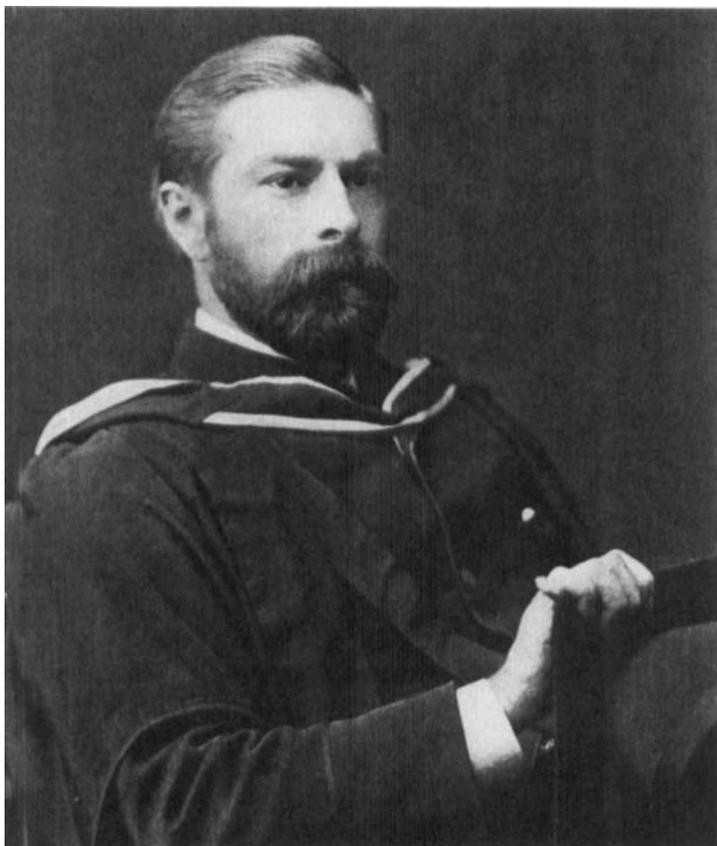
attendance" was called before the Senate – his first appearance before that body – and in the presence of Principal Caird, the Clerk of Senate and 12 members (about half the number) read the essay prescribed, "... which essay the Senate sustained". The following declaration was then made:

"I, Frederick Orpen Bower, do solemnly and sincerely, in the presence of God, profess, testify and declare that, as Professor of Botany in this University, I will never endeavour directly or indirectly to teach and inculcate any opinions opposed to the Divine Authorities of the Holy Scripture, or to the Westminster Confession of Faith as ratified by law in the year 1690, and that I will not exercise the functions of the said office to the prejudice or subversion of the Church of Scotland, or to the doctrines of privileges thereof".

There then followed his subscription to the declaration *de fidei administratione*, being offered the right hand of friendship by the Principal, and finally the right to take his seat as the junior member of the Senate, and to officially assume his title as Regius Professor. Thereafter his attendance at Senate meetings was duly recorded as "Mr Bower, Bot. P", until 12 January 1888 when he was first recorded as "Dr Bower, Bot. P" following the award of his Sc.D. by the University of Cambridge.

No copies of Bower's essay *Concerning the sleep of plants* seem to have been kept. It is likely he would have written it himself, having received at Repton School between 1868 and 1874 the mainly classical education typical of public schools at that time. His predecessor, Bayley Balfour, had been called to write an essay on *De uniformitate processus nutritione in omnibus quae vivant*. Whilst these Latin essays were still a prerequisite before official assumption of the title of Professor, their acceptance by the Senate was less of a hurdle in 1885 than earlier in the century. William Jackson Hooker, second holder of the Regius Chair in 1820, was so concerned at the thought of writing and reading his prescribed essay *De Laudibus botanices* that he almost decided to forego the appointment (Allen, 1967). His worried appeal to his father-in-law Dawson Turner, "... without your assistance I cannot do it – it is utterly out of my power to invent the thing", resulted in an essay which was a model of elegance, Dawson Turner being a sound Latin scholar. Latinity in Hooker's day was a highly prized endowment on the part of the Senate, to the extent that Principal Taylor might call out "siste" before the end of the first page was reached, the imperative "stop!" being a firm indication of his opinion. With the passage of time the earlier critical standards may have declined somewhat. Some 40 years after Hooker, Joseph Lister completed his essay *De Arte Chirurgica Recte Erudienda* on the train journey between Edinburgh and Glasgow, dictionary in hand, before reading it to the assembled Senate and assuming the Regius Chair of Surgery on 9 March 1860 (Fisher, 1977). The essay requirement was gradually dropped towards the end of the last century for all appointments to Chairs. Bower was the last Regius Professor of Botany required to write and read a Latin essay.

The process of securing his appointment; moving to an entirely new environment both socially and academically; preparing in a few weeks a new course of 50 lectures for some 200 medical students; purchasing microscopes and demonstration material from his predecessor; organizing laboratory classes; arranging to collect class fees, which, at two guineas a head constituted a sizeable proportion of his income on the 'farmed' Chair principle then in existence; getting used to the class ticket system—all must have tested Bower's



