

# THE LINNEAN SOCIETY OF LONDON

Burlington House, Piccadilly, London W1V 0LQ

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## THE LINNEAN

### Newsletter and Proceedings of the Linnean Society of London

Edited by B. G. Gardiner

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## Editorial

In the penultimate issue of *The Linnean*, in this our Bicentennial Year, we return to our original commitment to natural history (in its antiquated eighteenth-century style—viz., the study of the earth and all its inhabitants) by highlighting Linnaeus's contribution to geology.

This number also touches on how political attitudes may alter the development of science with a letter reminding us of the Lysenko Affair and an article warning our museum administrators not to neglect curation and long term research in their enthusiasm to exploit the collections for commercial purposes!

Finally we have another long list of new members (see p. 10) and we thank all those Fellows who have been so zealous on our behalf.

## **SOCIETY NEWS**

### **Important Notices**

#### *Presidential Message*

Being the oldest biological society in Britain, now entering its third century, it is clearly appropriate for us both to take stock and to look to the future. I am conscious of the honour that you, the Fellows, have done me in electing me President at this exciting time. Scanning the list of my forty predecessors in William Stearn's recently updated history of the Society (A. T. Gage and W. T. Stearn, 1988, *A Bicentenary History of the Linnean Society of London*, 1–242. Academic Press), I find that I belong to at least two minority groups—first I am an entomologist, and second I work outside London!

The only former Presidents who might have admitted to being entomologists were Sir John Lubbock (1881–1886) and Sir Edward Poulton (1912–1916)—dauntingly distinguished company. Insects and green plants dominate the diversity of terrestrial ecosystems, so that in order to study insects we cannot ignore their interactions and inter-relationships with plants. This I believe makes entomologists generally better qualified than most biologists to bridge the often wide gap between botany and zoology: a gap which this society, above almost all others, should help to close. Whilst specialization is essential if research is to prosper, we must not lose sight of the broad perspectives of biology. The present success of the Society is surely largely due to my predecessors' foresight in encouraging interdisciplinary meetings, symposia and publications. I hope that such activities may continue and expand in the future.

Most past Presidents have been based in or near to London. I am the first President whose home is in Wales. To counteract the inevitably increased problems for the officers of the Society caused by having such a relatively distant President, I hope that it may encourage further regionalization of our activities. We should aim for more meetings and symposia to be held outside London. Indeed in looking to widen our horizons we should also be strengthening our overseas links. We already have many overseas Fellows and I would welcome more news and comments from them.

We are now approaching the end of our Bicentenary celebrations which have naturally emphasized our past achievements and links with many other related societies and organizations. I therefore take this opportunity to thank formally the immediate past Presidents, Professors Sam Berry and Bill Chaloner, the Council of the Society, and particularly the permanent staff at Burlington House. The great success of the celebrations and our consequent high profile in the public eye are due entirely to their hard work in organizing and administering the complex programme of events.

We must now look to the future. The Council will be deliberating at length over the coming months on the lessons that we must learn from the Bicentenary. This debate must be as open as possible and I hope that Fellows will follow the admirable example of Frank Bisby, our Botanical Secretary and use the pages of *The Linnean* to promote their views (*cf.* 4 (2): 13–14).

The Society is committed by its Charter to the study of “natural history in all its branches”. In modern terminology this might be worded as the study of organic diversity. I have no doubts myself that we should be seen as a scientific

society devoted both to the study of biological diversity itself and to the processes and mechanisms by which it is produced and maintained. Evolutionary biology in the broadest sense is central to our activities and is indeed reflected in our publications, meetings, and symposia.

It is important at a time when much scientific, and also non-scientific, thinking is reductionist in nature, that we emphasize the importance of biological diversity. The very survival of the human environment in anything like the form that we enjoy it now is completely dependent on the conservation of biological diversity in all its forms. Thus, to the obvious importance of habitat conservation should be added the conservation of genetic diversity of both plants and animals. The urgent need to preserve the existing genetic diversity of crop plants and wild species is obvious. Equally, if effective biological control practices are to replace, even in part, the use of chemical pesticides in crop protection and disease control throughout the world, then the diversity of potential control agents and natural enemies must be conserved and studied. Here is an enormous field of great benefit to mankind that we are uniquely well placed to pursue, encourage and co-ordinate.

In the world today science generally is under attack from many quarters, paradoxically often even from individuals and bodies which share our concern with the natural environment and plant and animal diversity. We need to make it quite clear that only scientific methods can lead to the proper understanding of these phenomena. Funding for the support of biological research is limited and likely to become even more so. Field studies normally need to be done over a relatively large time scale for which funding is always difficult to obtain. We must emphasize, and be prepared to defend, the need for at least part of the limited science budget to be spent on such projects.

Of all aspects of scientific endeavour, evolutionary biology is certainly one of the most controversial both within scientific circles and in the outside world. Evolutionary concepts themselves are widely under attack from many disparate sources, particularly in the United States but also in Europe, as was emphasized most eloquently by Professor Arthur Cain, F.L.S., in his recent Presidential Address to the European Society for the Study of Evolution (Cain, A. J., 1988, *Journal of Evolutionary Biology* 1: 185–194). As the Society to which Charles Darwin and Alfred Russell Wallace first entrusted their ideas on evolution by natural selection, we surely have a special responsibility to involve ourselves actively in these battles. I suggest that we can best do this in our publications—the *Biological Journal* is already subtitled “A Journal of Evolutionary Biology”, and through our meetings which we have the ability to organize on a uniquely wide front. No other society in Britain encompasses these broad areas of concern. It is my aim to see that we pursue them with renewed vigour in our third century.

MIKE CLARIDGE

### *The Bye-Laws*

All who have read the Bye-Laws, especially those of you who have been recently elected and Fellows abroad, will have marvelled—perhaps ‘wondered’ is a better word—at the language in which they are couched. They were, of course, first laid down soon after the Society was founded, then encribed in the Roll and Charter Book in 1802 and thereafter only amended as the occasion

arose. The words used and the intent were thus mostly contemporary some two hundred years ago.

In the revision now in hand the intention is to bring the regulations into line with current practice, to insert sections to cover the obvious omissions and to revise their order to make them logical and more readable. The use of antique language and old fashioned but still relevant syntax is being retained, but only when this seems still justified.

Council intends the revised Bye-Laws to be published prior to the Anniversary Meeting, having been previously read according to the Charter, and for them to be confirmed by ballot on 24 May 1989. Anyone who wishes to see the drafts or who wishes to make proposals must inform the Executive Secretary as soon as possible and at the latest by 21 January 1989 as the formal readings will occur on 9 February 1989 and 16 March 1989.

### *Annual Contributions and Payments*

The amendments to the Bye-Laws concerning Annual Contributions as proposed in *The Linnean* 4(3):1 were balloted for and duly passed on 15 December 1988. The Annual Contribution rates from 24 May 1989 will be:

	Fellows	Associates	Student Associates
No journal (No change)	£25.00	£12.50	£2.50
One Journal (No change)	£30.00	£15.00	
Two Journals	£52.00	£37.00	

Those who take no journal or only take one journal need take no action.

For **Fellows and Associates who take two journals** the following apply:

a. Those wishing to change their journal requirements should inform the Executive Secretary as soon as possible but definitely before 1 April 1989, to allow time for the necessary arrangements to be made with our Publishers. We will assume that those who do not inform us by that date wish to continue as before.

b. The Contribution of those paying by Direct Mandate will be automatically collected by us on 24 May 1989. If you change your journal requirement and inform us by 1 April, the sum will be correct.

c. Those who pay by Banker's Order will have to change this with their Bank as the Society cannot alter Banker's Orders. **PLEASE DO SO AS SOON AS POSSIBLE.**

d. Those who pay by cash or cheque should send the appropriate amount to the Office by 24 May 1989.

e. If you are unsure whether you pay by Direct Debit Mandate or Banker's Order we will be happy to let you know.

### *Notes*

1. Fellows and Associates subject to UK tax laws are reminded that they may claim tax relief on their Annual Contributions and it is understood that certain other nationals may make similar arrangements. This relief of course mitigates the increased charge for a second journal.

2. The publishers will continue to despatch journals as currently instructed. A failure to notify the office of a reduced requirement in good time i.e. at least a month before the due date, will regretfully incur the marginal extra cost.

3. Fellows who have access to U.K. banks are strongly encouraged to pay by Direct Debit Mandate, and this is the method preferred by the Society. Anyone contemplating changing to this method should apply now.

4. Fellows living overseas are reminded that as the Society has a U.S. dollar account, payment may be made in U.S. dollars.

5. To save postage, invoices are not sent automatically. If they have not already done so, Fellows wishing to receive an invoice annually should write to ask for this.

## The Bicentenary

As these lines go to press, the year is two-thirds over but several events have yet to occur, one of the more important being the assessment of the impact our heightened profile has had and the direction the Society sees itself taking in the years ahead (see the President's letter p. 1). With this in mind, the first meeting of 1989 is scheduled as a debate. Fellows are encouraged to attend, or failing that, to write in with brief positive proposals which can either be tabled in written form or taken up by the chairman in the course of the meeting.

Full reports of the Royal Reception, the Bicentenary Meeting and Dinners and the Kew Party are on p. 45. The Kimberley Research Project is figured on p. 27. Below are some less portentous affairs which have occurred since the summer.

### *The Media*

The article planned for *The Field* appeared in September 1988. *The New Scientist* carried further articles on KRP 88 on 18 August, 1 September, 15 September, and 19 November 1988.

### *Tree planting*

It was decided that a tree planting ceremony during the summer Party at Kew should not, after all, take place. However, the Curators of the Oxford University Parks welcomed the suggestion, especially as they had been thinking of establishing a replacement for one of their aging Cedars. The planting, of a *Cedrus atlantica glauca* inside the south gate entrance, behind Linacre College, was performed by Professor Bill Chaloner (deputising for the President who was just returning from holiday) during the lunch break in the British Association Annual Meeting on Tuesday 6 September 1988. After a brief ceremony, University guests and Fellows celebrated with a buffet luncheon in the University cricket pavilion.

### *Stamps*

Our most recent unusual request was from the habitat of the *Ursus paddingtonius*, addressed "Linnean Society, From Perú to England" (cf. 4(3):6).

## Notes

### *Professor Irene Manton, legend and legacy—a reminiscence*

Very sadly we have to report that Irene died on 31 May 1988.

Anyone who knew her will have tales to tell—reminding us of what a marvellous, dynamic, generous or irascible, but always positive person she was\*. We print an Obituary on p. 74, and others have appeared in *The Times*, *Daily Telegraph* and *Independent*, but we feel her passing should not go unremarked at a lower level—that of the office.

To us she was electric. She would blow in with the autumn gales brandishing her senior citizens' pass (which enabled her to get here from Leeds in the off seasons for £2.50) saying, "Hello, isn't it nice to be a geriatric!" One such excursion additionally reaped a harvest of mushrooms, from Green Park—en route from the Royal Society to the British Museum! If, however, we were out of the office during such visitations we would know she had been around as there would be one brown and one grey wool glove lying on the counter. She was of course often sartorially well ahead of her time: tennis shoes with a long dress on a formal occasion have only recently become a fashion—for the young. As to other matters during her time as President, we have it first hand from the then Treasurer that she was "a very good headmistress". And she kept that reputation going long afterwards: for example, she could flatten—and did—a lecturer in an international symposium over-running his time so that her last train home was in jeopardy by saying, "Why don't you shut up and sit down". Later on, at her eightieth birthday party, which people made great efforts to attend, while looking at one of her biological presents from an equally old friend said "How lovely, a fossil from a fossil to a fossil"; and the six immaculate red roses from a younger and very well known Fellow, "From a botanist to a has been".

'Has been' is the one expression we would certainly never use—not even now. We say that because on a totally different note we are delighted to report that she bequeathed the residue of her estate to the Linnean Society for its general purposes and for a prize for a thesis in respect of a Doctorate of Philosophy in Botany. The arrangements for awarding this prize are now being discussed and will be published, initially probably in this Newsletter, but also widely elsewhere as there is no question of the award being limited to any one parochial body. Naturally we were more than just delighted by this gesture and especially as the award, as she had long been planning, is aimed at the good young botanists who often, she felt, went unrecognised—the botanists she spent so much of her life encouraging, probably enraging but certainly always enthusing. She was a great lady and we are delighted that her name will live on.

### *Meiofauna Specialist Group*

The second full meeting of the Meiofauna Specialist Group took the form of a symposium entitled *Meiofauna: recent advances and economic assessment*. The date was 21–22 March 1988; the venue, the meeting room in Burlington House.

\*Editor's note: When she was President and I the Zoological Secretary, we attended several formal functions as President and wife!

The purpose of the meeting was to draw attention to the fact that the study of meiofauna is now accepted as an integral part of aquatic biology and not the rather esoteric discipline it was once considered to be. Recent research has shown that these microscopic animals are a significant part of the sea's food web leading to commercially exploitable species. They may well have played an important role during the evolution of the marine fauna as we find it today. And they are increasingly being used to monitor the effects of marine pollution, particularly where a diverse macrofauna is absent. The upsurge of interest in these organisms is perhaps reflected in the recent announcement of a paper on their ecology having become a Citation Classic.

The speakers at the meeting addressed these important issues. Dr P. J. S. Boaden (Queen's University, Belfast) spoke on meiofauna and the origins of the Metazoa, reflecting an interest in the early stages of the evolution of life itself. Dr R. M. Warwick (Plymouth Marine Laboratory) discussed the role of meiofauna in the evolution of the marine communities found today in benthic habitats. Dr M. Gee (Plymouth Marine Laboratory) discussed recent research that has shown meiofauna being exploited as food by other marine organisms, including commercial species. Dr M. Trett (Queen Mary College, London University) explained how revealing has been the electron microscope in meiofauna research while Dr P. J. D. Lamshead showed how meiofauna studies have contributed to theoretical community ecology. By contrast, Dr C. G. Moore (Heriot-Watt University, Edinburgh), jointly with Mr B. J. Bett demonstrated how they are being used as practical tools for studying marine pollution. Finally, Professor A. D. McIntyre (Aberdeen University) led an interesting and lively discussion of the actual and potential part played by meiofaunal studies in secondary and higher education.

Following the symposium there was a short business meeting, at which was discussed the publication of the proceedings (they will appear as a special issue of the *Zoological Journal*), progress with Synopses volumes dealing with meiofaunal groups and prospects for the future.

The two days proved to be of value in helping to promote the subject of meiofauna research, both pure and applied, in the face of the current rather parlous state of British marine biology in general.

HOWARD M. PLATT

*Synopses of the British Fauna (New Series)*

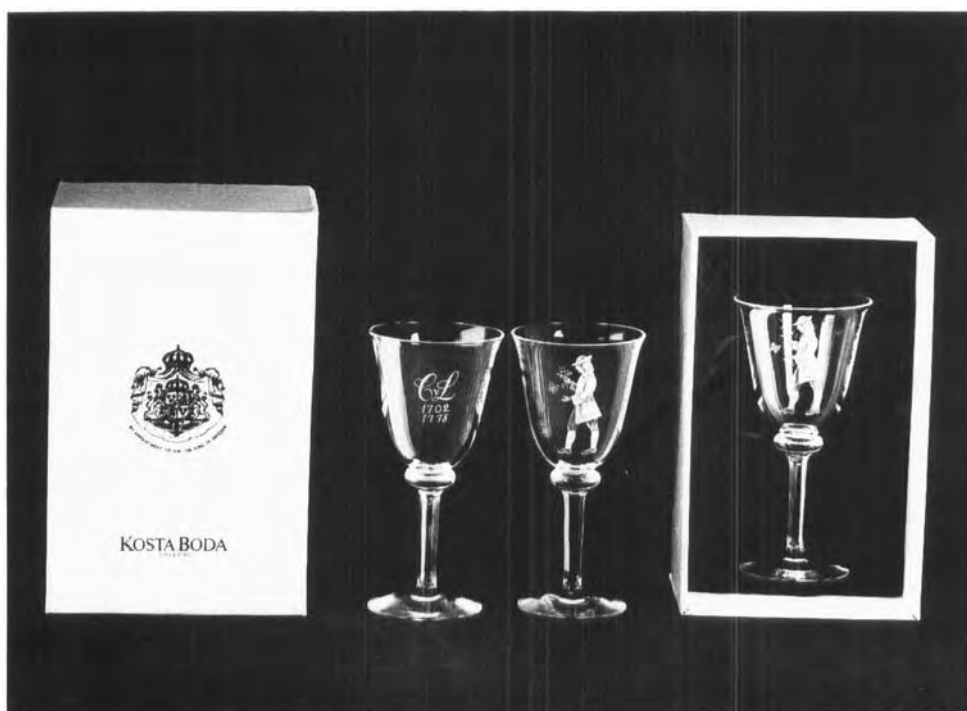
The following are the titles which have been published by E. J. Brill, Leiden, since they took over as publishers from Cambridge University Press in 1984. As you will see there are two Second Editions and one Revised Edition and the numbers on these are the same as in the first editions.

Fellows wishing to order Synopses at the reduced prices given (inclusive of surface mail postage) should do so by writing to the Executive Secretary. Only one copy of each title can be purchased at the reduced price.