F. O. Bower in 1889.

resilience to the extreme. We have no record of the 1885 course of lectures, but a notebook itemizing the 1886 medical botany course was left by Bower. Lectures were given at 8.00 a.m. (a change from 12.00 noon instituted by Bayley Balfour in November 1879) on five successive days, followed by laboratory classes. As described by Bower in later years, to hold the attention of a large class of medical students was a "sporting event"—the more so since many in the class regarded the botany lectures as a 'side issue'. That he coped adequately with his first course of lectures was reflected some 40 years later, at the time of his retirement, by complimentary letters from ex-students who remembered the 1885 summer session. He had undoubtedly gained a good deal of useful experience from his South Kensington classes, in which lectures and laboratory sessions were closely interlinked, and the 'new botany' approach very much to the fore. The Normal School classes were small, however—in 1885 the Elementary Botany class consisted of ten students (including H. G. Wells), and the Advanced classes were of similar size. It was Bower's intention at Glasgow to present a series of lectures relevant to the requirements of medical students, and examination of the 1886 course shows that it was not entirely morphological in its approach. Whilst a sizeable proportion of the first 34 lectures were devoted to various aspects of angiosperm structure and morphology, lectures on carbon assimilation and

starch formation, the movement of liquids, root pressure and respiration were included. The analyses and food values of vegetables were also described—clearly an attempt to give some medical bias to the course. The remaining 14 lectures covered gymnosperms, ferns, mosses, liverworts, algae and fungi. Much the same sequence of topics can be seen in the class notes made in summer 1890 by W. H. Lang, who was later Bower's colleague at Glasgow and subsequently first holder of the Barker Chair of Cryptogamic Botany at the University of Manchester. Indeed, the Chapter headings and their sequence in the first edition of *Botany of the Living Plant* in 1919 bears a close resemblance to the 1886 record of lectures. That Bower took pains with his lectures and blackboard presentations is evident from the pencilled reminders in the 1886 lecture notes to "speak slowly", and the reference in a letter from an ex-student to the "profusion of pretty diagrams on the blackboard". Despite the somewhat onerous introduction to his first summer teaching session, he continued to give the medical botany lectures for the remainder of his time at Glasgow.

The end of that first summer session found him, by his own admission in later years, mentally and physically exhausted. He then discovered to his surprise that his teaching commitments for the year were entirely confined to the summer session, leaving the rest of the year free for travel and research. He took full advantage of this, and on 5 November 1885 Principal Caird announced to the Senate that ". . . Mr Bower has agreed to proceed to Ceylon over the winter months for the purposes of Botanical Research". It is not until 15 April 1886 that Bower's name is again recorded in the Senate Minutes as being in attendance—in time to prepare for the 1886 summer session and "much refreshed" by his botanizing expedition to Ceylon.

The question of the 'hitch' in the process of appointing Bayley Balfour's successor in 1884 remains unexplained. There were two front runners, Harry Marshall Ward, then working as an Assistant to Professor Williamson at Victoria University, Manchester; and William McNab, Professor of Botany at the Royal College of Science, Dublin, and Superintendent of the Botanic Gardens at Glasnevin. Marshall Ward was 30 years old, and had spent 2 years (1881–2) investigating the leaf disease of coffee. His scientific standing was high in the opinion of leading botanists in Britain, and it was generally agreed that he was worthy of a much better appointment than the one at Manchester, although none other was available at the time of his return from Ceylon. It is evident that Sir Joseph Hooker and Thiselton-Dyer, who succeeded Sir Joseph as Director at Kew in 1885, would have played leading roles in the appointment of Balfour's successor, especially with Hooker's strong links with Glasgow. There seems little doubt in the light of Thiselton-Dyer's later article on the life of Marshall Ward (1913) that there would have been strong support for his appointment to the Glasgow chair amongst botanists in Britain. It is more difficult to assess the degree of support for McNab. Thiselton-Dyer (1913) stated that "other influences were at work" in favour of McNab on the Government side, and that these influences were responsible for Marshall Ward's appointment being passed over. McNab was 40 years old in 1884. After working as Assistant to Professor Hutton Balfour at Edinburgh, he graduated M.D. in 1866 and studied in Germany, before entering medical practice in 1867. In 1868 he was appointed Professor of Natural History at the Royal Agricultural College at Cirencester before appointment to the Dublin Chair in 1872. He was among

the first of botanists in Britain to introduce students to the work of Sachs. Whilst perhaps not of the standing of Marshall Ward, his claims to the Glasgow appointment would seem to have been strong. There is some evidence that certain members of the 'old guard' on the Glasgow Senate were resentful of too many English appointments to Scottish Chairs, and McNab's claims from both botanical and national points of view may have weighed strongly with them. However, Thiselton-Dyer (1913) stated that "... the University in the end refused to accept his [McNab's] nomination". This would suggest that a majority on the Senate were in favour of accepting the recommendations regarding the candidature of Marshall Ward, but the clash of interests on behalf of the University and the Government resulted in neither candidate being acceptable, hence the state of affairs in April 1885 when Bower became involved.

What aspects of this clash of interest could have caused the minor Cabinet crisis? Neither the Court nor the Senate minutes of the time give any background information on the course of events. Principal Caird's correspondence of the time has not been preserved. Nor have searches by members of the Search Departments of the Public Record Office at Kew, the Scottish Record Office in Edinburgh, and the Departmental Records of the Scottish Management Services in Edinburgh, yielded any relevant information. Indeed the reference number A 35271/6 on Sir William Harcourt's letter of 15 April 1885 confirms that the correspondence was not preserved, and files at the Scottish Office would only have been kept for 30 years. The Kew Gardens correspondence of Sir Joseph Hooker has nothing on the sequence of events prior to Bower's appointment. Thiselton-Dyer has left us one clue to this lack of background information. In a letter to Bower dated 11 November 1912, regarding the 1885 Glasgow appointment, he wrote "... I got so deep in that business that I thought it fair to those concerned to burn the file about it at Kew".

In the absence of official documentation we must needs enter on some speculation. In early 1885 Gladstone's second administration was heading for defeat. The year had started badly with General Gordon's murder in Khartoum on 26 January, two days before the arrival of the relieving force. At the end of March the Russians mounted an attack on the borders of Afghanistan, with the consequent fears of the threat to India. There were continuing problems regarding Irish Home Rule, to which Gladstone was to become committed in the summer of 1885 following the defeat of his administration. Was the Government's move to appoint McNab in some way linked with the evolving policy on Ireland, perhaps with the intention of making the Dublin Chair open to an Irish candidate? And was the minor Cabinet crisis a result of attempting to link the Glasgow appointment with the evolving policies on Irish Home Rule—policies which were to split the Liberal Party one year later? Whatever the reasons, the Glasgow Senate was faced in April 1885 with the prospect of an imminent medical botany class, and no-one to teach the students. Hence the dramatic turn of events which, in the course of six days, was to transform Bower's life and determine his scientific career. By coincidence, Bower's successor in 1924 was the distinguished botanist H. H. Dixon of Trinity College, Dublin. Dixon was subsequently unable to take up the Glasgow appointment. Bower, in a letter written in October 1924, ruefully drew a comparison with the state of affairs in 1884–5, "... trouble in both cases from Dublin".

Affairs at Glasgow did not go smoothly from the start. The Botany Department in 1885 consisted of two small rooms, one of which had to serve as a teaching laboratory and the other as the Professor's private room. An attic contained a badly preserved and uncatalogued herbarium, and the lecture room had to be borrowed from another Department. Little wonder that, writing 40 years later, Bower described the 1885 botany accommodation as "a thing of threads and patches". In his last report to the University Court following his retirement in 1925, Bower described the "discomfort and mechanical inefficiency" of the early years of his occupation of the Chair. The cramped conditions and inadequate facilities brought him to the point of considering tendering his resignation, only to be told by "a very high authority" (Thiselton-Dyer) that it was his duty to remain in Glasgow and establish a school of botany. The inadequacies of accommodation were laid before the Senate in no uncertain terms on 30 May 1888, in a detailed letter from Bower with accompanying proposals that part of the existing University accommodation could be modified and extended. The matter seems to have simmered on at the committee stage for 2–3 years. On 28 May 1891 the University Court received a letter from Bower, couched in much the same terms as his 1888 letter to the Senate. There seems to have been a more positive attempt on the part of the Court to meet his requirements, in terms of modifications of existing University buildings, much as suggested by Bower in 1888. But still matters remained unresolved, and on 10 May 1893, the Court considered a further letter from Bower, emphasizing again the pressing need for permanent accommodation for the botany classes, which by then would have included students reading for science degrees. The letter again pointed out that for botany there was still no lecture room, inadequate laboratory facilities, no botanical museum and no proper herbarium. The telling point in the letter came in the sentence ". . . All this must sooner or later be provided or else Glasgow University will have to take a hindmost place as regards Botany: In which case it will hardly be worth my while to remain here". Both the justice of the case and the underlying threat seem to have worked more effectively this time, although it was another 12 months before an architect was selected to plan the new Botany and Engineering buildings, and seven years were to elapse before the Botany Building was formally opened by Sir Joseph Hooker on 13 June 1901, as part of the programme of celebrations for the Jubilee of the University. Nor were those intervening years without their problems, noticeably in the form of protracted opposition to the proposed siting of the building from some members of the Medical Faculty. However, Bower had an able and powerful ally in the energetic and far-sighted Professor of Civil Engineering, Archibald Barr, and timely support at a crucial stage by Lord Kelvin. Even then the apparently large size of the building was criticized by some members of the Senate at the time of its opening. Sufficient to say that present-day members of the Botany Department at Glasgow, thanks to the space provided in 1901, are able to work with modern teaching and research facilities in an old building of distinction and character.

I gratefully acknowledge the assistance given to me by Mrs E. Shenton of the Search Department of the Public Record Office at Kew; Mr I. Hill of the West Search Room, The Scottish Record Office, Edinburgh; and Mr W. A. Elwood, Departmental Record Officer of the Scottish Office Management Services, also

in Edinburgh. I am also indebted to Lt Gen. Sir Roger Bower, K.C.B., K.B.E., nephew of Professor Bower, for much valuable help and encouragement, and for the photograph of his distinguished uncle.

REFERENCES

- ALLEN, M., 1967. *The Hookers of Kew: 1785–1911*. London: Michael Joseph.
 BOWER, F. O., 1938. *Sixty Years of Botany in Britain: Impressions of an Eyewitness, 1875–1935*. London: Macmillan and Co.
 FISHER, R. B., 1977. *Lord Lister 1827–1912*. London: McDonald and Jane's.
 THISELTON-DYER, W. T., 1913. Harry Marshall-Ward, 1854–1906. In *Makers of British Botany* (Ed. F. W. Oliver): 261–279. Cambridge University Press.

A. D. Boney

Mammals on the move at the Natural History Museum

When the new cetacean exhibition at the Natural History Museum opened in December 1984, it marked the start of a major reorganisation of all the mammal collections on show.

Previously extant and fossil specimens were separately exhibited, and the living orders of mammals arranged systematically, by families. Now, alongside the 'concept' galleries (such as 'Origin of Species' and 'Human Biology'), will be mammals rearranged into 'diversity' galleries.