		£
2	<i>Molluscs: Prosobranch &amp; Pyramidellid Gastropods.</i> (Second Ed.) Alastair Graham	22.00
8	<i>Molluscs: Benthic Opisthobranchs (Mollusca: Gastropoda)</i> Second Ed.) T. C. Thompson	35.00

18	<i>British Anthozoa</i> . R. L. Manuel (Revised edition)	18.55
29	<i>Siphonophores and Veellids</i> . P. A. Kirkpatrick and P. R. Pugh	10.00
30	<i>Euphausiid, Stomatopod and Leptostracan Crustaceans</i> . J. Mauchline	6.70
31	<i>Earthworms</i> . R. W. Sims & B. M. Gerard	10.70
32	<i>Polychaetes: British Amphinomida, Spintherida and Eunicida</i> . J. D. George & G. Hartmann-Schroder	13.05
33	<i>Clenostome Bryozoans</i> . P. J. Hayward	10.70
34	<i>Cyclostome Bryozoans</i> . P. J. Hayward & J. S. Ryland	10.00
35	<i>Millipedes</i> . J. Gorden Blower	14.50
36	<i>Halacarid Mites</i> . J. Green & Miranda Macquitty	12.00
37	<i>Molluscs: Caudofoveata, Solenogastres, Polyplacophora &amp; Scaphopoda</i> . A. M. Jones & J. M. Baxter	9.00
38	<i>Free living Marine Nematodes. Part II British Chromadorids</i> . H. M. Platt & R. M. Warwick	35.00
39	<i>Chaetognatha</i> . A. C. Pierrot-Bults & K. C. Chidgey	7.50
40	<i>Pseudoscorpions</i> . Gerald Legg & Richard E. Jones	14.00

*Commemorative glass*



Kosta Boda have produced a limited edition of 100 hand made, engraved glasses in celebration of our Bicentenary (20 cms high/10 cms in diameter). They will cost £120 each and come packed in a beautiful presentation box. They may be ordered direct from Kosta Boda AB, S36052 Kosta, Sweden, Telefax 0478-50220; Telephone 0478-50300.

*From the Archives*

On the Fossils of the Trap Formation, communicated by Professor Liebig to the members of the Walkerian Institute:

April 1st 1883

Having recently been present during some excavations on the estate of Sir Julius Smyth of Crammerton Hall, Diddlesex I was fortunate enough to find some most remarkable fossils, a description of which can hardly fail to be of interest to the Society, forming as they do a link which throws considerable light upon a hitherto uncultivated because untwiggged branch of Natural History.

In the first place I bring before your notice a portion of the fibula, the first half in fact, belonging to an extinct creature which Professor Bunkum of the

*In the first place I bring before your notice a portion of the fibula, the first half in fact, belonging to an extinct creature which Professor Bunkum of the Walkerian Institute has named the Elegator (Elaphosaurus Bunkumoides) he has kindly furnished me with the accompanying sketch of its probable appearance*



*Elaphosaurus Bunkumoides*

Walkerian Institute has named the Elegator (*Elaphosaurus Bunkumoides*) he has kindly furnished me with the accompanying sketch of its probable appearance. He adds that the Elegator had a small chest and a large trunk both destitute of locks, the creature being almost hairless especially the female, though the male was sometimes hirsuter, its food was a kind of gruel. Professor O'Mulligan informs me that it was a native of Hibernia and consequently hibernated through the summer.

In the same excavation was found a quantity of scales which Dr. Waggles, who accompanied me, refers to an extinct reptimal, a contemporary of the Elegator and named the Crocodary (*Saurocamelus Wagglesia* or *gammonides*). This creature is described as a reptimal which though reg singular in appearance was plural in reality, there being shoals in all the shallow parts of the rivers it frequented. It belongs to the Dromedelia family and in a state of nature ran on four legs but when properly reared as it often was by the paleojectors (stone throwing men) of its time, it went on only two, they could not however breed it in captivity as confinements killed it.

The next find was a very strange one, no less than portions of a link between the fish and the fowl families, viz. the vertebrae of a *Salumogallus barndorus* or Cock Salmon which according to Izaak Walton existed even so late as his time for in *Ye Complete Angler* he writes thus—"Ye Cock Salmon is a large fische and often doth take his own hooke instedde of ye fyshermans. Large quantities of fische can now be gotte in ye Olde Bourne near ye Viaduct, with a flye from ye Banke (ye fare is 1/6) Ye beste bayte is gentles which came be gotte at ye Livery and Bayte Stables." Probably however the most extraordinary discovery of all was the finding close to the surface of the ground, of a species of Perch in perfect preservation not the slightest symptoms of decay being visible, though it must have been lying there for untold ages. Incredible as it may appear this Perch on careful measurements was found to be no less than  $5\frac{1}{2}$  yards long, the length in fact of an ordinary rod. The weight unfortunately was not ascertainable as there were no scales.

The above paper (not read or published) was received by the Linnean Society on April 1st 1883. It is believed to be part of an elaborate joke perpetrated by C. T. Druery. Druery was an accomplished draughtsman and a prolific writer on horticulture and scientific subjects as well as the author of numerous works in poetry and prose. He was elected a Fellow on 19 March 1885 following his discovery of what was afterwards termed 'Apospory' (viz. the cycle of reproduction in ferns in which spore formation is eliminated).

*Have you, too, got your Society's interests at heart?*

Fellows visiting the Library since July may have noticed that we have acquired a rather patrician, plaster bust in pristine condition. It is of J. E. Smith and was kindly given us by a Fellow in America who initially shipped it for loan to an English museum which was mounting a exhibition in connection with the Australian bicentennial (see also p. 19). We leave this story partially anonymous as, on its arrival, one of the curators immediately recognised it as being the same as one he already had—unlabelled—down in his store. The Society is grateful to Professor Moody, the donor, who very kindly agreed not to have it shipped back to the United States, and to the curator for unwittingly bringing this about by not having all his artefacts identified.

As a footnote we should add that this bust is a copy of one we gave away many years ago—and which was then broken.

*Picture Quiz*

Our last picture (4(3)) was a lithograph of George Robert Waterhouse (1810–1888) made in 1851. Waterhouse though trained as an architect was much more interested in natural history. He was appointed curator of the Zoological Society's Museum in 1836 and then eventually became Keeper of the Mineralogical and Geological Branch of the British Museum (1851–1857) and subsequently the Keeper of Geology (1857–1880). He was a great friend of both Owen and Darwin, the latter entrusting him with the study of the South American mammals and beetles for the zoological account of *The Voyage of The Beagle*. Darwin and Owen were also the god parents of his son Charles Owen Waterhouse (an entomologist).

There was only one correct answer to this charming portrait—from S. P. Dance.



Who and approximately when? (clue not a zoologist). Solution by February to the editor. As usual an old print will be awarded.

### *Room Closure*

The Rooms will be closed for Easter from 24 March 1989 to 28 March 1989.

## **Membership**

*We welcome the following who were elected on 20 October 1988:*

### *Fellows*

Manfred Asche  
 Iris Branch Bannochie  
 Mark Maurice Restarick Beeson, B.A., M.Phil.  
 Prof. Anthony David Bradshaw  
 Prof. George Johannes Bredenkamp, B.Sc., M.Sc.,  
 D.Sc.  
 Ann Marguerite Cartal Burgess, B.Sc., Ph.D.  
 Robert Keegan Carr  
 James Samuel Challice, Ph.D., M.Sc., F.R.S.C.,  
 C.Chem., M.I.Biol., C.Biol.  
 Margaret Elizabeth Cooper  
 Prof. Michael Harold Depledge, B.Sc., Ph.D.,  
 M.I.Biol.  
 David John Bruce Durie, B.Sc., C.Biol., M.I.Biol.  
 Vivian Grace Evans, B.Sc.

Nigel Donald MacDade Fergusson, B.Sc.  
 Marco L. Ferraguti  
 Clemency Thorne Fisher, M.A.  
 John Mark Fothergill, M.A.  
 Prof. Peter T. Furst, Ph.D.  
 Felix Munoz Garmendia  
 Victor Gordon  
 Prof. John Mervin Herr, Jr., B.A., M.A., Ph.D.  
 Hannelore Elisabeth Hoch, DR.rer.nat., Dipl.Biol.  
 Frank Horsman  
 Sir Peter Craft Hutchinson, Bt., B.A.  
 Mark Andrew Hyde  
 Kingsley Iball, B.Sc., P.G.C.E., M.I.Biol.  
 Martin Ingrouille, B.Sc., Ph.D.  
 Mahammed Iqbal, M.Sc., Ph.D.

Richard Antony Jones, B.Sc., F.R.E.S.	Joan Pedrol
Stephen Ivan Jusypiw, B.Sc.	Theodore Wells Pietsch, Ph.D.
Quentin Oliver Newton Kay, M.A., D.Phil.	Juan Bautista Peris Gisbert
Ellen Lorraine Rice Kendington, B.Sc., M.Sc., Ph.D.	David J. Raport, Ph.D.
Mohammad Salar Khan, M.Sc., Ph.D.	Thomas Reynolds, B.Sc., M.Sc., D.I.C., A.R.C.S.
Dr. Paul H. Lambers	Dr. Paul G. Rodhouse
Ernest Sidney Lewis	Prof. Roger H. Sawyer, B.S., Ph.D.
Malcolm Stewart Luxton, B.Sc., Ph.D., C.Biol., F.I.Biol.	Richard Mervyn Sibly, M.A., D.Phil.
Anke Melisa Mans, B.Sc., Ph.D.	David Ingle Skidmore, B.Sc., M.A., Ph.D.
Gerardo Stubing Martinez	Susan Swales, B.Sc., Ph.D. (from Associate)
Dr. Colin Alexander Michie, M.A., BM.BCh.	Simon Peard Thornton-Wood, B.Sc.
Prof. Cyril Hardy Nelson, M.Sc.	Antony James Underwood, B.Sc., Ph.D., D.Sc.
Prof. Orjan, E. G. Nilsson, M.A., Ph.D.	Suraj P. Vij, M.Sc., Ph.D.
Prof. Rune Bertil Nordenstam, FIL.LIC., FIL.DR.	John N. Walker, Dip.Hort., M.I.Hort.

*Associates*

Keith Anderson	Paul Martin Higgins, B.Sc.
Nicholas Court, B.Sc.	Frederica Theodoulou

*Student Associates*

Alice Elizabeth Butler	Ben Leapman
Carol Elizabeth Harley	Tracy Lorraine Stewart
Jason Adam Hones	

*Errata*

See *Linnean* 4 (3):11 under Membership, *Fellows*

## Add:

Per Ericson, Ph.D.	Dr Orhan Kucker
Warren Lee Kovach, B.A., Ph.D.	Tyrell George Marris
Delete 'Broom' insert 'Broome'	
Delete 'Knappe' insert 'Knap'	

## Meetings

**9 February 1989** at 14.30, business at 13.45. ***Molluscan Systematics: Linnaeus to the 21st Century.*** Bicentenary joint meeting with the Malacological Society. See orange booking form.

*Programme*

13.45 Linnean Society business.

*Agenda*

1. Admission of Fellows.
  2. Minutes of the Scientific Meeting held on 21 January 1989.
  3. Second reading of Certificates of Recommendation for the election of Foreign Members and Fellows *honoris causa*.
  4. First reading of the revised Bye-Laws.
  5. Election of Auditors for the Accounts for the year ended 31 December 1988.
- 14.15 Annual General Meeting of the Malacological Society.  
 14.25 Welcome by Professor M. F. Claridge, President of the Linnean Society.  
 14.30 Introduction by Dr J. D. Taylor, President of the Malacological Society  
 14.35–15.15 *What was Linnaeus doing with shells? The development of Linnaeus' logical arrangement of the shells within the Systema Naturae.* Professor A. J. Cain F.L.S., Department of Zoology, University of Liverpool.  
 15.15–15.35 *Whose shells? Deceptive drawings and Linnaeus' collections: the importance of type material.* Mrs S. R. Morris, F.L.S., Department of Zoology, British Museum (Natural History).

- 15.35–16.15 *Nomenclatural problems in taxonomically difficult groups: Linnaean tradition and the chronological approach.* Professor A. J. Kohn, Department of Zoology, University of Washington.  
 16.15–17.00 Sherry and cakes.  
 17.00–17.30 *The old and the new: a review of Littorina systematics:* Dr D. G. Reid, Department of Zoology, British Museum (Natural History).  
 17.30 Summary and conclusions.

**20 February 1989** at 18.30. At The Royal Geographical Society, Kensington Gore. ***Kimberley Research Project 1988.*** See p. 27.

**23 February 1989** at 18.15. Wine and refreshments on conclusion. A lecture on ***Gilbert White and The Natural History and Antiquities of Selborne*** will be given by Dr. J. E. Chatfield, the Curator of the Selborne Museum, in celebration of the bicentenary of the publication of this classic. See the white form for details and bookings.

**16 March 1989** at 10.30. ***Developmental Pathways and Evolution.*** Joint meeting with the Systematics Association. This is the last of the series of one day meetings being held to celebrate the bicentenary. See the green form for details and registration.

*Agenda for Society business*

1. Admission of Fellows.
2. Minutes of the Meeting held on 9 February 1989.
3. Ballot for the election of Fellows, Associates and Student Associates.
4. Second reading of the revised Bye-Laws.

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## Other Meetings

### 1988

#### December

- 13–16 *Protein Production.* Fourth Annual Symposium on Biotechnology. University College, London. Details from : Mrs B. Cavilla c/o Institute of Biology, 20 Queensberry Place, London SW7 2DZ. Dr T. J. R. Harris, MRC Collaborative Centre, Mill Hill, London.

### 1989

#### January

- 17 *Biological Monitoring of the River Thames and its Tributaries,* Dr D. Tinsley. London Natural History Society, Burlington House.  
 24 *Birds and Mammals of Zimbabwe,* M. Read and M. King LNHS. Burlington House.

#### February

- 1–2 *DNA Methylation and Gene Regulation.* Discussion meeting. Royal Society, 6 Carlton House Terrace, SW1Y 5AG.  
 9 *Fossil Ecology of Mammal-like Reptiles,* Dr G. King, LNHS. Burlington House.  
 14 *Flowers of Snowdonia,* Dr A. Bebbington. LNHS Burlington House.  
 21 *The Natural History of the Southern Heathlands,* Dr N. Webb. LNHS, Burlington House.

#### April

- 4–6 *The Scientific Management of Biotic Communities for Conservation.* Southampton University. British Ecological Society.

- 5-6 *The Deep Sea Bed: its Physics, Chemistry and Biology*. Discussion meeting. Royal Society, 6 Carlton House Terrace, SW1Y 5AG.
- 14 *10th Annual Seed Ecology Meeting*. Southampton University. Details from: Dr M. Fenner, Biology Dept., The University, Southampton SO9 5NH.
- 26-27 *Animal Cell Growth and Differentiation Factors*. Discussion meeting. Royal Society, 6 Carlton House Terrace, SW1Y 5AG.

## June

- 1-2 *Life at Low Temperatures*. Royal Society Lecture, Details from: The Scientific Meetings Secretary, Royal Society, 6 Carlton House Terrace, SW1Y 5AG.
- 27-30 *2nd Conference of the International Federation of Classification Societies*. Charlottesville, Virginia. Details from: IFSC-89 Dept. of Mathematics, University of Virginia, Charlottesville VA 22903 U.S.A.
- 28-29 *Human Factors in High Risk Situations*. Discussion Meeting, Royal Society.

## August

- 22-29 *5th Int. Theriological Congress*. Rome, Italy. Details from: 5th Int. Theriological Congress, c/o Dipart. di Biologia Animale e dell'Uomo, Università di Roma 'La Sapienza', Viale dell'Università 32, I-00185, Roma, Italy.

## September

- 4-7 *Population Dynamics of Forest Insects*. Heriot-Watt University. Details from: Dr A. Watt, ITE, Bush Estate. Penicuik, Midlothian EH26 0QB.
- 4-8 *Tropical Lichenology*. British Museum (Natural History). Details from: Dr D. J. Galloway FLS, BM(NH).
- 5-9 *Int. Symposium on Conservation Phytoecology*. Beijing, China. Details from: Assoc. Prof. Chen Weilie, Inst. of Botany, Academia Sinica, 141 Xizhimenwai Ave., Beijing 100044, China.
- 6-8 *Major Evolutionary Radiations*. Durham. Details from: Dr G. Larwood, University of Durham.
- 11-19 *1st World Congress of Herpetology*. Canterbury, Kent. Details from: The Secretariat, First World Congress of Herpetology, Ecology Research Group, Rutherford College, University of Kent, Canterbury CT2 7NY.

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## Correspondence

13.8.88

10 Belgrave Crescent  
Bath

Dear Editor,

The account of the contributions of the Russian geneticist N. I. Vavilov (1887-1943) following the informal meeting to celebrate the centenary of his birth, sponsored by the Linnean Society and the Institute of Archaeology (J. G. Hawkes and D. R. Harris, *Linnean* 4(3), 43-45) gave me something of a jolt. It was not the succinct summary of his work but what was omitted that struck me as incongruous. Perhaps everyone is familiar with the history of the study of genetics in the Soviet Union and how Vavilov played a major role in opposing Michurinist genetics and their mounting hysteria against the Mendelist-Morganists. The paper by T. D. Lysenko delivered to the Lenin Academy of

Agricultural Sciences of the USSR in December 1936 entitled "Two trends in Genetics" (published in T. D. Lysenko 1954 *Agrobiology*. Foreign Languages Publishing House, Moscow pp. 160–194) is a direct attack on Vavilov.