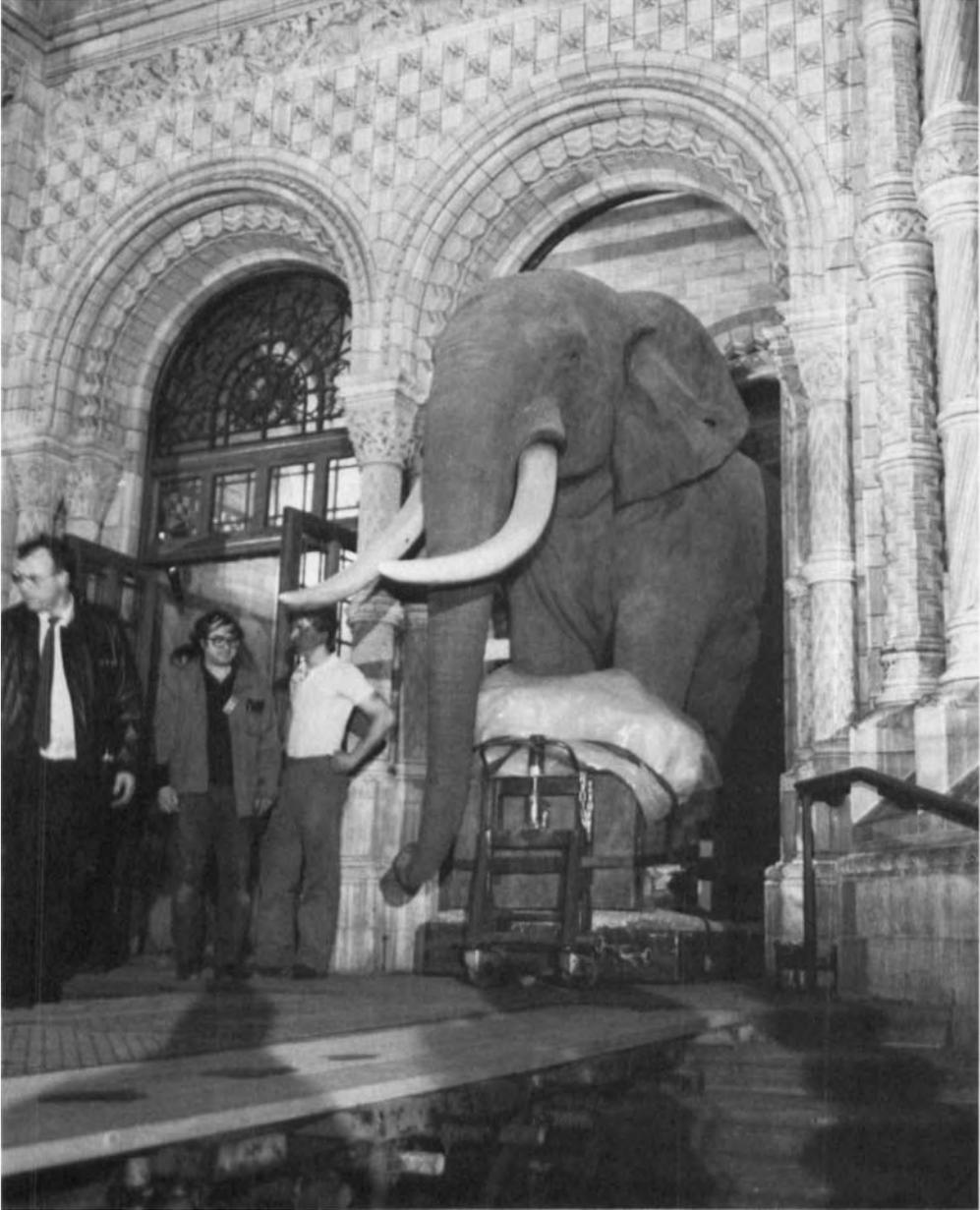
The aim of the 'diversity' exhibitions is to give the visitor a feel of the modern studies of the biology of the class. While the mammals will be roughly divided by orders, there will be greater scope for introducing biological topics that have both worthwhile scientific content and that are of interest to the general public.

This approach necessarily means that the orders cannot be dealt with under a consistent pattern. But each will contain a reference section on basic characteristics and classification, and each specimen of a living species will have a standard information panel giving details of, for example, the animal's ecology, behaviour and conservation status.

By uniting living and fossil specimens in each part of the exhibition it is the museum's intention to give due emphasis to those orders where the fossil record shows greater diversity, as with the elephants.

The two living elephant species, and the recently extinct mammoth, while themselves showing a wide range of habitat from semitropical forest, African grassland to Arctic steppe, are outshone by the diversity of the proboscideans of earlier times. The section on Elephants, therefore, will contain a number of skulls of fossil proboscideans in an impressive display.

Already open is the part of the new mammal galleries devoted to Cetacea and Sirenia. Called 'Whales and their relatives', it occupies the gallery of the Whale Hall, where the popular blue whale model (freshly painted) and skeleton still hang from the ceiling together with the skeletons of three giant baleen and one toothed whale. They have been joined in the open space of the Hall by a 'flotilla' of small toothed whales and dolphins (19 species) which hang over the



Elephants emerging from the front door (BM (NH)).

blue whale's tail and can be seen from all around the gallery. Many of these models have been recast in glass-fibre from the plaster cetaceans that were previously exhibited around the walls of the Whale Hall, and all have been repainted.

The biology of cetaceans is described in 10 or so sections around the gallery. 'Feeding', for example, explains the division of the order into Odontocetae and Balaenopterae, and uses the analogies of a fishing net and a gin trap for baleen and teeth. It also exhibits the jaws of a squid-eating beaked whale.

In 'Breathing and Diving' comparisons are made with land animals to show how cetaceans can breathe under water and dive to great depths. This section is adjacent to the suspended sperm whale skeleton, which now sports a glass-fibre spermaceti organ, while an information panel explains how this strange structure may affect the animal's specific gravity to help it rise and fall in the water.

'Whales and their relatives' uses a number of audio-visual displays, computer games and other technological exhibits to demonstrate aspects of the life of cetaceans. In the section on 'Sounds and Echoes', the interactive displays are particularly successful in demonstrating how sounds can be produced and how they travel underwater. Communication and echolocation sounds made by whales and dolphins play continuously from this corner of the gallery out over the whole Whale Hall.

Rare film footage of stranded whales is used to explore some of the mysteries behind stranding in the section 'Migration and Stranding'. The Natural History Museum has been collecting records of cetaceans stranded around Britain for 70 years, and a map and newspaper photographs record some of the recent occurrences.

The issue of whale conservation is tackled in a section on the blue whale. A touch of a button on a map vividly demonstrates how populations in the Antarctic have declined since the beginning of the century. A poignant reminder of just how little most of us know about the blue whale can be made by comparing the full-length model in the Hall with a scaled-down mother and calf in the gallery. For while the famous wood and plaster whale that hangs from the ceiling was modelled from the dimensions of a stranded specimen, it actually bears little resemblance to the beautifully lithe, streamlined shape of the all-time giant of the animal kingdom in its own domain. But, sadly, a blue whale underwater is a sight that few human beings will ever see again.

What is due to happen to the rest of the Museum's mammal specimens? The primates will be exhibited on the balcony of the Central Hall, and the other orders in galleries adjacent to the Whale Hall. The next phase of this major reshuffle will be seen at the end of 1986, with the opening of the ground floor of the Whale Hall. The Hall will contain exhibits on the living and extinct representatives of the Artiodactyla, Perissodactyla, Hyracoidea and Proboscidea, plus special sections on 'locomotion' and 'large size'. Already the plinths that will support the skulls of the extinct proboscideans have been built, and the Museum's elephant specimens have been moved into the Hall ready to take up their position in the 'Mammal Diversity' exhibition.

Tessa Board

OBITUARIES

Errol Ivor White, CBE, F.R.S., P.-P.L.S. **(1901-1985)**

Errol White, former president of the Linnean Society, died at Wallingford on

11 January 1985, after a short illness. His legacy to the scientific community consists of 120 papers on fossil fishes, and the numerous vertebrate fossils he collected from as far afield as Madagascar and Spitzbergen. Throughout his long career he never wavered from his attempts to understand the anatomy and interrelationships of fossil fishes.

Errol White was born in London on 30 June 1901 and educated at Highgate School before entering King's College, London in 1919. In his official history of the British Museum (Natural History) W. T. Stearn records that White intended to read chemistry but became more interested in his chosen ancillary, geology. As a result he graduated in geology with honours in petrology in 1921. A Ph.D. and D.Sc., both from London University, were to follow in 1927 and 1936 respectively.

In 1922 he joined the British Museum (Natural History) as a member of the Department of Geology and immediately came under the influence of the then Head of Department, Sir Arthur Smith Woodward. Smith Woodward was due to retire in 1924 and decided that the new appointee should be his fossil fish successor. So, at a prearranged time each week, White would receive instruction in fossil fishes from Smith Woodward. And this paid dividends inasmuch as White always exercised great respect for his objects of study and rarely allowed himself to speculate beyond the limits of the specimens themselves.

In publications resulting from his first 10 years at the Museum one can see him feeling his way across the spectrum of fossil fishes. By 1932 he had published on representatives of every major fish group with one important exception. That exception was Ostracodermi, an assemblage of jawless fishes particularly abundant in Lower Devonian rocks, and one to which he subsequently devoted much of his energy.

Old Red Sandstone deposits of the Welsh Borderlands had long been known to contain ostracoderms and these had been the only means of stratigraphic zonation and correlation. But exposures were few and far between with consequent practical problems. During the 30s an expanding road-building programme had resulted in the opening of many small temporary exposures for road metal. White, and his lifelong colleague and assistant, H. A. Toombs [British Museum (Natural History)] took the opportunity to collect as much as they could and to foster friendships with local surveyors and labourers. The reward was a wealth of new material including the first complete pteraspid ostracoderms recovered from one astonishingly rich lens in southwest Herefordshire. This enabled White to describe, for the first time, the complete body of *Pterasis* (1935, *Phil. Trans. R. Soc.*) and provided him with the framework for species identification. Further collecting by both he and Toombs, often by bus or on foot, prompted a series of papers over the next 25 years in which he established a zonal scheme based on pteraspids and their kin and which still forms the standard for correlation of Lower Old Red Sandstone strata across the northern hemisphere. A particularly important contribution was published in 1948 as an excursion guide for the International Geological Congress. I wonder how many congress participants realized the originality embodied within the guide as they trekked from outcrop to outcrop.

His collecting activities spread far afield. In 1929 he joined an international expedition to Madagascar with the object of collecting *Aepyornis* remains. The 9 month expedition must have been an ordeal for him since he was left on his own



Errol White in his room at the BM (NH).

to muster native assistance. In the event he went down to the southwest corner of the Madagascar and collected many specimens of *Aepyornis*, pygmy hippo and a giant lemur. Only at the last minute did he leave the Pleistocene deposits to travel to the northern tip to collect many fine early Triassic fishes. His delightful account of the trip appeared in 1930 (*Natural History Magazine*, 2 (15)) where he records that native help could be obtained for 17.5p per week.

Ten years later saw him as a member of another international expedition; this time to collect Devonian fishes from Spitzbergen. This expedition was led by Professor E. A. Stensiö and included other palaeoichthyologists such as Professors E. Jarvik and A. Heintz. Over 600 specimens were collected to be divided between Oslo, Stockholm and London. The expedition was planned to last into September but a worsening international situation meant that White and his English colleagues (W. N. Croft, J. Brough and J. A. Moy-Thomas) had to leave in August returning home at the outbreak of the Second World War.

White was appointed Deputy Keeper in 1939 but had hardly started when he

was seconded to the Ministry of Health at Reading (1940–4) to deal with emergency local government administration for southern England. During this time he met and married Jane Fawcett (1943). The immediate post-war years were occupied with refining his pteraspid-based correlation scheme as well as trying to restore the Museum to its former self. But he also began another phase of research in the early 50s which centred around a marine fish fauna from the Lower/Middle Devonian of New South Wales. This fauna consisted primarily of arthrodires and further collecting by Toombs (1955, 1963), together with the new technique of acid preparation developed by Toombs and A. E. Rixon, provided a basis for several substantial papers, some written well into retirement.

White's scientific contribution was recognized with his election to the Royal Society in 1956 in which he served on several committees, including the coelacanth committee. Indeed, it was the coelacanth that provided substance for his few popular articles, a vehicle which he rarely used.

He became Keeper of the Department of Geology in 1955, whence the department promptly changed its name to Palaeontology one year later. Many still remember his keepership for he was decidedly autocratic. But we must remember that not only was this the general style of leadership in the late 50s, it was one probably best suited to a rapidly expanding department (21 staff in 1955, 64 in 1966). And it served the Department well to know that he was equally firm with the Museum administration. He successfully convinced the Museum authorities and the Department of the Environment that a new building was needed to house the Department's expanding collections and staff numbers. However, the planning, construction and occupation of the building were left to his successors.