At the end Vavilov in apparent exasperation interrupts Lysenko "You are altering heredity?" to which Lysenko replies "Yes, heredity! Unfortunately the geneticist conception, with its immutable genes in a long line of generations and its denial of the creative role of natural and artificial selection, dominates the minds of many scientists."

In August 1940 Vavilov was arrested on a field trip and sentenced to death for belonging to a rightist conspiracy, spying for England and sabotage in agriculture\*, the sentence was commuted to 10 years but he died in a prison camp in 1943 just as the Royal Society of London was about to honour him with membership. The tradition set by Vavilov did not die with him, in spite of the ascendancy of Lysenko to become President of the Lenin Academy of Agricultural Sciences of the U.S.S.R. One of the most fascinating documents in the history of science, not just of Soviet science, or genetics, is the book *The situation in biological science* which is the verbatim report of the proceedings of the Lenin Academy of Agricultural Sciences of the session from July 31—August 7, 1948, (published 1949 by Foreign Languages Publishing House, Moscow pp. 631). In his opening address Lysenko complained "unfortunately, so far the Michurin science has not been taught in our universities and colleges. To this day Morganism-Mendelism is taught in the majority of our universities and colleges in the departments of genetics and selection, and in many cases also in the departments of Darwinism, whereas the Michurin teaching, the Michurin trend in science, fostered by the Bolshevik Party and by Soviet reality, remains in the shade."

One can sense the almost evangelical fervour of the meeting with the taunting and baiting of the geneticists and indeed anyone such as V. S. Nemchinov who stated "Yes, I may repeat it, I do consider that the chromosome theory of heredity has become part of the gold fund of human knowledge, and I continue to hold that view." Yet maintaining the stand of Vavilov, and in spite of being a calumniated minority, a vigorous defence of genetics and a trenchant attack on Lysenko and his misrepresentation of his opponents is made by J. A. Rapoport, P. M. Zhukovsky, S. I. Alikhanian, I. M. Polyakov, A. R. Zhebrak, B. M. Zavadovsky, and the grand old man of Darwinism I. I. Schmalhausen. The session is closed by Lysenko who prefaces his concluding remarks by dealing with a written question "what is the attitude of the Central Committee of the Party to my report? I answer: The Central Committee of the Party examined my report and approved it." Lysenko goes out of his way to attack Zhukovsky. Finally, and chillingly, there are public retractions by Zhukovsky, Alikhanian and Polyakov.

The resolution adopted by the session approved Lysenko's address "which contains a correct analysis of the present situation in the science of biology. Two diametrically opposite trends have become defined in biology: one trend is the progressive, materialist *Michurin* trend, named after its founder, the distinguished Soviet naturalist and great transformer of nature I. V. Michurin;

\*Vavilov was interrogated for 11 months and then tortured after it was alleged he had been the head of the TKP (Working Peasants Party). He was tried on July 9 1941 and spent the rest of that year in a death cell awaiting execution which was not commuted until the summer of 1942. See *The Gulag Archipelago* 1: 445; 2: 300 Editor.

the other is the reactionary-idealistic *Weismann* (Mendel-Morgan) trend, founded by the reactionary biologists Weismann, Mendel and Morgan." Today Vavilov and Soviet geneticists have regained their rightful place in the scientific community, often as in Vavilov's case posthumously.

Only in Japan are the writings of Lysenko still seriously studied and only there does the Michurin Biology Society continue to flourish and publish its journal. For the rest of the world, including the Soviet Union, it is Vavilov who is justly honoured for his contributions to the science of genetics.

BEVERLY HALSTEAD

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University of the North,  
Qwaqua Branch,  
Private Bag X13,  
Phuthaditjhaba,  
RSA

18.7.88

Dear Sir,

*Linnean Society Bicentennial Dinner*

You will be pleased to hear that a number of Fellows gathered towards the beginning of this year and raised a glass to the Society on its bicentenary.

We had hoped that we could have a meeting with the President as honoured guest but when this proved difficult to arrange, we decided to make use of the annual meeting of South African botanists in January as a suitable occasion.

Invitations were sent to all Fellows and Foreign Members in Southern Africa and eventually ten Fellows and their partners attended the formal dinner held in the Smuts Room of the City and Civil Service Club, Queen Victoria Street, Cape Town on Wednesday, January the 13th.

We were especially honoured to have with us Professor Vernon Heywood as past Vice President of the Society and Mrs Christine Heywood, as well as delighted to welcome back a present member of Council Mr Charles Stirton. Professor Heywood, who gave the key-note address at the Botanist's Congress the previous day, proposed the toast to the Society and Dr John Rourke, Curator of the Compton Herbarium, gave us a short talk on the contribution of some eminent Linneans to Botany in South Africa.

The following Fellows were present at the dinner: Snowy Baijnaith, Millicent Frean, Fiona Getliffe-Norris, Beth Gibbs-Russell, Vernon Heywood, Elliot-Miller, Rodney Moffett, John Rourke, Charles Stirton and Lesjek Vincent.

We received apologies from the following Fellows who said they would be with us and the Society in "spirit" during the evening: Hugh Glen, Tony Hall, Esmé Hennessy, Amy Jacot-Guillarmod, Donald Killick, Otto Leistner, Owen Lewis, Cliff Moran, Miles Perrin, Koos Roux, Brian Schrire, Phillip Tobias and Ion Williams.

At least five botanists at the congress expressed an interest in the Linnean Society so hopefully our small numbers of Fellows will increase in the near future. Although one hates to admit it, the present extremely unfavourable

exchange rate makes things difficult for a number of potential Fellows and I dare say for some Fellows as well.

We may be few, but we remain loyal LINNEANS. May the Society go from strength to strength.

Yours sincerely,  
R. O. MOFFETT

25.7.88

British Antarctic Survey,  
Madingley Road,  
Cambridge CB3 0ET

Dear Professor Gardiner

*Antarctic Science*

Antarctica is a very special part of our planet. Apart from its geographical isolation and extreme climate, it is politically unique in being a region set aside for science by international agreement. Moreover, it is still underexplored in comparison with almost any other part of the world. The relevant scientific literature is dispersed, much being published in a wide range of major international journals, as well as a plethora of national ones. Access to all this literature is difficult, even for those with good polar libraries, and therefore the British Antarctic Survey (BAS), in conjunction with Blackwell Scientific Publications, has taken the initiative of launching a new journal—*Antarctic Science*—which will provide a focus for significant Antarctic literature.

The journal will be published quarterly from March 1989 and accepts papers from scientists of any nation, subject to favourable reviews from two experts within the international community. In addition to three managing editors within BAS, there is an international Editorial Advisory Board of about twenty scientists, selected from the Antarctic community for their proven expertise and reputation.

The editors intend, however, that *Antarctic Science* will be more than just a respected journal with a meaty content of good scientific papers. Each issue will also contain a guest editorial, a major review of some important aspect of current science in Antarctica, short notes on technical developments and field work, book reviews and a noticeboard giving details of Antarctic-related meetings and scientific discoveries. When appropriate there will also be reviews of Antarctic scientific meetings and occasional issues will be devoted to the publication of proceedings of Antarctic scientific workshops. Papers which emphasize the international aspects of science in Antarctica, e.g. by multinational authorship, papers drawing on information from more than one science, and contributions which make comparisons between particular aspects of Antarctic science and related ones from other parts of the world, will be especially welcome.

Although few Fellows of the Linnean Society may be members of the Antarctic community *per se*, I would hope that the journal will be attractive to many of them in providing easy access into the literature of the Antarctic continent and its surrounding oceans. I would also urge them to consider what

relevance their own research may have to Antarctica and to offer us some papers that look towards Antarctica, rather than, as we are accustomed to doing, looking outwards from it.

Yours sincerely,  
MICHAEL THOMSON

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## **The Regency Exhibitionists: a fresh look at the Bullocks**

Cycles of fashion affect museum displays, as they do the world of decorative arts. Currently there is a growing enthusiasm, in some quarters, for seeing museums primarily as “visitor attractions” and for exploiting their collections (whenever feasible) for commercial purposes. It is interesting, therefore, to recall



Fig. 1. William Bullock, F.L.S.

one of the most successful ventures, in these terms, of the first two decades of the 19th century: the succession of Museums established by William Bullock, F.L.S. (Fig. 1). Recent research also allows us to appreciate the influence of Bullock's highly creative brother, the sculptor and cabinet-maker George Bullock (Fig. 2).

William Bullock was not only a successful entrepreneur, showman, collector and explorer; he also developed the craft of taxidermy and achieved new heights of realism in his displays. To enhance his collections he obtained material of great scientific significance, including specimens brought back from Captain James Cook's expeditions to the South Seas.



Fig. 2. George Bullock by Joseph Allen. (Courtesy of the Walker Art Gallery, Liverpool).

The history of his museum enterprises went through four phases. First, he established a "Cabinet of Curiosities" at Portugal House, New Street, Birmingham, in August 1800. A little later, in 1801, he opened a "Liverpool Museum" on Lord Street in which he presented displays of animals, birds, armour and antiquities. The museum soon outgrew these premises, and in 1804 he transferred it to new premises on Church Street consisting of "five apartments built and fitted out for the purpose". Although the museum specialised in natural history, an advertisement from 1805 offered "full value for rare and uncommon birds, beasts, fishes, reptiles, shells, old paintings, carvings on wood and ivory, stained glass, ancient and foreign arms and armour, or any uncommon production in art or nature".

In 1809, he moved the bulk of the collection to London. The building first

used for his London show was situated at 22 Piccadilly, and was initially known as the "Liverpool Museum". Its freshness of approach was unrivalled, and an article in Abraham Rees's *Cyclopaedia* (vol. **24**, 1819) stated that its "...numerous choice and beautiful specimens arranged in a scientific and picturesque manner soon attracted universal attention". In 1812 it was installed in a newly erected museum building known as the "Egyptian Hall", situated in Piccadilly almost opposite the foot of Old Bond St.\* A reviewer, writing in *Ackermann's Repository of Arts*, was very impressed by its natural history displays:

"The arrangement of the natural history department is particularly striking and novel; the astonished visitor is in an instant transported from the crowded streets of the metropolis to the centre of a tropical forest".

What has caused us to take a fresh look at the Bullock phenomenon? Much of the recent research into William Bullock and his museums follows an upsurge in interest in his brother, George Bullock, one of the outstanding exponents of Regency furniture-making and a noted sculptor and interior designer. The auction in May 1987 of furniture from Tew Park which Matthew R. Boulton commissioned from George Bullock, and the sale in June 1987 of a sumptuous suite of furniture made for the 1st Duke of Palmella, Portuguese Ambassador to London, brought George Bullock's work to the attention of a wider public.

Particularly intriguing is the influence exerted by the different members of the Bullock family on each other. Their mother offered lessons in art in Birmingham and was also the proprietor of a Museum of Waxworks, some of which were created by her son George. Sibling rivalry seems to have influenced the brothers' choice of names for their premises. William dubbed his museum the "Egyptian Hall", and this may have prompted George to name his showrooms the "Grecian Rooms", and to advertise the fact that he had no commercial connection with his brother.

During the early part of George Bullock's career in Liverpool he became a protégé of William Roscoe, who had invited James Edward Smith to visit Liverpool in 1803 to deliver a series of lectures on Botany. Smith sat for a portrait bust by George Bullock (Fig. 3); he also commissioned a writing desk, to which he refers in a letter to Roscoe dated 23 September 1803:

"I am much mortified at not having received your books, my writing desk, etc. from Mr. Bullock. Might I beg you to enquire when and how he sent them?"

The bust was evidently finished before the start of 1804, as Roscoe then wrote to Smith:

"When the whole range of our Houses [i.e. the glasshouses at Liverpool Botanic Gardens] are finished Mr Bullock has promised to present us with your bust to decorate our central building. We would however be content with a plaister cast as I long since carried off the original model to place in my gallery at Allerton."

It is not known what became of Smith's writing desk. At least two plaster copies of Bullock's bust of Smith have survived. One was formerly in the

\*The present building on this site is known as Egyptian House and the Egyptian State Tourist Office faces Old Bond St. Editor.

collection of the Liverpool Royal Institution and is now held by the Walker Art Gallery; the other belongs to the Linnean Society of London. Bullock's bust was greeted with approval by Smith and his relatives, as he told Roscoe in a letter dated February 7, 1804: "Pray when you see Mr Bullock tell him my bust is highly approved especially by my own family...".

Another mutual acquaintance of Smith and Bullock was Thomas Johnes of Hafod, in the county of Cardigan, who was associated with both Smith and Roscoe. The pressed plant material which Smith presented to William Roscoe, which is now kept in Liverpool Museum, includes a few specimens which had been cultivated at Hafod in 1798 or 1799. They include the South African plants *Pelargonium lobatum* Willd. and *Aster fruticosus* L., and *Primula cortusoides* L. "raised from Russian seed". In 1807 a fire caused extensive damage to the house, and George Bullock was engaged to assist with the refurbishment. Johnes described him to Roscoe as "a very clever fellow...who is to fit up my house when ready for it".



Fig. 3. Bust of Sir James Edward Smith, by George Bullock.

George Bullock often used indigenous materials for constructing his fine Regency furniture, including a kind of serpentine from Parys Mountain in Anglesey; this rock was known as "Mona Marble", and because it resembled the "verd antique" of classical sculpture, the story was put about that the Romans obtained their supplies from Anglesey (known in classical times as "Mona"). While it is true that the copper mines of Parys date back to Roman times, it is unlikely that the Romans would have quarried the Anglesey serpentine for use in sculpture.

George Bullock's preference for native woods reflected patriotic sentiment at the time of the Napoleonic wars; it may also have been a pragmatic response to the shortage of tropical timbers at that time. His brother, on the other hand, was keen to display the "natural productions" of far-off lands. In addition to the Cook material from the "Endeavour" voyage, the Liverpool Museum displays featured Australian specimens which Bullock obtained from Sir James Smith. These were probably brought back by John White, the first Surgeon-General of New South Wales, whose collections were shared between Aylmer Bourke Lambert and Sir James Smith.



Fig. 4. "...one of those dreadful combats..." (Courtesy of Bolton Art Gallery & Museum).

In researching the story of William Bullock and his Museum, one keeps coming across references to the innovative design of the displays. This may have been due at least in part to the influence of his brother, who had a particular flair for interior design, though it is equally true that William Bullock was not lacking in design skills himself. A striking feature of his museum displays, which

must have helped to captivate the public, was the highly realistic taxidermy. An example of a showcase from Bullock's museum has survived in Rossendale Museum, Rawtenstall, Lancashire (Fig. 4) and was shown to be authentic by E. G. Hancock. It shows a Tiger and a Boa Constrictor in mortal combat, and is described melodramatically in Bullock's catalogue as:

"...one of those dreadful combats which sometimes take place betwixt this powerful and sanguinary destroyer of the human species, and the immense serpent of India, called the Boa Constrictor, in whose enormous folds its unavailing strength is nearly exhausted, and its bones crushed and broken by the strength and weight of its tremendous adversary".\*

The serpent was indeed immense; it actually consisted of two joined specimens.

Bullock faced formidable problems not only in obtaining, but also in preserving, specimens suitable for use in Museum displays. He introduced into Britain techniques pioneered by Charles W. Peale of Philadelphia, including the use of an arsenical preservative:

Arsenic ..... 1 lb  
 Burnt alum ..... 1 lb  
 Tanners' bark ..... 2 lb  
 Mix, grind and add 1/2 lb Camphor and 1/2 oz Musk.

He also prepared a handbook for collectors entitled *A concise and easy method of preserving subjects of natural history, intended for the use of sportsmen, travellers, etc., to enable them to collect and prepare such curious and rare articles as they may wish to preserve or to transmit in safety to any part of the world*. It was first published in 1817, with a second edition in 1818.

Just as important as the initial preservation of natural history material was its presentation. Bullock's natural history displays were strikingly realistic because they were arranged in habitat groups, with appropriate rocks and vegetation, and in which the settings complemented the postures of the specimens.

There was a convergence of interests between the Bullock brothers. While William was expanding his collections in London, George's furniture business was thriving. First he set out his wares at the Egyptian Hall in Piccadilly, where trade directories for 1813 list "Bullock George Upholsterers, Grecian Rooms, Egyptian Hall Piccadilly". Next, George Bullock established his own premises on the north side of Tenterden St., and later he expanded into no. 313 Oxford St.

One of George Bullock's later works was a fine natural history storage cabinet of Rosewood and Birds Eye Maple, inlaid with a floral brass pattern. The drawers have glass tops, but this may not be an original feature. The cabinet, which was illustrated in Collard's *Regency Furniture* (plate 18), is now in the Victoria and Albert Museum. Such a fine piece of furniture convincingly demonstrates the importance attached to the storage and display of their collections by naturalists of the Georgian era.