White's presidency of the Linnean Society (1964–7) ended with his presidential address entitled "A little on lungfishes" in which he offered us a rare glimpse of his views on wider biological and palaeontological issues. Throughout his long career he was quite at home suggesting relationships between genera, families etc. But he was reluctant to speculate on relationships between major classes of fishes, believing that the fossil record was still not good enough to substantiate any particular theory. Caution on this point was matched by perception on another. He had no illusions that his work could prove Darwinian evolutionary theory. Although quite prepared to acknowledge that the theory generally fits the known facts he recognized that resolution of the mechanism was beyond the power of fossils.

Retirement in 1966 was celebrated by a Festschrift published by the Society in 1967 (*Zool. J. Linn. Soc.*, 47, 311), edited by P. H. Greenwood, a later president of the Society and C. Patterson, White's successor at the Museum. In retirement White continued to work on Australian arthrodires, mostly at the Museum, and latterly he returned to Old Red Sandstone cephalaspids, having been given room at Reading University near his home. One publication on cephalaspids appeared in 1983 and, at his death, he left another to be published by the Museum.

His honours included the Murchison Medal of the Geological Society (1962), the Gold Medal of the Linnean Society (1970: citation in *Biol. J. Linn. Soc.*, 2: 324–5) and he was appointed C.B.E. in 1960. He was also president of the Ray Society (1956–9) and Vice-President of the Geological Society (1957–60).

As a person White was generally shy, happier with the solitude of his microscope than in public. But his ability to quickly sum up a person combined with his dry wit commanded respect and affection for a man who colleagues will dearly miss.

He leaves a widow and a son. Other obituaries appeared in *The Daily Telegraph* (16 January), *The Times* (22 January) and further obituaries are due to appear in the Proceedings of the Geologists Association, Proceedings of the Geological Society and Biographical Memoirs of the Royal Society of London.

Julian Rzóška (1900–1984)

The death of Dr Julian Rzóška on 31 December 1984 has been the loss of a most outstanding and influential personality in European and tropical hydrobiology. Born in western Poland his family moved to Posnán where he studied first at a German school and later at the new Polish university. An early interest in biology led to wider faunistic studies on water bodies in western Poland, with a special interest in copepods. War-time experiences severed him from his native Poland and he engaged in applied research on rat behaviour at Oxford. His hydrobiological work was resumed in 1946 with his appointment to the University College of Khartoum, Sudan where he built up a well-equipped and mobile Hydrobiological Research Unit. After leaving Khartoum in 1958 he joined the zoological staff at Sir John Cass College (now City of London Polytechnic) where he inspired a succession of students. His greatest influence on the international limnological scene came with his appointment in 1965 as Scientific Co-ordinator of the freshwater (PF) section of the International Biological Programme, where his energy and cajoling helped to develop world-wide initiatives and a degree of extended international collaboration unparalleled in the subject. Following retirement at 74 he wrote on the ecology of the Nile, the Euphrates, and a contribution on that of the Niger, all in face of increasing physical disabilities. A colleague describes him as “part extrovert . . . inspiring teacher; brilliant conversationalist; internationalist yet profoundly European. His Slavonic exuberance enriched many an insular British scientific occasion.”

He is survived by a wife and two daughters.

LIBRARY

Following the success of the previous Library ‘Bring and Buy’ book sale, it has been decided to hold another sale on 28 November after the General Interest talks on the Linnaean plant and insect collections. As before, books for sale will be displayed in the Council Room and refreshments will be available in the

Library Reading Room. Unwanted books on natural history and systematic and evolutionary biology can be brought into the Society for inclusion in the sale from now until 5.00p.m. of the day of the sale. The Library will keep anything needed to complete its own holdings and a letter of acknowledgement will be sent to donors for these items. Other items will go to the sale.

Reorganization of the Library at University College London may mean that items are temporarily unavailable. The Medical and Natural Sciences Librarian has asked that any Fellows wanting specific books or journals should direct their enquiry through the Linnean Society Library to ensure their availability. Following the reorganization changes will be made to some loan arrangements and journals will no longer be available for loan from that Library.

Donations

We hope that the 'Bring and Buy' book sale will provide an incentive for Fellows to make space on their shelves by bringing in books no longer needed. As before, the Library will have first choice. As can be seen from this current list of acknowledgements, there is often much need for older items as these were not always purchased at the time of publication. Special thanks are due to all those presenting us with copies of their own works: it would be helpful to have some idea beforehand if a Fellow is planning to make such a donation. Apart from those listed here, we would like to give special mention to H. M. Burdet F.L.S. who has been responsible for ensuring the Library received copies of publications of the Conservatoire et Jardin Botanique, Geneva over recent years, and also to Dr G. Pontecorvo for his continuing gift of journals.

We are also grateful to the following for donations:

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|------------------------------|--|
| C. E. Bowman | Griffiths, D. A. & Bowman, C. E., Eds, <i>Acarology IV</i> , Vol. 2. Chichester, Horwood, 1984. |
| The authors | Briggs, D. & Walters, S. N., <i>Plant variation and evolution</i> , 2nd edition. pp. 412. Cambridge, University Press, 1984. |
| H. M. Burdet | Conservatoire et Jardin Botanique, Genève. <i>Ouvrages botanique anciens</i> , ed. H. M. Burdet, pp. 599. Geneva, 1985.
<i>Flora del Paraguay (Trigoniaceae & Vochysiaceae)</i> . Geneva, 1985. |
| The author | Clegg, C. J., <i>Lower Plants</i> , pp. 96. London, J. Murray, 1984. |
| J. H. Crothers | Unwin, D. E., <i>Key to the families of British beetles</i> . Field Studies Council, 1984.
Willmer, P., <i>Bees and wasps, a key to the genera of British Aculeata</i> . Field Studies Council, 1985. |
| Miss P. Edwards
(bequest) | Bauer, F., <i>The Australian flower paintings of Ferdinand Bauer</i> . London, Basilisk Press, 1976. |
| R. S. R. Fitter | Boulenger, E. G., <i>Apes and monkeys</i> , pp. 236. London, Harrap, 1936. |
| The author | Ford, B. J., <i>Microbiology and food</i> , pp. 212. London, Northwood, 1970.
Ford, B. J., <i>The cult of the expert</i> , pp. 194. London, |