George Bullock died, abruptly and tragically, on May 1, 1818; an obituary in *Annals of the Fine Arts* described his death as "sudden and lacerating". He was aged only 35, if contemporary records were accurate; if however he was the

\*This exhibit inspired the large terra-cotta above the entrance of the BM(NH).— Editor.

George Bullock who was baptised on August 24, 1778 at All Saints, West Bromwich he would have been around 39 years of age.

William Bullock was elected as a Fellow of the Linnean Society on November 6, 1810 and his name remained in the membership lists until 1827. His application succeeded despite an attempt by William Elford Leach to blackball his proposal by writing to Fellows likely to attend the meeting at which Bullock's admission was to be considered. One of the letters, dated November 2, 1810, and addressed to "George Anderson Esq., Tooley Street", reads:

"Conceiving that the election of Mr Bullock (Proprietor of the Liverpool Museum) into the Linnaean Society, (should it take place) would prove highly detrimental to the interests of that hitherto respected body, has induced me to address a few lines to the Members who reside in London, to entreat those who are friends to Science, and enemies to imposition and quackery, to attend the Meeting of the Society on Tuesday November 6th for the purpose of black-balling him. The objections are first that he is likely to bring the Society into disrepute by the puffs with which he daily fills the Newspapers, and it is not to be conceived that he will after his election cease to act in the same manner; secondly his Museum is unscientific and contains a considerable number of made up subjects,

I remain a well wisher to the Society

Wm. Elford Leach 20 Southampton Buildings."

A similar letter was addressed to John Sims, M.D., editor of Curtis's *Botanical Magazine*.

Leach's intemperate opposition provoked censure from the Chair, and as a result of the reprimand he wrote to the President on November 30, 1810 apologising for his actions and assuring him that "I was actuated by no personal Enmity towards Mr Bullock, but merely by a Zeal for what I considered the welfare of the Society". Leach himself had been elected in 1809.

Bullock made a number of field trips to obtain rarities for display in his Museum. Perhaps the best-known of these was the Great Auk, which had survived in Orkney until 1813. Bullock made an unsuccessful attempt to shoot it in 1812 during a chase in a six-oared boat of Papa Westray. He is also credited with the first record of the Snowy Owl in Britain, which he observed on North Ronaldsay in July 1811.

In acquiring material for the Liverpool Botanic Garden, William Roscoe used Bullock as an intermediary in arranging an exchange of plant material with Sir Joseph Banks, who was interested in getting material from John Bradbury's expedition to the Missouri Territory in 1808-1813. A similar request was made of Bullock by Aylmer Bourke Lambert, with the result that Bullock wrote the following letter to Roscoe on November 4, 1813:

"Sir

I laid your letter before Sir Jph. Banks who requested me to return his warmest thanks for the very liberal manner in which you have permitted him to take a specimen of each of the duplicates of the plants sent by Bradbury and that he will consider it his duty and have great pleasure in forwarding to the Liverpool Garden whatever is in his power to add to it. Mr Brown will

make the selection tomorrow when they together with Dr Roxborough's [sic] shall be forwarded as you request.

Mr Lambert has just called on me to request me to make a similar request to you on his part that I did for Sir Josph. which I do only because I promised him not having the same reasons that I had in the other case. He says he has 20 new Peruvian Plants living that he will send you in return. You will please to determine for yourself in this case. I would certainly select the duplicates myself were the case mine.

I am Sir very truly yours

W. Bullock."

Lambert's acquisition of duplicates from Bradbury's collection had unforeseen consequences; he allowed F. T. Pursh to have access to them during the preparation of his *Flora Americae Septentrionalis*, and Pursh pre-empted the publication of Bradbury's collections, as well as those of his companion in the field, Thomas Nuttall. Nuttall was none too pleased, and commented that it "was not surely honourable to snatch from me the little imaginary credit due my enthusiastic researches made at the most imminent risk of personal safety".

Bullock's motives in arranging the exchange were honourable, however; he evidently shared Roscoe's enthusiasm for the Botanic Garden, and wished to see its collections augmented. There is a large set of Roxburgh's duplicates at Liverpool, which may well be the collection mentioned in the first part of Bullock's letter.

The later years of Bullock's Museum saw further diversifications. In 1816 he put on display Napoleon's military carriage, which had been captured on the evening after the battle of Waterloo, and which the Prince Regent (needing the money) had sold to Bullock for £2,500. Bullock later hired Napoleon's valet and coachman, Jean Hornn, to supply further authenticity. Visitor figures for this one exhibit totalled 220,000 by the time it closed in August 1816.

In 1818 Bullock closed his Museum, and after first offering the natural history collections to the University of Edinburgh, who declined them, the entire stock was sold by auction in early 1819. The auction, which was conducted by Bullock himself, was attended by representatives from many of Europe's major natural history museums. It was a gigantic affair; over 32,000 items were sold. Purchasers included W. E. Leach, as well as Sir Thos. Ackland, Count Brenner, Baron Logier and Count Temminck. Edward Stanley, subsequently the 13th Earl of Derby, purchased some of Bullock's rarest specimens. They were initially housed at Knowsley Hall, Prescot and were later bequeathed to the City of Liverpool. Lord Derby's very generous bequest coincided with the establishment of the City Museum, which was founded in 1851.

Despite the sale of his collections, William Bullock retained the use of his premises in order to mount what would probably now be termed "blockbusters". After leasing part of the premises to Giovanni Belzoni for a display of Egyptian art and artefacts in 1821, Bullock opened the first of his special exhibitions in February 1822. It dealt with the peoples of northern Sweden—an apt topic for a Linnaean—and featured a family of Laplanders with a herd of living reindeer!

Having confirmed the public's appetite for ethnographic novelties, Bullock next turned his attention to the New World. On his first expedition to Mexico, Bullock left Portsmouth on December 11, 1822 and returned on November 8,

1823 having spent six months in that country as well as visiting Jamaica and Cuba en route. Some of the plants collected in Mexico were brought back in a living state to be grown by "Mr Tate, of the Botanical Garden, Sloane Street". James C. Tate ran a nursery business in Sloane St., Chelsea in the 1820s, and Bullock also lived in Sloane Street from 1820 or 1821. His book does not list his botanical introductions, but among the plants recorded from the Botanical Garden in Mexico City which he lists as "new", are *Euphorbia pulcherrima* Klotsch (first published in 1834) and *Nocca latifolia* Cervantes (published by La Llave & Lexarza in 1824 and now known as *Lagascea suaveolens* Kunth).



Fig. 5. Elmwood Hall: William Bullock's residence in Kentucky. Photo taken in 1965; courtesy Prof. R. G. Beidleman, Colorado College.

Bullock's acquisitions from Mexico were shown at an impressive exhibition which opened in May 1824, entitled "Ancient and Modern Mexico"; it included casts of Montezuma's calendar stone, and a varied display of natural history material. The collections were sold at auction in March 1825, along with his premises which were still known as "Egyptian Hall". It continued to function as an exhibition centre; one of the "spectacles" to be displayed there later in 1825 was the jewel-encrusted Burmese imperial state carriage which had been captured by the British the previous year.

Bullock made further travels in Mexico and the U.S.A., and was particularly impressed by the town of Cincinnati, Ohio which he and his wife first visited in 1827. During a brief return to Britain later that year, he promoted a plan for a "small town of retirement", to be known as *Hygeia*. It was to be founded on the south side of the river Mississippi, on a thousand-acre estate in Kentucky which Bullock had purchased (now the site of Ludlow, Ky.).

For once, Bullock had over-reached himself. The project was unsuccessful, and in 1831 he sold the principal building Elmwood Hall (Fig. 5), and 710 acres of land, and retired to a small cottage on another part of the estate. He returned to England in 1836; details of the rest of his life are obscure. By a strange irony, given his family's involvement with waxworks, one of his last public statements (in 1843) was to vouch for the authenticity of Napoleon's military carriage when it was bought by Madame Tussaud & Sons. His date of death is unknown.

From a modern perspective, it can be argued that the activities of a "showman" like Bullock did far more to stimulate public enthusiasm for natural history than was achieved by the private collectors of the same epoch. It is difficult to appreciate the full extent of the impact which a Museum like Bullock's must have had on the contemporary scene. Bullock's shrewd commercialism would have reinforced the urge to change his displays, in order to provide newsworthy "puffs" (much deplored by Leach) for his marketing campaigns. Stopping the traffic for hours in Piccadilly in order to cart a whale, or some other huge specimen, into the Museum was one of his ploys.

The results of his efforts were, on the one hand, a succession of immensely popular shows, and on the other the neglect of any commitment to the long-term curation and research which were necessary if the scientific features of the collections were to be safeguarded. In questioning whether Bullock's achievements were ultimately soured by impermanency, one is struck by the similarities between his frenetic showmanship and the policies our present-day natural history museums are increasingly forced to adopt. Could they soon be facing a similar dilemma, in which the need to finance their public displays generates an irresistible impetus to dispose of their reference collections?

### *Further Reading*

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JOHN EDMONDSON

## **Kimberley Research Project, 1988**

More than three and a half years after its inception, the Kimberley Research Project successfully concluded four months of intensive biological and geomorphological field work with the departure from 'Qantasbase' at the end of July. Research will now continue in laboratories and herbaria in many British and Australian institutions for some time to come but there is no doubt that initial field reports already demonstrate a wealth of discoveries and predict many papers on a wide range of subjects.

While the geomorphological team, headed by Professor Andrew Goudie, was engaged primarily on the limestone of the Napier and Oscar ranges, more than twenty biologists were collecting specimens and making specialized field observations on many plant and animal groups throughout the Project area, including the extensive King Leopold range as well as on the limestone. A future report will expand on the preliminary scientific findings, but brief reference here to some of the various research topics should demonstrate the great range of botanical and zoological work undertaken.

Zoological research ranged from advanced acoustic and echo-location studies of bats to detailed observations on the biology of a single Damsel fly species, and from a survey of small, and often rare, marsupials to a close examination of peculiarly localized snail populations in the Oscar and Napier ranges. An exciting and significant feature of the Project was the number of botanists studying the lower plant groups especially the little-known lichens, bryophytes and fungi. Several hundred lichens and fungi were collected from an area in which very few were known previously. Many of the collections may well prove to be species new to science and there is already an indication that one of the mosses discovered may even represent a new bryophyte family.

Flowering plant specimens were extensively gathered, specialized studies being made notably on grasses, waterlilies and three genera of *Tiliaceae*. The collections, deposited primarily in the Western Australian herbarium in Perth and in the herbarium of the Royal Botanic Gardens, Kew, will undoubtedly add significantly to the database available for the preparation of the Kimberley and Australian Floras, both currently in progress. An excellent rapport with the Bunaba aboriginal people, traditional owners of the Kimberley Project area, enabled a study of bush foods to be undertaken; core sampling for anatomical study is expected to lead to a greater understanding of the structure and purpose of the swollen Boab tree trunk, such a characteristic feature of the Kimberley landscape.

There was excellent collaboration between the various British and Australian biologists. Lichen and moss studies formed part of the research to ascertain the importance of organic agencies in promoting tufa deposition, and a vegetation survey of linear gilgaies (a patterned ground phenomenon), exemplified a valuable interface with the work of the geomorphologists. Other geomorphological research during the Project included mapping of the Napier range and studies of limestone weathering, rock slope formation, cave sediments, palaeo-flooding and micro-erosion as well as sampling of some of the ancient linear dunes.

Lectures on the Project will be given at the Royal Geographical Society, Kensington Gore on 20 February 1989 and in our Rooms on 19 April 1989. See the blue flier for details. It is planned to arrange symposia in the Autumn of 1989 to consider the scientific results.

MARTIN J. S. SANDS

## Linnaeus's Geological Career

Natural history in the 18th century included two main fields—the study of the earth (meteorology, hydrography and geology) and the study of the vegetable and animal kingdoms. Linnaeus made major contributions to both fields but, because of his outstanding achievements in the biological sciences, his contribution to geology has for the most part been overlooked.

Linnaeus's interest in geology dates back to his student years, in particular 1727, the year he spent at Lund lodging in the house of Dr Kilian Stobaeus. During that time, he not only attended lectures by Stobaeus on fossils, shells and stones, but was also able to study Stobaeus's extensive museum (which included minerals, fossils, dried plants and birdskins). In that year, he also went on various excursions into the surrounding countryside collecting plants and fossils, the latter particularly from the foreshore at Malmö and Lomma.

His first real chance to collect minerals came two years later when he was studying in Uppsala (1730). It was here, while enjoying the patronage of Dr Olof Celsius, that he was able to make an excursion to the area of Dannemora and at the same time to visit the famous Dannemora iron mines. He spent many hours investigating the mines (both used and disused) returning with a large bag of rare minerals (including a piece of magnetic iron ore or lodestone).

Linnaeus's comprehension of the mineral kingdom and of structural geology, however, came as a result of his travels in his own country and, in particular, his Lapland journey of 1732. The purpose of this journey is well documented, nevertheless Linnaeus's interest in the mineral wealth of the area has received little attention. He, in fact, visited iron mines or foundaries at Härnäs, Eksund, Åbo, Esbro and Torneå, silver mines at Luleå, Hjortot and Kiomitis and copper mines at Torneå and Wasa (disused). But much more importantly, he spent 19 days at Biorknas where he was instructed in the art of assaying metals by the mine surveyor, Geyer Svanberg.

Linnaeus returned to Uppsala to continue his University training and in the summer of 1733 gave a course (of about one month) of lectures on mineralogy and the art of assaying in order to help pay his debts. He even issued a short synopsis (not published) of the course entitled *Collegium Docimasticum* (Fig. 1). The lectures attracted a large audience and he received around 200 silver dalers (each pupil being charged 2 plåtar).

In December 1733 he left Uppsala to visit the mining district of Bergslag with a view to further improving his knowledge of mineralogy. On route he called in at Sala where he spent a couple of days examining the silver mine and the extraction and assaying methods. He then continued to Falun where he stayed for over two months studying the smelting process and investigating the subterranean tunnels. By this time he had conceived a system of his own for grouping minerals and ores based on their crystalline form. He placed the mineral kingdom first among the three kingdoms of nature and divided his minerals into three broad groups corresponding roughly to simple minerals, metallic ores and aggregate minerals (in this latter group he included petrifications or fossils). He first sketched out these ideas in his *Systema lapidum* which was later expanded and finally published in the third volume of the 12th edition of *Systema Naturae* as *Regnum Lapidum* (1768).

Meanwhile, he became acquainted with the Governor of the Province, Nils

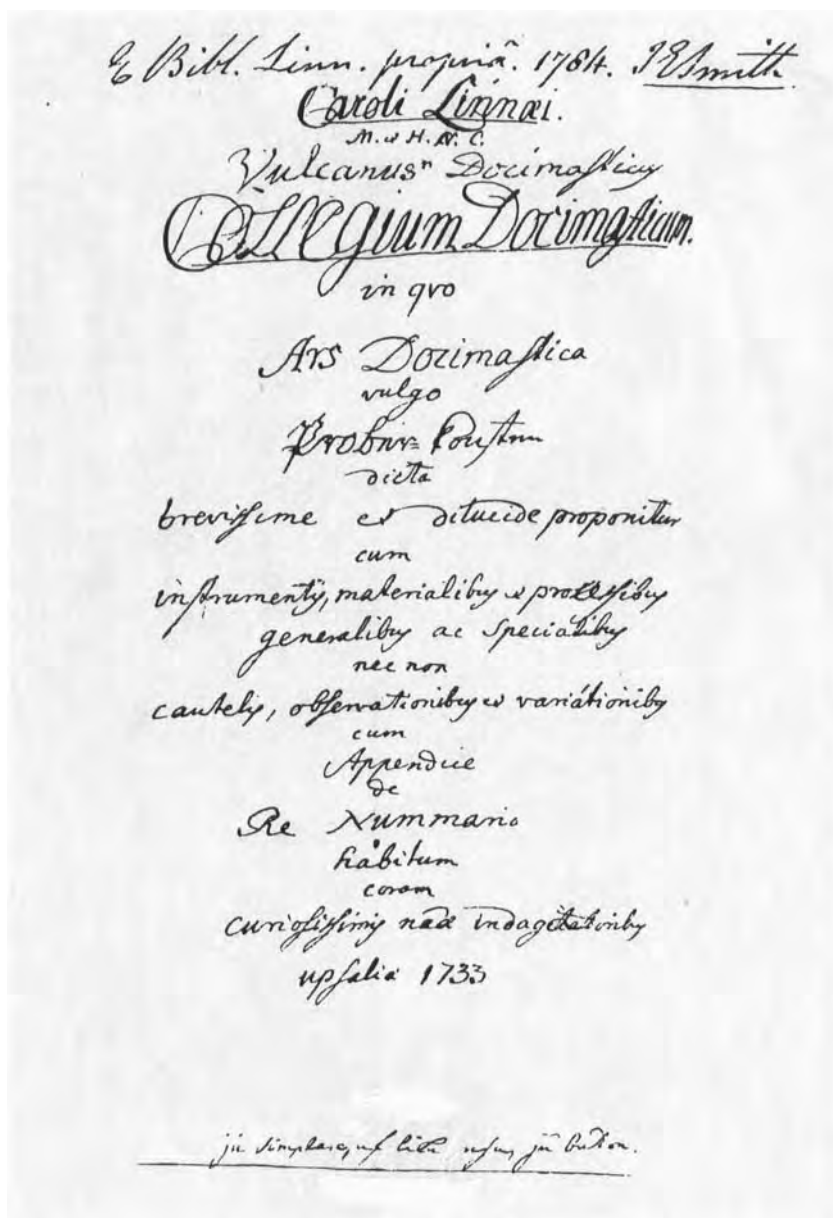


Fig. 1. Collegium Docimasticum.