- Hamish Hamilton, 1982.
- Ford, B. J., *Single lens, the story of the simple microscope*, pp. 182. London, Heinemann, 1985.
- B. G. Gardiner
Hakluyt Society
Hunt Bot. Institute
E. Milne-Redhead
R. M. A. Nesbitt
R. E. Schultes
Shropshire Naturalists Trust
W. T. Stearn
D. P. Taylor-Pescod
- Withering, W. A., *Botanical arrangement of British Plants*, Vol. III, pt. I., London 1792.
- Vancouver, G., *The voyage of George Vancouver 1791-1795*, ed. W. K. Lamb. 4 vols. London, 1984.
- Gunthart, L., *Linger golden light*. Pittsburgh and Switzerland, 1984.
- Martyn, T., *Thirty-eight plates with explanations . . . to illustrate Linnaeus's system of vegetables*. London, 1799. (bound with:)
- Rousseau, J-J., *Letters on the elements of botany . . . translated . . . by Thomas Martyn*, 4th edition. London, 1794.
- Studies in Biology*, Nos 18, 1969; 31, 1972; and 37, 1978.
- Plimpton, E., Ed., *Oak Ames, jottings of a Harvard Botanist 1874-1950*. Harvard, Botanical Museum, 1979. (and also numerous other reprints etc.)
- Sinker, C. A., *et al.*, *Ecological flora of the Shropshire region*, pp. 344. Shrewsbury, 1985.
- Royal Horticultural Society, *Culinary herbs, a Wisley handbook*, by Mary Page and W. T. Stearn, pp. 64. London, 1985.
- Baldwin, E., *Dynamic aspects of biochemistry*, pp. 526. Cambridge University Press, 1960.
- Baron, W. M. M., *Organization in plants*, pp. 202. London, E. Arnold, 1963.
- Bower, F. O., *Primitive land plants*, pp. 658. New York, Hafner, 1959.
- Coult, D. A., *The working plant*, pp. 233. London, Longman, 1973.
- Patten, B. M., *Foundations of embryology*, 2nd edition, pp. 622. New York, McGraw-Hill, 1964.
- Smith, G. M., *Cryptogamic botany*, 2nd edition, Vols 1 & 2. Tokyo, McGraw-Hill, 1955.
- Springthorpe, E. G., *An introduction to functioning systems in animals*, pp. 202. London, Longman, 1973.
- Zimmer, K. G., *Studies on quantitative radiation biology*, pp. 124. Edinburgh, Oliver & Boyd, 1961.

Accessions

Other accessions to the Library during recent months include:

Academia Sinica, *Index Flora Yunnanensis*, 1984.

Barnard, C. J. (Ed.), *Producers and scroungers: strategies of exploitation and parasitism*, pp. 303. London.

Bird, C. J. & Ragan, M. A., *Proceedings, 11th International Seaweed Symposium*,

- pp. 624. Dordrecht, 1984.
- Clifford, M. N. & Wilson, K. C., *Coffee, botany, biochemistry and production of beans and beverage*, pp. 457. London, 1985.
- Collias, N. E. & Collias, E. C., *Nest building and bird behaviour*, pp. 336. Princeton, 1984.
- Cramp, S., *Handbook to the birds of Europe and the Middle East and North Africa*, Vol. 4. Oxford, 1985.
- Desmond, R., *Bibliography of British gardens*, pp. 318. Winchester, 1984.
- Frodin, D. G., *Guide to the standard floras of the world*, pp. 619. Cambridge, 1984.
- Jacquard, A., *In praise of difference; genetics and human affairs*, translated by Margaret M. Moriarty, pp. 187. New York, 1984.
- Harborne, J. B. & Turner, B. L., *Plant chemosystematics*, pp. 562. London, 1984.
- Harris, L. D., *The fragmented forest, island biogeography theory and the preservation of biotic diversity*, pp. 211. Chicago, 1984.
- New, T. R., *A biology of Acacias*, pp. 153. Melbourne, 1984.
- Punt, W. & Clarke, C. C. S., *The northwest European pollen flora IV*, pp. 369. Amsterdam, 1984.
- Zoological Society of London, *Biology of terrestrial isopods*, eds. S. L. Sutton & D. M. Holdich, pp. 518. Oxford, 1984.
- Apart from these, a number of recent additions to existing floras and faunas have been received including:
- Flora republicae popularis Sinicae*, vol. 34 (1) (Resedaceae, Moringaceae, Bretschneideraceae, Nepenthaceae, Dooseraceae, Crassulaceae), 1984.
- Flore descriptive et illustrée de la France*, Suppl. 2, 1979; 3, 1975; 4, 1977; & 5, 1979.
- Flora Arctica URSS*, Fasc. 9, Droseraceae–Leguminosae. Leningrad, 1984.
- Die Natürlichen pflanzenfamilien*, von Engler und Prantl, 2nd edition. Band 21 Parietales und Opuntiales, 1960 & Band 28 b I, Angiospermae, Gentianales, fam. Loganaceae, 1980.
- Pascher, A., *Susswassersflora von Mitteleuropa*, Bd. I, Chrysophyceae und Haptophyceae, 1985; Bd. 9, Chlorophyta I, 1983; and Bd. 16, Conjugatophyceae I. Zygnemales, 1984.
- Rechinger, K. H., *Flora des Iranischen hochlandes*. No. 157, Papilionaceae II, 1984.
- Fauna d'Italia*, Crustacea, Copepoda: Calanoida, 1984.

BOOK REVIEW

Linnaeus: The man and his work. Edited by T. Frängsmyr. pp. xii+203, illus. ISBN 0-520-04568-8. (Berkeley, CA: University of California Press, 1983.)

The title might suggest that this is just another life of the great Swede to add to the existing pile. It is actually a translation and re-publication of four essays on aspects of his personality and scientific thought that first appeared separately in Swedish between 1967 and 1976, three of them as chapters in books.