Reuterholm who suggested that Linnaeus should undertake a journey at his (Reuterholm's) expense through Dalecarlia, much as he had through Lapland. Linnaeus accepted, and together with seven of his ablest Uppsala students, left Kalun on 3rd July 1734 for the mountains. They travelled over the eastern part of the mountains as far as the Röraas (= Röråks) copper mines in Norway and then back over the mountains through western Dalecarlia to Falun, six weeks later. Near the frontier, Linnaeus noted that the Vala mountain immediately

above Lake Gräfel (791 m above sea level) was grooved with many horizontal ridges and concluded that these ridges had been caused by the rising water (wave action) immediately after the deluge (we now presume them to be old shore lines caused by the damming effect of glaciers). He also observed and described ripple- or wave-marks on the Dala sandstone (Precambrian), and noted the presence of petroleum, in three separate limestone quarries in the Osmund Mountain. He also described a large pothole in the Dala River, assuming it to have been formed by the continuous rotation of the stream. The few fossils observed were restricted to the mines at Bodback. Linnaeus described the most common one (= an orthoceratid cephalopod) and concluded "There

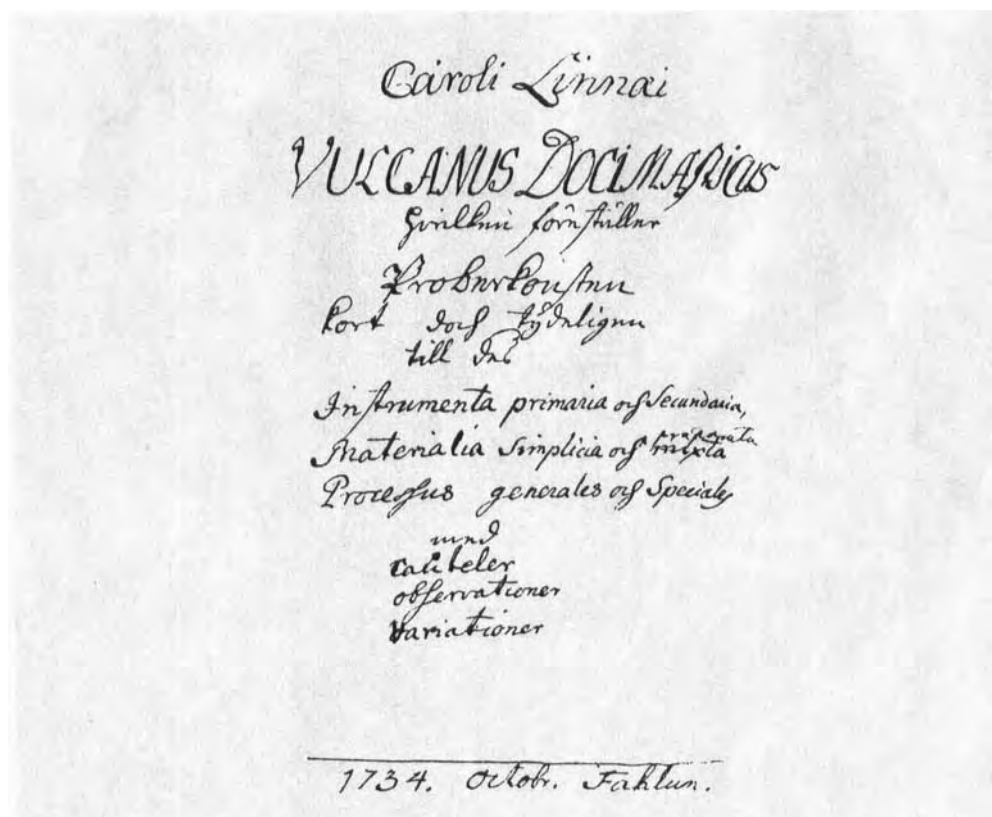


Fig. 2. Vulcanus Docimasticus.

are more fossils in the stones than grain in porridge". There is a copy of Linnaeus's journal of observations delivered to Reuterholm entitled *Iter Dalecarlicum* in the Society's strongroom. Apart from the ethnological, botanical and zoological observations, the expedition especially collected a large number of minerals, and other stones (120 different types).

Linnaeus remained in Falun until November 1734 as a guest of Governor Reuterholm. During this time, he drew up a sequel to his *Systema Lapidum* — *Pluto svecicus* (original MS in the University of Uppsala, subsequently published

in Uppsala by Carl Benedicks, 1907) and gave a course of lectures on assaying in October. These were delivered in the Assay Office to a large audience drawn from the local mining community (each paid 12–13 silver dalers). For this lecture course, he prepared another synopsis, this time entitled *Vulcanus Docimasticus* (1734). The original manuscript (Figs 2, 3) is in our strongroom and it was published in 1925.

Linnaeus spent the next three years travelling through Europe (Holland and England in particular), first acquiring his medical degree (June 1735) and then mainly pursuing his study of botany and publishing several seminal works (viz. *Systema Naturae*, 1735; *Fundamenta Botanica*, 1736; *Genera Plantarum*, 1737; *Classes Plantarum*, 1738). However, ironically, it was his background in mineralogy

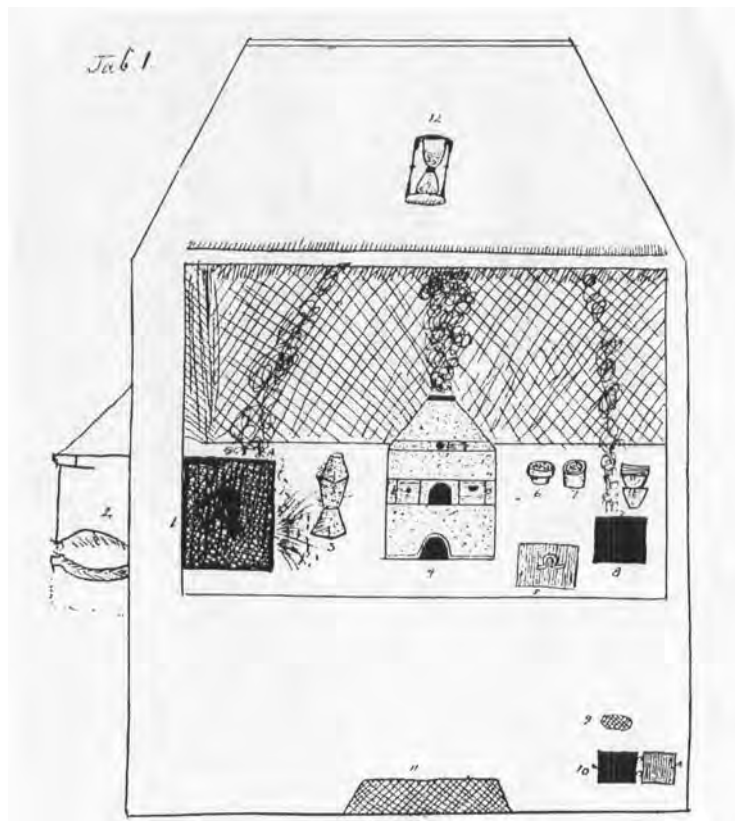


Fig. 3. Apparatus for assaying.

which was to stand him in such good stead when he finally returned to Stockholm in September 1738 and tried to establish himself as a physician. Through the auspices of Count Carl Gustav Tessin, he was awarded in March 1739 the pensionable position of public lecturer in natural history to the State Mining College (under the supervision of the Mining Council) on condition he

gave public lectures on mineralogy in the winter (in Triewald's room) and botany in the summer (at the House of Nobles). It is on record that his mineralogy lectures of February 1740 drew such large crowds that some of them had to be repeated. The original lecture notes are in our possession, and number 140+ foolscap pages with the title *Oratio (et Reflectiones) de Principiis Mineralogia*. This, plus his appointment in May 1739 by His Majesty as Physician to the Navy (also engineered by Tessin see *The Linnean* 1(1): 11–17), effectively ensured his scientific future. Nevertheless, he spent most of the next two years practising medicine, a chore he is said to have hated.

Finally, on 5th May 1741, he obtained the post he so long desired when he was appointed Professor of Medicine and Botany at Uppsala in succession to Roberg. No sooner, had he taken up his duties than he was off (21st June 1741) to Öland and Gotland on an official journey at the request of the Swedish Estates of the Realm, with the object of making preliminary assessments of the natural resources of those regions. He was subsequently to make similar trips to Västergötland (Westgothland) in 1746 and Skåne in 1749. These journeys not only provided him with further evidence of the decrease of the waters and the growth of land (a theory adopted probably from Newton) but also gave him the opportunity of examining many new rock strata and their contained fossils. They also shaped his concept of structural geology. Without doubt, his increasing awareness of the geological world came as a direct result of the meticulous observations made during the course of his extensive travels within Sweden (Lapland, 1732; Falun, 1733; Dalecarlia, 1734; Öland and Gotland, 1741; Västergötland, 1746; Skåne, 1749). Unfortunately, in this short article, it is impossible to deal with the development of this awareness, so I shall merely pick out a few observations from his last three journeys by way of illustration

### Öland

In his account of the limekiln near Böda, Linnaeus notes:

... in the broken limestone were several petrifications or Öland spikes [= orthoceratid cephalopod] which are called 'darter', *entrochi* with many rings, round and uneven blocks of pyrites, and crystal apples [= *Echinus sphaerites*—a cystoid]. I call crystal apples the globular stones found in the limestone, which are so big as an apple, look like *haematites* when they are broken, and consist of light transparent spar crystals, which are joined in the centre, sometimes with a little hole in the middle where their triangular processes show. These crystal apples are quite common in Öland; I have also collected them at the Osmund Mountain in Dalarna; ... 'darter' or *Helmintholitus nautili recti* were present in quantity here, some of them were hollow between the *dissepimenta* and filled with white spar crystals ... We searched in vain over all Öland for the snailshell on the beach, of which the 'darter' found here in all rocks are obviously petrifications.

Further on in the quarries near Torp, Linnaeus discovered even more fossils "when the blocks were separated, there were as many 'darters' or Öland-spikes as there are husks in a coarse bread, and God alone knows where else so many rare shells could be found".

*Gotland*

When they reached the eastern side of Kappelschum, they came upon a coral shore—which Linnaeus described as follows:

. . . it was very broad and covered with white and grey stones, this greatly surprised us since each stone was nothing but a coral called *Madrepora*, so that anyone who wants exquisite corals for a collection of natural history specimens need try no other place but this; every man in the world could probably get a cartload of his own corals here . . . the further we came from the sea, the less we saw of *Madreporae*, since although every stratum had originally been a *Madreporae*, it now looked like an ordinary limestone; sand and gravel stick to these corals and are incorporated in them, as if every *Madrepora* had the capacity of making stone; but time will show whether this is the way limestone rock is built.

Quarries were, of course, a great attraction to Linnaeus, and he was for ever describing their stratification and contained fossils. Thus, in the local quarries at Grottingebo, he notes that the lowermost light grey sandstone quarried for grindstones “when broken, appears wet all through, though it did not lie under water level; after drying it became much harder and denser; one saw clearly that it was derived from the sea; granules, colour and fossil shells confirmed this”. Then, in the quarries near Bursvik, he enumerates 11 successive strata of which the uppermost “is a kind of stone that lithologists call *Oolithum*, since it consists of hail-like grains, with one crust inside another, like a crayfish stone or a sugar ball. Those who believe this *Oolithus* to be nothing else but petrified spawn or roe could have an opportunity to see here more fossilized spawn than there has ever been real spawn in the whole world”.

Linnaeus's obsession with the growth of the land can be traced back to his Lapland journey of 1732 when he concluded from the presence in a lens of clay in a small hill near Hudiksvald of two types of bivalve shells (one small white and smooth = *Tellina baltica*; one larger and brown = *Mytilus edulis*) that the area around Hudiksvald was formerly under water. But it was Gotland that was to provide him with incontrovertible proof. First, the limestone coast road to Korpeklint with its bank of rounded stones and then the southernmost cape where Linnaeus concluded that “the yearly increase of the land was so obvious, we could hardly see a better example anywhere”. He then described how the ground looked like a ploughed field with furrows parallel to the beach, each furrow being from 1.8–5.4 m broad:

We walked along the beach towards the land in order to be able to count the ridges without omitting any, and we counted 77 ridges, the last of them at least 500 ells [300 m] away from the sea, as measured with our steps; if we had had instruments, so that we could have compared the 77th ridge with the sea-level and see how much higher it was, we could have ascertained how much the sea had receded in 77 years; I have never seen such an annual recession of the sea. It seems strange to me, though, that the 77th ridge is so high above the sea that one can see over the land to the western side; this implies that the cape must be of much more recent origin than one would otherwise believe.

As well as quarries and shore formations, Linnaeus also noted and described many geological oddities. For example, he observed several free-standing boulders in the vicinity of Hoburgen, one of which he concludes is:

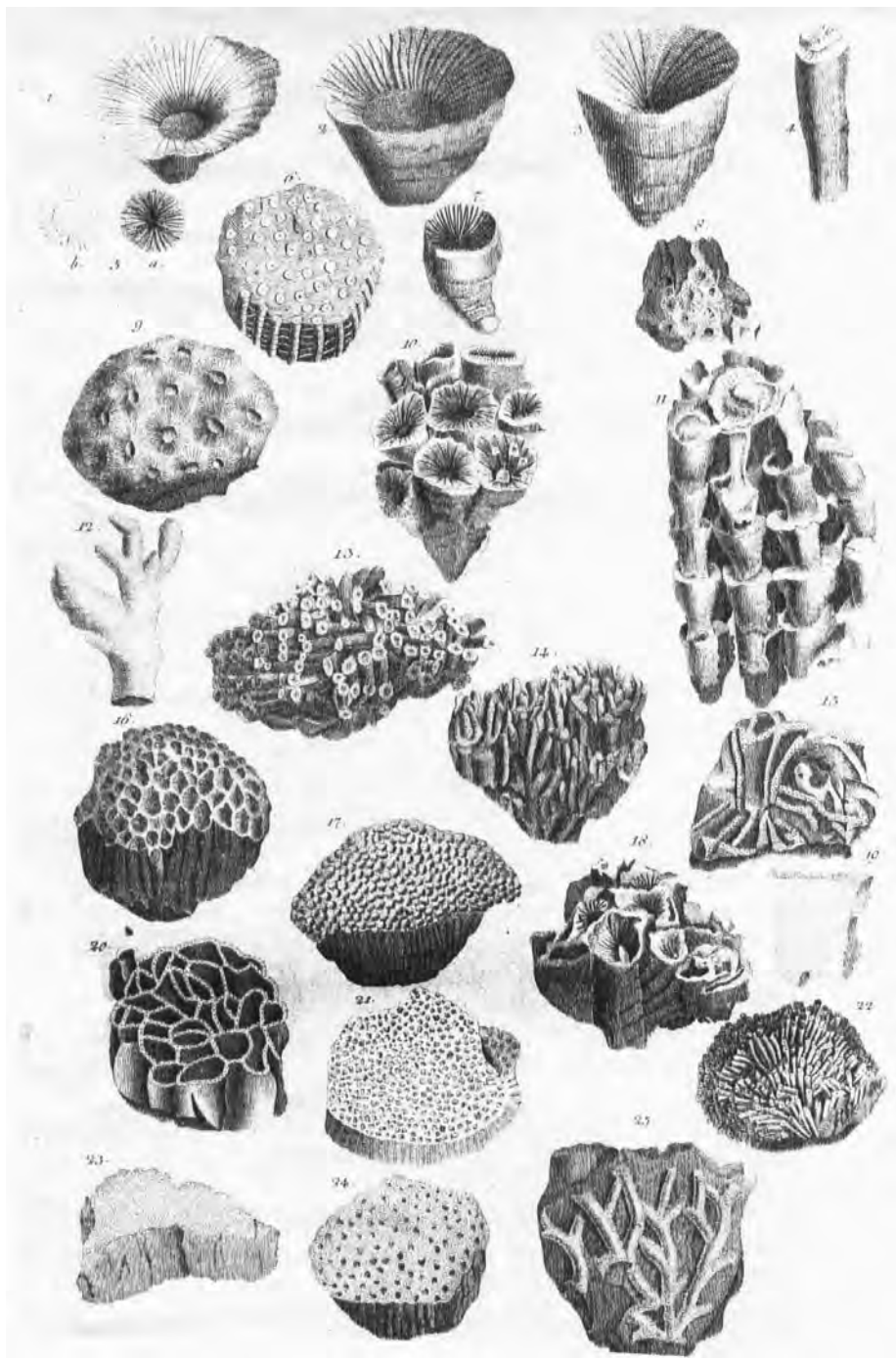


Fig. 4. Plate from *Corallia Baltica*.