The late Sten Lindroth's stylishly written "The two faces of Linnaeus" first appeared in *Lychnos* (1967). His intimate scrutiny of Linnaeus serves to redraw much of the traditionally sweet, unblemished countenance of the "Prince of Flowers" painted by adulatory (principally Swedish) 19th- and 20th-century portraitists. We discover a darker cast, some anachronistic features, a less acceptable side, and yet, withal, an engaging charm. Lindroth examines the sensuous, spontaneously religious Linnaeus, the born systematist and nomenclaturist, the brilliant observer of nature, the scholastic, and, while admiring much that he finds, is able to highlight many weaknesses. Linnaeus is seen to mark the close of the scholastic age of botany, and, as Sachs so unpopularity asserted a century ago, to have made no new discoveries in botanical *science*. In a detailed examination of his scientific thinking Lindroth reveals several disturbing anachronisms, some distressing weaknesses in scientific method, a tendency to hasty oversimplification in formulating new theories, a credulous Old Testament piety, and declares that "he was, at his worst, a homespun thinker, remote from ideas that were self-evident to all of his contemporaries with a scientific education". However, these complexities only serve to heighten our interest in the great man's personality and work, and Lindroth's splendid essay is packed with instances and observations that stimulate a desire to discover more.

Gunnar Eriksson's "Linnaeus the botanist", taken from his *Botanikens historia i Sverige intill år 1800* (1970), is a lucid and meticulous analysis of the sources of Linnaeus's botanical ideas, chiefly on plant classification. His rules of botanical description, his contributions to the concepts of species, genera and higher categories, the influence of his ideas about plant hybridization, and his contribution to nomenclature are all critically examined with emphasis on the seminal early works that led to the *Systema Naturae*. Once again anomalies in Linnaeus's thinking are revealed. Brief consideration is also given to Linnaeus's non-systematic biological studies on plant sexuality and fertilization, environmental botany, and plant distribution. In a study which itself utilizes unpublished Linnaean manuscripts Eriksson pleads for a better knowledge of such sources, commenting that "the dating and marshalling of the papers in relation to his later scientific output, are among the most pressing and immediate tasks of Linnaean research." That cry should not go unheeded.

The editor's own contribution, "Linnaeus as a geologist", first published in his *Geologi och skapelsetro* (1969), discusses Linnaeus's views on the geological evolution of the earth in the light of prevailing biblical teachings. This is unfamiliar ground for most readers, having last received serious attention in 1907. While Linnaeus characteristically displayed himself as the acute observer, energetically describing and explaining several geological features and agencies in his travels, he is, once again, shown to have been hasty in advancing premature theories that called for more than the insecure empirical evidence he adduced. Contemporary discussion on the whereabouts of Paradise led to a consideration of the evolution of the habitable earth and a published oration on the subject by Linnaeus in 1743. Frångsmyr guides us through the ideas of Hiärne, Swedenborg, Celsius and others in order to illuminate the intellectual background of Linnaeus's geological pronouncements on such questions as the importance of the diminution of waters and the role of Sargasso weed on the formation of fossiliferous strata. We are reassured to learn of his lack of belief in

the scientific worth of the Bible, his scepticism about the brief span of biblical chronology and his dismissal of the biblical Flood as a geological agent.

Gunnar Broberg's "*Homo sapiens*: Linnaeus's classification of man", is from his book *Homo sapiens L.*, (1976). Linnaeus has the distinction of being the first to classify man as a species of animal and to argue that man should suffer no shame over the notion. In a wide-ranging discussion Broberg takes us back to Aristotle to retrace the development of ideas on man's place in the animal world and leads us to a consideration of the taxonomic criteria used by Linnaeus in describing and placing *Homo sapiens*. Then follows a study of Linnaeus's knowledge and treatment of primates in general and of those mythical anthropomorphs that he included in later editions of *Systema Naturae* and his dissertation *Anthropomorpha* (1760).

It should be noted that all these contributions first appeared before the 1978 commemorations of the bicentenary of Linnaeus's death. Many publications resulted from those events and covered far wider areas of interest than are included here. Not least of those was the symposium "Research on Linnaeus today—progress and prospects" (held in London and Uppsala), which included further papers by three of the authors under review. Thus Linnaean scholarship has advanced considerably since these essays were written. However, their original linguistic isolation as much as their intrinsic merit justifies this republication. The pivotal historical importance of Linnaeus and the refreshingly objective reassessment by his fellow-countrymen make this readable and highly informative collection of value to students of 18th-century science. It is irritating to note that the informative illustrations are not "signposted" in the text.

FORTHCOMING PAPERS IN THE JOURNALS

Biological Journal

CLARKE, C. A., MANI, G. S. AND WYNNE, G., Evolution in reverse: clean air and the peppered moth.

THORPE, R. S., The effect of insignificant characters on the multivariate analysis of simple patterns of geographic variation.

THORPE, R. S., Clines: character number and the multivariate analysis of simple patterns of geographic variation.

BUTLIN, R. K. AND HEWITT, G. M., A hybrid zone between *Chorthippus parallelus parallelus* and *Chorthippus parallelus erythropus* (Orthoptera: Acrididae): morphological and electrophoretic characters.

BUTLIN, R. K. AND HEWITT, G. M., A hybrid zone between *Chorthippus parallelus parallelus* and *Chorthippus parallelus erythropus* (Orthoptera: Acrididae): behavioural characters.

Zoological Journal

HORNE, D. J. AND WHITTAKER, J. E., A revision of the genus *Paradoxostoma* Fischer (Crustacea: Ostracoda) in British waters.

SUNDBERG, P., Nemertean systematics and phenetic classification: an example from a group of hoplonemerteans.

CUTLER, E. B. AND CUTLER, N. J., A revision of the genera *Sipunculus* and *Xenosiphon* (Sipuncula).

GREAVES, W. S., The generalized carnivore jaw.