... a weathered stone, so big that no human power could have brought it there [6' high  $\times$  6' thick  $\times$  14' in breadth]. It lay on the surface and consisted of a redspar-like type of Åland stone ... since all *Saxa* or greystones are generated under the earth's surface and this stone was lying altogether on the surface where there is no higher ground and all around is limestone, and since this kind of stone is foreign here, it is difficult to understand how it has arrived here, and if water had the power to roll it here from Sweden or Russia at the time this land lay under water. [We now believe them to be erratic boulders—a consequence of the last glaciation.]

As a sequel to the Öland and Gotland journey, Linnaeus published an account of the fossil corals (*Amoenitates Academicæ*, 1, 4: *Corallia Baltica*, Resp. H. Fougé, 1745) in which he gave copious descriptions of 23 species\* (Fig. 4). He also made use of much of the information on raised beaches, shell banks and terraced shore gravels in his third oration of 1743 (when the degree of Doctor of Medicine was conferred on J. Westman), entitled '*de telluris habitabilis incremento*'. In this lecture, he defended the increase of land and the decrease of water. He imagined that the whole earth was originally covered by water with the exception of a small island (= paradise) on which there was every original species (note—Linnaeus distinguished between original and subsequent species). "As the dry land emerged from the decreasing ocean, it was populated by the expanding fauna and flora." To those who thought these phenomena were also connected with the biblical deluge, he added: "He who ascribes all this to the deluge which came suddenly and passed as rapidly away, is indeed a stranger to natural science and, blind himself, sees only with the eyes of others, provided he sees anything at all."

### *Västergötland*

Linnaeus continued his practical geological observations on his visit to Västergötland in 1746 when he not only drew attention to the shell banks in Bohuslän cited by Swedenborg in 1719 as evidence of a former higher water level, but also concluded that there had been a southward migration of the mollusc fauna. However, perhaps his greatest contribution to geology was his description of the mountain Kinnekulle in which he pointed out that the horizontal strata formed a transitional formation succeeded by a series of trap-rocks. Peter Kalm, a former pupil of Linnaeus, had previously visited the region in 1742 and published an account of Kinnekulle in 1746. Linnaeus expanded on this account and had a typical section through Kinnekulle (Fig. 5) drawn for him by his pupil Johan S. Lidholm (*Iter Westrogoth*, 1747)—for another description, see also *Kine-Kulle* (*K. svenska Vetensk. Akad. Handl.*, 8, 1747: 54–57). Linnaeus in these two descriptions most remarkably drew attention to the fact that the succession of strata at Kinnekulle was also found in the nearby regions around Alleberg, Billingen and Möseberg, and then went on to suggest that these strata probably extend far further and that "the profile of Kinnekulle may serve as a clue to the strata of the earth's crust not just in Västergötland, but perhaps over the greater part of the world".

\*Only two specimens of simple fossil corals remain in the Linnaean collections. Both appear to belong to the genus *Dokophyllum*—the more worn specimen is probably *D. elegantulum* (Wedekind)

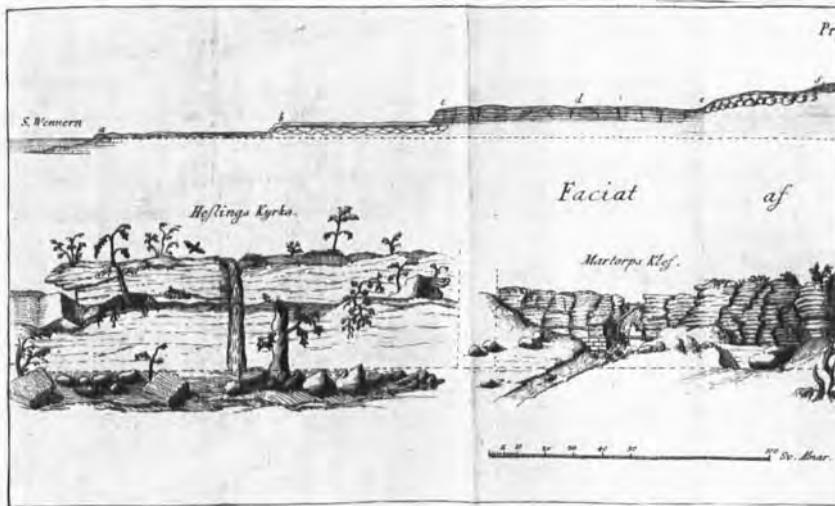


Fig. 5. Profile of Kinnekulle.

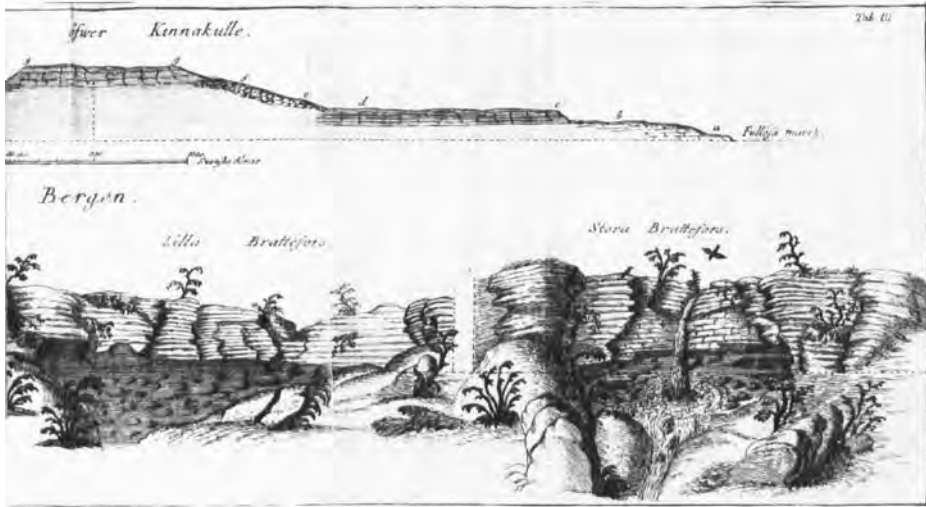
Linnaeus reiterated this view of a definitive succession of rock strata throughout the world, in the third volume of the 12th edition of *Systema Naturae* (1768) and in so doing, made it far more widely known. At the same time, Torbern Olaf Bergman (one of his students) published a physical description of the earth entitled *Physik Beskrifning öfver Jordklotet* (1768), in which he emphasized the continuity of individual beds and sequences throughout Southern Sweden—already noted by Linnaeus. But Bergman went further in recognizing the presence of primeval or basement rocks beneath the stratified series. Thus Linnaeus and Bergman can be credited with having laid the foundations of stratigraphy.

On his return from Kinnekulle, Linnaeus found several petrifications which he was later to refer to the arthropoda (Fig. 6) and which we now know as trilobites.

Between the conclusion of his Västergötland journey and the commencement of his final trip to Škane, he published two further geological papers, the first one on crystallography (*Amoenitates Academicæ*, 1, 15, *Crystallorum Generatio*, Resp. M. Kœhler, 1747) in which he described and arranged according to his new system some 40 crystals (Fig. 7). At the time, this paper was said to have caused great offence to most mineralogists, but with hindsight we can now say that it probably laid the foundation to crystallography. His second paper (*Amoenitates Academicæ*, 2, 19, *Oeconomia Naturæ*, Resp. J. J. Biberg, 1749) in which he presented his general geological ideas including the origin of various rocks and minerals—their gradual transmutation and decay—is probably the more important. For in it he not only considers the structure of the earth but also has long discourses on the vegetable and animal kingdoms, including seed dispersal and colonization of the land by plants and emigration, hibernation and associations of animals.

### Skåne

In April 1749, Linnaeus set out on his third and last journey for the State. By this time he was able to draw upon his knowledge of structural geology acquired on previous journeys. Thus he soon recognized that the Jära Wall was a raised



beach and that a giant pothole in the top of the cliff at Jettebrunsliden had been caused by the erosion of the sea—pointing out “If all giant pots are formed by water as we now believe, then this pot so high above the sea must be at least several thousand years old”.



Fig. 6. Part of page from the Västergötland diary.

He also observed that the limestone strata of Skåne lay nearly horizontal and that this species of rock (= Cretaceous) is rare in Sweden but more common in Germany and Spain. He then speculates “when the stone is looked at closely,

you find it is made entirely of shells, corals and gravel, as if thrown together in submarine channels and in some places on the shores, so that this entire lime rock is nothing but a cemetery of as many dead animals as there are grains in drift sand”.

In these and the older rocks of Skåne, Linnaeus noticed many different fossils including some peculiar petrifications which he illustrates (Fig. 8). The petrifications in question were later introduced in the third volume of the 12th edition of *Sytema Naturae* (1768) as *Graptolithus scalaris*, and although the original figure shows two separate species, we now refer to the whole group as the

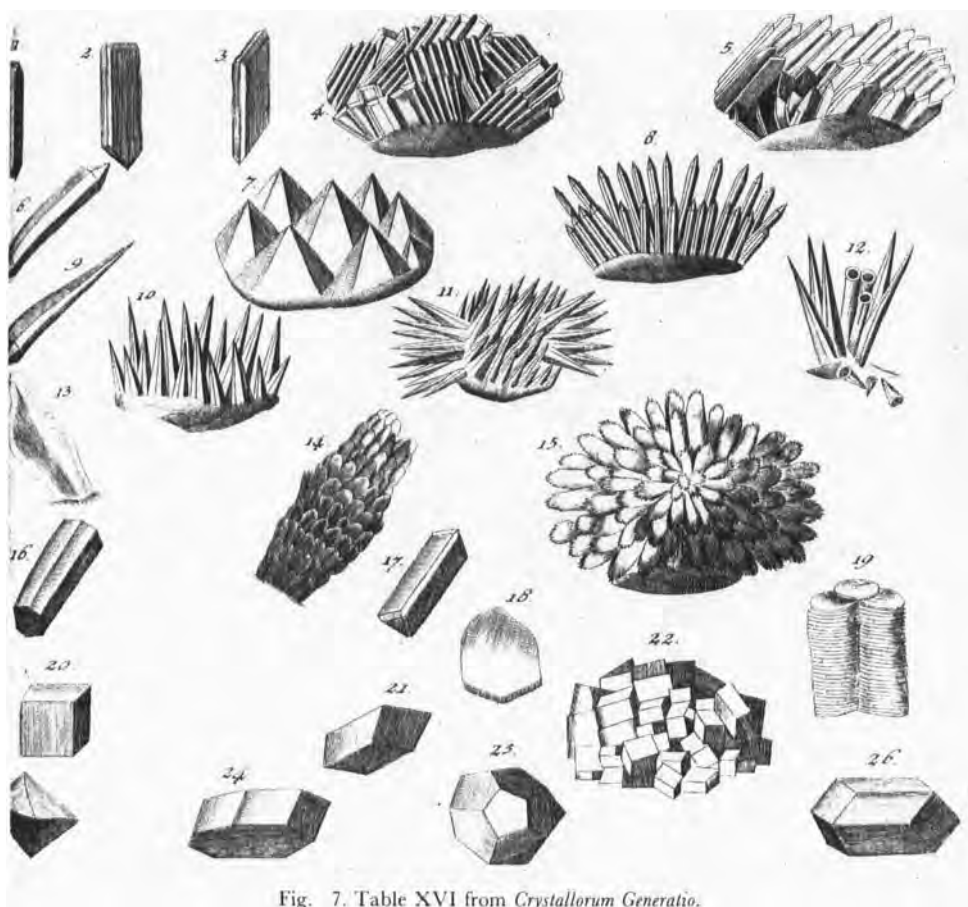


Fig. 7. Table XVI from *Crystallorum Generatio*.

Graptolites. Then in the aluminous shales at Andrarum, he collected further examples of trilobites which he notes are no larger than flies whereas those he had collected previously in Öland and Västergötland (Fig. 6) were as large as his fist! Ten years were to elapse before he described any of these trilobites, then he lumped them together with a specimen from Västergötland in Count Tessin's Museum under the name *Entomolithus paradoxus* (1759: *Petrificat Entomolithus paradoxus*, *K.svenska Vetensk.Akad.Handl.*, 20, 19–24, 2 pls). In this paper, Linnaeus points out that Figure 1 (Fig. 9) “shows one of the clearest specimens I have ever seen, among so many thousand fragments. More remarkable in this



Soon after returning from Skåne, and possibly as a consequence of the numerous fossils he had observed on the trip, Linnaeus took upon himself the task of describing the cabinet of his patron and friend, Count Carl Gustaf Tessin. Tessin's collection consisted mainly of minerals and fossils and in the subsequent publication *Museum Tessinianum* (1753) Linnaeus not only gave clear

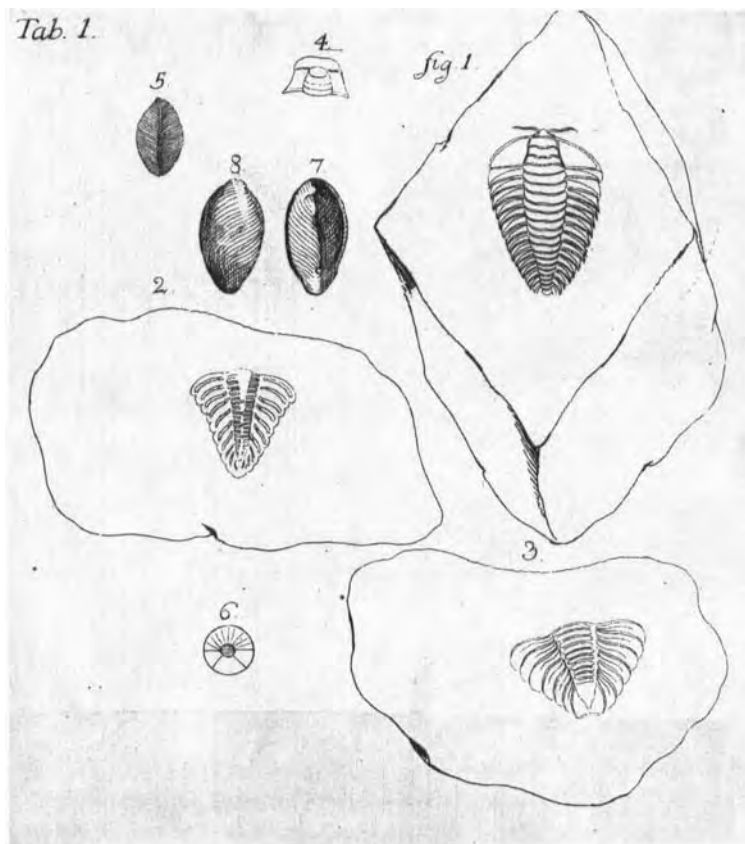
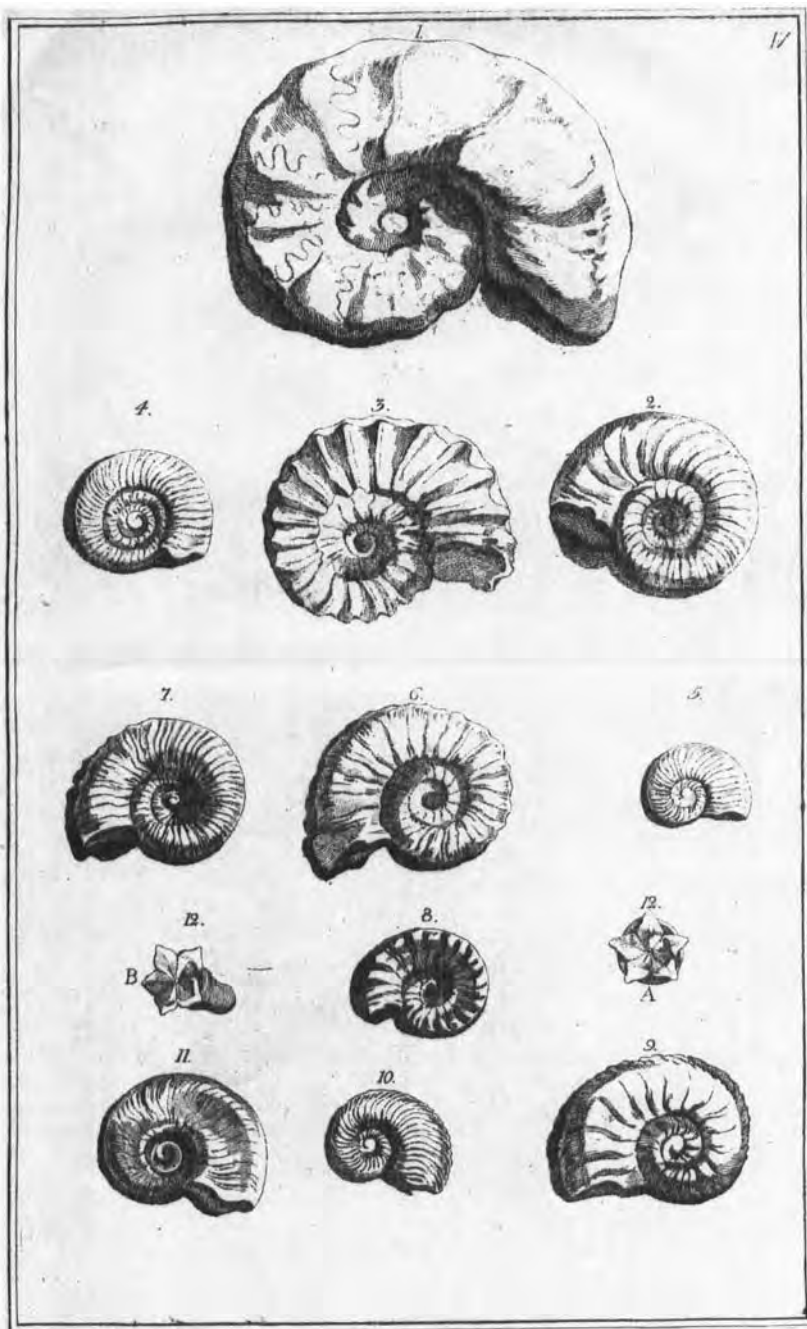


Fig. 9. Table 1 from *Petrificat Entomolithus paradoxus* 1759.

and concise descriptions of four different ways in which fossils can occur, but also described a great many fossils including belemnites, ammonites (Fig. 10) corals, branchiopods (Fig. 11), molluscs and plants. Interestingly, Linnaeus went on to describe some 20 species of branchiopod under the name of *Anomia* in the *Systema Naturae* (1768) where he also identified and named numerous other fossils including birds, fishes and insects (in amber).

To conclude this article, I shall quote a small part of Linnaeus's preface to the *Museum Sacrae Regia Majestatis Adolphi Friderici Regis* etc. 1754, translated by our Founder member J. E. Smith, *Reflections on the Study of Nature*, 1785:

In the first place, we consider the Fossil Kingdom, we shall see the manner in which *water* deposits *clay*; how it is crystallized into *sand* near the shore; how it wears down *shells* in chalk, dead plants into *vegetable mould*, and *metals* into *ochre*; from all which substances, according to the laws of nature, *stones* are formed: thus from sand originates *whetstone*, from mould

Fig. 10. Table IV from *Museum Tessinianum* 1753.

*slate*, from chalk *flint*, from shells and earth *marble*, and from clay *talc*. In the cavities of these, concrete beautiful pellucid *crystals*, which consisting of various sides opposed to each other, form a number of regular figures, which the most ingenious mathematician could scarcely have invented, and among which the glittering *gems* and brilliant *adamant* find a place.

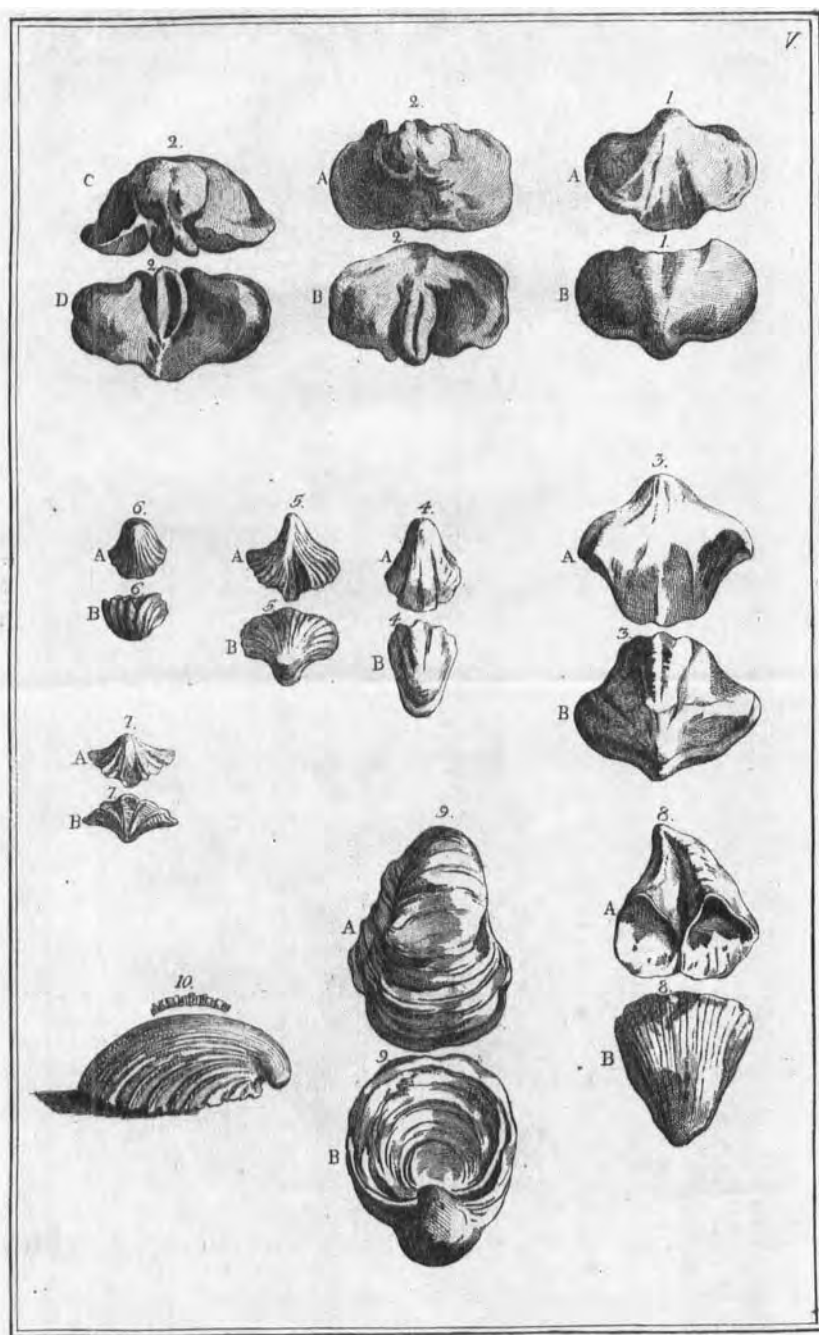


Fig. 11. Table V from *Museum Tessinianum* 1753.

Here the pondrous and shining *metals* are constantly forming; the ductile *gold*, which eludes the violence of the fire, and which can be extended in length and breadth to an almost incredible degree! Here is found the wonderful *magnet*, of which no mortal has hitherto been able to learn the

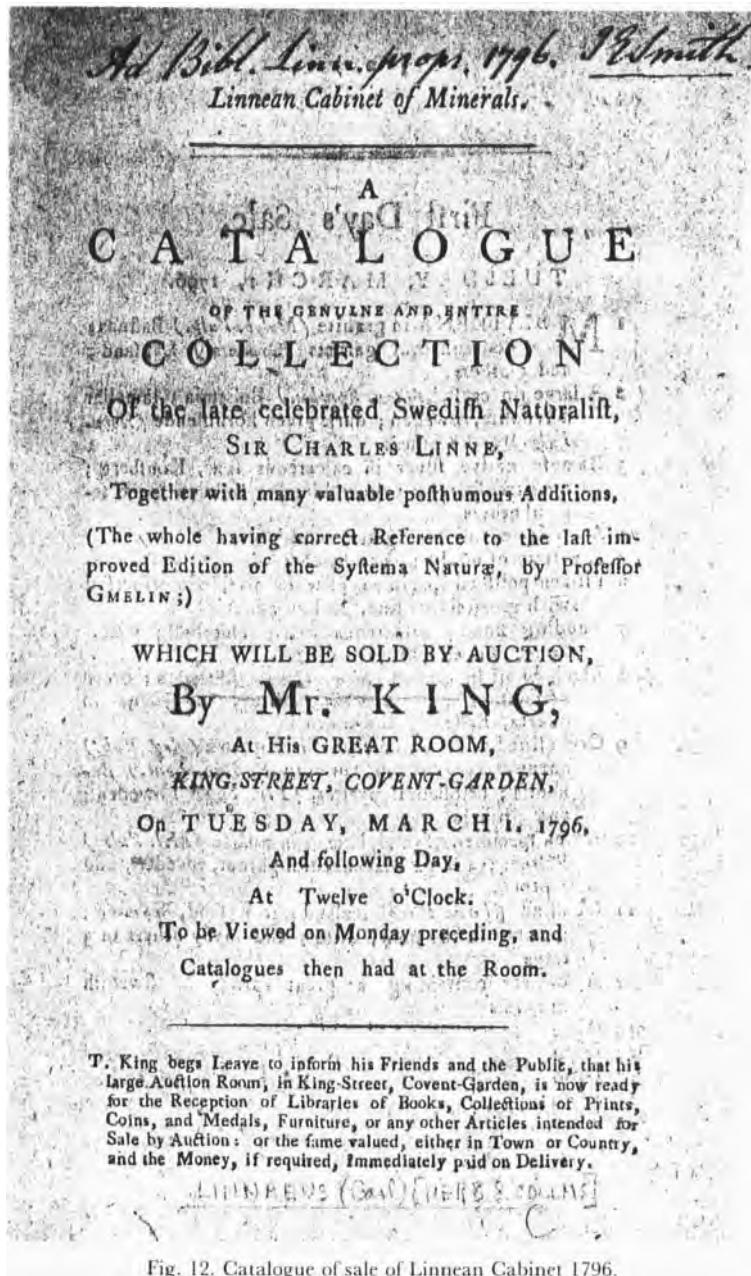


Fig. 12. Catalogue of sale of Linnean Cabinet 1796.

secret law of its mutual attraction with iron, or of its constant inclination towards the poles.

The various strata of stones often concealed in the highest summits of the Alps, are most ancient monuments, which place before our eyes the many changes of the old globe, and proclaim them to us, whilst all other things are silent on the subject.

The innumerable *petrifications* of foreign animals, and of animals never

seen by any mortal in our days, which often lie hid among stones under the moist lofty mountains, are the only remaining fragments of the ancient world, and reach far beyond the memory of any history whatever.

So large a quantity of these and other stones cover the globe, that no man has hitherto been able to break through them, and penetrate to the originally created earth.

### Reference

NATHORST, A. G., 1909. Carl von Linné as a geologist. *Smithsonian Report* no. 1912. Translated and condensed from the original –*Carl von Linné, Säsom Geolog*. Af A. G. Nathorst. Upsala 1907. An excellent summary of Linnaeus's contribution to structural geology.

B.G.G.

*Footnote:* Unfortunately, Smith was not really interested in Linnaeus's collections of minerals, rocks and fossils. Thus he arranged for the Linnaean Cabinet of Minerals to be sold by auction by Mr King on March 1st and 2nd, 1796, in his Great Room, King Street, Covent Garden (Fig. 12). The sale realized a little over £70. We presume that some of the drawers offered for sale contained both minerals and fossils since the only fossils remaining today in the Linnaean collection comprise two simple corals and seventeen species of brachiopod (Brunton, C. H. C., Cocks, L. R. M. & Dance, S. P., 1967, Brachiopods in the Linnaean Collection, *Proc. Linn. Soc. Lond.*, 178, 2: 161–183). Some of Linnaeus's fossils apparently remained in Sweden and were not sold to Smith having been given to the University of Uppsala by his son.

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## Record of the Proceedings of The Linnean Society of London for the 200th Session (1987–88)

### Contents

1. Scientific Meetings.
2. Social Events.
3. The Bicentenary Meeting.
4. Balance Sheet and Accounts.

### 1. Scientific Meetings

As the session embraced the first half of the bicentenary year, all but one of the multi-paper scientific meetings and the one general interest lecture were held jointly with other societies. There was one one-paper scientific meeting, this being the Biological Council Annual Lecture, awarded in 1988 to the Society. All meetings were designated as bicentenary meetings and all were regarded as successful although the attendance figures might not seem to reflect this. Details of the programmes were published in *The Linnean* 3(3):16–19 and 4(1):7–8 and subsequently most of the proceedings will be published as in the table below:

Date	Title	Cooperating Society	Attendance	Proceedings
15 Oct 87	<i>Fertility in Zoo, Domestic and Feral Populations of Animals</i>	Zoological Society of London	47	<i>Zoo. J. Linn. Soc.</i>
13 Nov 87	<i>Novel Approaches to the Systematics and Identification of Fungi</i>	British Mycological Society	83	<i>Bot. J. Linn. Soc.</i>
26 Nov 87	<i>The Case of the Vanishing Squirrel</i>	London Natural History Society	61	—
17 Dec 87	<i>Biota and Paleotmospheres</i>	Geological Society of London & Palaeontological Association	83	<i>J. Geol. Soc.</i>
14 Jan 88	<i>"An Inordinate Fondness for Beetles" – Problems arising from the Profusion of Insects</i>	Royal Entomological Society	103	<i>Zoo. J. Linn. Soc.</i>
25 Feb 88	<i>Natural Products as Pharmacological Probes and in new Pharmaceuticals</i>	Pharmaceutical Society of Great Britain	137	not published but see <i>Linnean</i> 5(2)
14 Apr 88	<i>Leaf Surfaces and Survival Strategies</i>	Biological Council Lecture	37	<i>Bot. J. Linn. Soc.</i>
19–20 Apr 88	<i>The Ecology of Dungeness</i>	British Ecological Society	59	<i>Bot. J. Linn. Soc.</i>
1–2 June 88	<i>Evolution, Ecology and Environmental Stress</i>	Society Symposium	64	<i>Biol. J. Linn. Soc.</i>

### *Specialist Groups*

The Freshwater Group arranged a two day international meeting, on 1–2 Oct 1987, the first day being papers read at Burlington House and the second a workshop at Royal Holloway and Bedford New College.

The Palynology Group met twice, the second meeting attracting speakers from overseas.

The report of the meeting of the Meiofauna Group held on 28–29 March 1988 is reported under Society Notes p. 5 as it was thought to be of current general interest.

### *Regional Meetings*

During the session a workshop on *Melanism* was held in Manchester, on 5 November 1987, a report of which appeared as a letter in *Linnean* 4 (2):14.

For the record, a meeting was held away from Burlington House at University College London, with support from the Society, to mark the centenary of N. I. Vavilov. This is written up in *The Linnean* 4 (3):43 and is being published in *Bot. J. Linn. Soc.* See also p. 13.

## **2. Social Events**

### *Royal Reception and Foundation Day Dinner*

The day chosen was 17 March 1988 as the 18th, being a Friday, was not suitable to the Royal programme. Her Majesty The Queen, our Patron,

accompanied by His Royal Highness The Duke of Edinburgh and members of the Household were received by the President and Executive Secretary at the steps of the Rooms at 18.35. They were conducted to the Meeting Room where, after the presentation of the Officers and their spouses, the members of Council, the Bicentenary Committee, Staff and their partners were introduced. The Queen was presented by the President with a specially bound copy of *A Bicentenary History of the Linnean Society*, Gage and Stearn, with Professor Stearn in attendance. The Queen and Prince Philip signed a specially prepared page at the back of the Roll and Charter Book and then visited the Library to meet the Fellows and their guests and the Society's voluntary helpers. The Royal Party also examined and discussed the displays in the Library: the Bicentenary Exhibit, Dr F. A. Bisby; the Kimberley Research Project, Mr M. J. S. Sands; Shells of the United Kingdom, Mrs S. Morris; Examples of Work, the North East Kent Decorative and Fine Arts Society; Specimens from the Linnaean Collection, Drs Fitton, Jarvis, Joysey and Robson; "Smith and his Circle"—prints from the Society's very extensive collection selected by Mrs Margot Walker and mounted by Miss G. L. Douglas. Prince Philip was presented with a copy of the biography of *Sir James Edward Smith*, M. Walker, by the author.

As the record of the occasion, the Officers and then all others present added their signatures at the back of the Roll and Charter Book. Two hundred and thirty-two people were present. The Royal Party left shortly after 19.30.

The subsequent Foundation Day Dinner, held at the Hyde Park Hotel, was attended by one hundred and sixty-one Fellows and guests who included all members of the staff. The toast to the Patron was proposed by the President. In the manner he had adopted at dinners of the Linnean Club Dining Club the President did not make a speech prior to proposing the toast to the Society. However, his five minute dissertation encouraged Professor W. T. Stearn to respond and reminisce briefly, he being one of the few Fellows present who had also attended the sesquicentennial celebrations. Professor Stearn proposed the toast to the Guests. In responding on the guests' behalf and prior to proposing "Absent Friends", the Executive Secretary reminded Fellows that these included Professor Jack Hawkes (who had done so much to enhance the Society's image during the Bicentenary as the coordinator with the media).

### *Bicentenary Dinner*

The Bicentenary Anniversary Meeting was followed by a Dinner at 94, Piccadilly. The one hundred and nine people present included the four guests from Sweden (p. 47), the medals and awards winners and their guests, Professor I. Moring of the Swedish Linnaeus Society, Fellows and their guests. The incoming President, Professor M. F. Claridge, presided and the wing seats of the top table were taken by Dr D. M. Kermack, outgoing Zoological Secretary (see p. 54) and Dr D. F. Cutler, chairman of the Bicentenary Committee.

After Dinner the President reported the following exchange of messages with Buckingham Palace:

"With Humble Duty the Foreign Members and Fellows of the Linnean Society of London assembled with their guests at the Naval and Military Club, Piccadilly send greetings to Your Majesty on the occasion of the

dinner being held to celebrate the Society's Bicentenary."

Michael Claridge, President

to which the following reply was received:

"I send my warm thanks to you, the Foreign Members and Fellows of the Linnean Society of London, gathered together with their guests this evening, for their kind and loyal message of greetings, sent on the occasion of the Society's Bicentenary. As your Patron, I was delighted to receive this message and send my best wishes to you all for a most enjoyable occasion. I very much enjoyed the Reception held at Burlington House last March."

Elizabeth R.

The President then called on Professor O. Hedberg who proposed the toast, "The Patron". The President then proposed "The King of Sweden and the other Honorary Members". Professor W. G. Chaloner, past President, proposed "The Society" and the President replied. The final official toast, "The Guests", proposed by the President was responded to by Professor Per Brinck, F.M.L.S. However, it also being the 82nd birthday of Mr E. Milne-Redhead he said a few words and completed proceedings by proposing the health of the President.

### *The Summer Evening Party*

This replaced the annual *Conversazione*. It was held from 19.00 to 22.30 on 23 June 1988 in the Royal Botanic Gardens, Kew, by kind permission of the Director. With no restriction on space, this enabled a large number of people to enjoy the unique atmosphere of Kew in private and at low cost. The organisers of the celebratory joint meetings and their Presidents were included amongst those invited to attend. Representatives of official organisations had initially also been asked to attend but only Professor J. T. Williams representing the International Board for Plant Genetic Resources eventually took advantage of the offer.

Guests, who were greeted by the President and Mrs Claridge at the Victoria Gate were able to stroll in the Gardens at will. The Temperate House and the Australian House were open all evening, the former acting as the focal point. Music was provided by the Zelenka Ensemble. Three displays, the Bicentenary exhibit, the Postage Stamps and the Kimberley exhibit were set up in a large marquée to the south of the Australian House. This also held the refreshments and provided additional cover. In the event, it had little use as the exceptionally clement weather allowed everyone who wished to picnic in the open.

Four hundred and twenty-one people including 162 official guests attended.

During the intermission, Professor Arthur Bell read and presented an illuminated address from the Royal Botanic Gardens, Kew. This was accepted by the President on behalf of the Society.

## **3. The Bicentenary Meeting**

This was held on Tuesday 24 May 1988 with Professor Chaloner, President, in the chair. Opening the meeting the President welcomed collectively the delegates of Swedish and British organisations which had indicated a wish to be represented; Professors Per Brinck FMLS, Eric Jarvik FMLS, Bengt Jonsell FLS

and Orjan Nilsson, whom the Society had invited as its special guests for the day; medals and awards winners, other guests and Fellows.

The President reported the receipt of messages of greetings and congratulations in connection with the bicentenary form:

The International Council of Scientific Unions  
 The Scientific Committee on Problems of the Environment (SCOPE)—(ICSU)  
 The Committee on Data for Science and Technology  
 The Food and Agriculture Organization of the United Nations  
 The Council of Europe  
 The Commission of the European Communities—Concertation Unit for  
 Biotechnology in Europe  
 The Ulster Museum Botanic Gardens, Belfast  
 The Royal Museum of Scotland  
 The National Museum of Wales  
 The Swedish Museum of Natural History  
 The Smithsonian Institution  
 The National Museums of Canada  
 The Freshwater Biological Association  
 The Royal Society of Arts  
 The Zoological Society of London  
 The Botanical Society of the British Isles  
 The Systematics Association  
 The American Society of Plant Taxonomists  
 The Société Linnéenne de Provence  
 Sociedade Broteriana  
 37 Foreign Members and Fellows in Southern Africa  
 BIOSIS

He reported that the Society had exchanged greetings and congratulations with La Società Botanica Italiana, Florence which had celebrated its centenary with events and a symposium in January 1988.

### *Elections*

Following the reading of the Form of Recommendation for one Foreign Member for the third time and after extracts of the relevant Bye-Laws had been recited, the President appointed as Scrutineers Drs J. M. Edmonds and M. Edwards and Mr T. Pain and declared the Ballots open. The results of the ballots were:

New Members of Council	replacing
Mr F. H. Brightman	Professor W. G. Chaloner
Professor M. F. Claridge	Mr E. F. Greenwood
Dr D. F. Cutler	Dr D. M. Kermack
Dr P. A. Henderson	Professor C. H. Stirton
Mr M. J. S. Sands	Professor M. H. Williamson
Foreign Member:	
Dr Vladimir Koltun	Union of Soviet Socialist Republics

Fellows and Associates as in *The Linnean* 4(3):11. Unusually, Dr P. B. H. Tinker was present at his own election as he was attending as the representative of the Natural Environmental Research Council.

The Officers elected for the 1988–89 session were:

President: Prof M. F. Claridge  
Treasurer: Mr C. M. Hutt  
Secretaries: Dr F. A. Bisby, Botany  
Prof J. Green, Zoology  
Prof J. D. Pye, Editorial

### *Presentations of Medals and Awards*

Prior to reading the citations and making the presentations, the President observed that this was the centennial of the presentation of Linnean Medals which had themselves been instituted to mark the Society's centenary. After the initial presentations, in 1888, of a medal each to a botanist and a zoologist, the practice had been usually to award only one medal a year until 1958 when it had been changed to the regular award of two. Prior to reading the rules and the citation for The Jill Smythies Award the President reported that this, the bicentenary meeting had been chosen by the donor as the occasion for its inaugural award.

### *Linnean Medal for Botany*

#### *Professor John Laker Harley*

Jack Harley's very distinguished research into the physiology of mycorrhiza has been published in numerous papers and a number of books over a period of more than fifty years. These show a remarkable dedication to research into a subject of great fundamental scientific interest and wide practical application.

From Leeds Grammar School, Jack went to Wadham College, Oxford, with an Open Exhibition of the College and scholarships from his school and from the City of Leeds. Three years later he gained a first class honours degree in botany and the Christopher Welch Scholarship for research at Oxford. From the start, this was concerned with mycorrhiza—absorbing organs produced symbiotically by fungi and roots on many higher plants. After gaining his D.Phil in 1936 (on the mycorrhiza of beech) he continued research as a senior student of the 1851 Exhibition until he was appointed as a departmental demonstrator in the Oxford botany school in 1939 and worked there for a year before joining the army.

In 1940 he enlisted as a Signaller in the Royal Corps of Signals, and later moved into Operational Research. He served in India and Burma as well as in the UK, and had risen to the rank of Lieutenant-Colonel by the time he was demobilized in 1945. He returned at once to Oxford and resumed his researches on root-physiology which dealt particularly with the uptake of salts, the translocation of phosphates, and sugar-phosphate metabolism in the fungal hyphae which have been shown to release inorganic phosphate to the root. In 1959 he published a profound monograph on the subject—'The Biology of Mycorrhiza'—which was translated into Russian a few years later; a second

edition followed in 1969. In recognition of his fine research record, he was elected a Fellow of the Royal Society in 1964. In the following year he returned to Yorkshire as a Professor of Botany in the University of Sheffield, continuing there as strongly as ever, his chosen research. As things turned out, however, he spent only four years at Sheffield since in 1969 he returned to Oxford as Professor of Forest Science. This move presented Harley with quite a challenge; previously the chair had been one of forestry and the occupants had all had long experience of practical forestry in the tropics but in 1969 the University decided that the chair should become 'forest science' and the emphasis moved to a more scientific approach to this practical though complex subject. To this post, which he held until his retirement in 1978, and to forestry generally, Jack Harley brought great scientific distinction and much good practical common sense. The intensity of his research into the physiology of mycorrhiza was coupled with a very wide knowledge of biology and of practical affairs at home and abroad.

This splendid coupling of research at the frontiers of knowledge with a broad understanding of matters of public concern made Harley an excellent choice for high office in various scientific organizations. He has been President of the British Mycological Society (1967–68), the British Ecological Society (1970–72), Section K of the British Association (1972) and the Institute of Biology (1984–86). In addition he has been a member of the Agricultural Research Council (1970–80) and of the councils of many other bodies.

Throughout his career at Oxford and at Sheffield, Harley had a fine record as a teacher. He stimulated and helped a great number of students, many of whom have gone on to do important research of their own, and to hold positions of great responsibility.

He was elected a Fellow of the Linnean Society in 1938, and it is particularly appropriate that we should recognise his great achievements as a biologist in this, our Bicentenary year, and the fiftieth anniversary of his election to the Society.

#### *Linnean Medal for Zoology*

##### *Sir Thomas Richard Edmond Southwood*

It is understood on good authority that Sir Richard Southwood's earliest involvement in zoology was an interest in cigarette cards of fish, which he collected at the age of three. He was, according to the same authority, a backward reader until given a book on butterflies at the age of six. He started collecting insects at the age of seven, and by the time he was eight was engaged in mounting and arranging a serious collection. While still a schoolboy, he published a paper with Dr C. J. Johnson of Rothamsted on insect dispersal. On entering University he chose Imperial College, already with a strong entomological reputation, and was stimulated by the lectures of the then Dr O. W. Richards and Dr Nadia Waloff (who was, to the delight of all, present at the meeting). Professor Southwood was also one of the earliest first-year students of the present Zoological Secretary, Dr Doris Kermack.

After graduating, he worked on the systematics and ecology of the Heteroptera at Rothamsted, gaining his Ph.D. and returning to Imperial College, first as research assistant and then lecturer. He embarked at Silwood

Park on research on insect/plant relations—a continuing theme of much of his later work and particularly that between white fly and *Viburnum tinus*. In 1967 he was made head of the Department of Entomology and Applied Zoology and Director of the Silwood Park Field Station, and went on to make profound changes in the teaching of zoology and in the buildings at both Silwood Park and in South Kensington. It was at Imperial College in 1971 that he started on his project on Succession, putting the role of insects, birds and mammals into plant successional theory. By 1977 he had been made Chairman of the Division of Life Sciences following a reorganisation of the biological departments in the College. Of his many publications throughout his time in Imperial College, *Ecological Methods*, first published in 1966, with a further edition appearing twelve years later is especially worthy of mention. In 1979 he moved to Oxford to take the Linacre Chair of Zoology, and a mere eight years after taking that appointment he had become Pro Vice-Chancellor and Vice Chancellor elect of the University of Oxford.

He has carried many responsibilities beyond those of the Universities of London and Oxford. He was appointed to the Trustees of the British Museum (Natural History) in 1973, and became their Chairman in 1980. He has served as a member or chairman of many committees associated with the A.F.R.C. and Natural Environment Research Council, and on the Advisory Board of the Research Councils. He has also been a long serving member and then chairman of the Royal Commission on Environmental Pollution, he is currently chairman of the National Radiological Protection Board. In 1977 he was elected to the Royal Society, of which body he was made Vice President only five years later. Most recently he has been elected a Foreign Member of the United States National Academy of Sciences and of the Norwegian Academy. In 1984 he was made Knight Bachelor.

It is not possible in this brief citation to do justice to his many other contributions to public service in the realm of biology. But on this occasion his period as Vice-President of this Society and election to the Presidency of two of its offshoots—the Royal Entomological Society and the British Ecological Society—must, of course, go on record. His presidency of those two societies alone encapsulates the strength and breadth of his contribution to our sciences. The Society is delighted to be able to award the Linnean Medal for Zoology to so worthy a candidate in this, its Bicentenary year.

*The H. H. Bloomer Award*

*Dr Roger David Ransome*

Roger Ransome is an acknowledged authority on one of Europe's most extraordinary mammals: the Greater Horseshoe Bat. From an initial schoolboy interest in badgers, he was introduced to bats by his French master and began a serious study of the Greater Horseshoe at the age of 16. By continuous, dedicated observation over the last 32 years, he has compiled what has been called "one of the best data sets on lifetime reproductive success of any mammal". This is no mean feat for a species that may breed up to 25 years of age—his "favourite", number 738.RDR, certainly lived well beyond this age.

He took his first degree at Bristol University, presumably because it is in the middle of his study area. He then obtained a post at Dursley Grammar

School—now Rednock Comprehensive, in which he is Head of Department. In 1962 he initiated a project in the Royal Society “Science Research in Schools” scheme, which has continued uninterrupted to the present. Such projects must involve school pupils in research activities and his total influence in this way, on children over a period of 26 years, must have been immense. At least one of them is now a University lecturer in Zoology. He has also been involved at the Royal Society in the Joint Committee for Science Research in Schools, on which he represented the Association for Science Education for four years.

Several of his papers have become primary references. In a recent multi-author work on bats, no less than half the international contributions cited his work, and many mammalogists are eagerly awaiting the next instalment of his unique data. In 1979 his collected publications were awarded the Ph.D. degree of Bristol University, yet within a year he published a monograph that had not been included in the work submitted for that degree! That book not only graphically describes the Greater Horseshoe Bat but also gives a very clear introduction to the various aspects of energy budgeting that are vital to its survival and are of wide significance in biology.

He has contributed to the International Bat Research Conferences in Yugoslavia, Kenya, New Mexico and Scotland—indeed he took his family to America and soon after their arrival in Los Angeles he drove them out onto the freeways so that they could all visit the Grand Canyon en route to Albuquerque. He has also dedicated much time, effort and personal expense to the conservation of bats—being instrumental in getting protection under the Nature Conservancy Council, notably for the colony at Woodchester Park Mansion. (His reputation in that respect may have attracted the colony of hippies who also sought refuge there this Spring—but fortunately soon moved on). He has personally undertaken the strenuous and unglamorous task of devising and fitting vandal-proof grills at the entrances to bat roosts.

Despite the inevitable “Batman” gibes, he has relentlessly pursued his studies and their related causes.

He is undoubtedly a most worthy recipient of the H. H. Bloomer Award for 1988 to an amateur zoologist.

### *Jill Smythies Award*

#### *Miss Ann Farrer*

Ann Farrer was born in Australia but left at the age of three to come with her parents to live in the village of Clapham in Yorkshire. Her uncle, Reginald Farrer, the famous collector of Chinese plants, had lived in the same village.

She graduated from Manchester University in 1971, having studied English and History of Art. Two years later she took up botanical drawing, working initially for Dr Edmund Launert at the British Museum (Natural History), preparing black and white plates for the *Flora Zambesiaca*. At an early stage in her career she expanded her work to include the painting of colour plates. She quickly gained a reputation for speed and accuracy and much work flowed her way from other institutions, most notably the Royal Botanic Gardens, Kew.

In 1977, she won a Churchill scholarship; this enabled her to travel to India with Oleg Polunin and to prepare from living plants the drawings for the book

*Flowers of the Himalaya*. This initial introduction stimulated in her a keen interest in that region, resulting in many subsequent visits, mostly as the leader of trekking parties.

She has illustrated several books: *The Flora of Aldabra*, *Collins Guide to Grasses, Sedges and Rushes*; *BSBI Handbooks* on Umbellifers and on Docks and Knotweeds, *Flowers of the Balkans* and the *The Vegetation of Europe*. She has frequently had illustrations published in *The Plantsman*, *Curtis's Botanical Magazine* (now *The Kew Magazine*) and *The Kew Bulletin*.

Over the years she has acquired a reputation for hard work and a conscientious approach to her work. She is self-critical, seeking to attain accuracy and perfection in all her drawings and paintings. The esteem in which she is held for her artistic ability is amply supported by the fact that she has been awarded three gold medals by the Royal Horticultural Society for works submitted at exhibitions; recently she provided a painting for the Lindley Library.

In her expertise she spans a wide range of requirements, not only meeting the demands of professional botanists with her skill but also providing pleasing but nevertheless accurate portrayals of plants for books for a wider audience.

Through her artistic talents she has both contributed to, and enhanced, the enjoyment of enthusiastic amateurs and also increased the value of the work of professional research botanists. For these achievements, Ann Farrer is the richly deserving first recipient of The Jill Smythies Award.

#### *The Bicentenary Medal*

*Dr Richard John Gornall*

Richard Gornall did not apparently do any botany at school, but instantly took to the subject at the University of St. Andrews, where he graduated with a B.Sc. first class honours gaining the Class Medal and Margaret Laing Bell Prize for the best botany degree in 1975.

His taxonomic leanings were apparent even at this stage, notably in the choice of subject for his two year B.Sc. thesis: "A biosystematic study of *Ranunculus flammula* L. and *R. repens* L., with particular reference to Loch Leven, Kinross", the substance of which was published in the *New Phytologist*.

As an undergraduate he was an active member of several societies, including the Literary Phoenix Society, which he helped rescue from bankruptcy, and the infamous all-male Kate Kennedy Club. Each spring this club organises an historical pageant, the centrepiece of which is a good-looking student member dressed as the legendary niece of a sometime Bishop of St. Andrews. Richard, apparently not pretty enough, failed to get this part, but did lobby for the admission of women to the Society. He married his wife, Morag, in 1974, and in September 1975 they moved to Birmingham where Richard joined the M.Sc. course in Conservation and Utilization of Plant Genetic Resources in Professor Jack Hawkes' Department at the University. Here he was awarded the Ratcliff Prize for his efforts, and his dissertation on recombination systems in *Avena*, like his honours project, also formed the basis of publications, this time in the *Biological Journal* and the *Canadian Journal of Botany*. Richard then left Britain to become a research student at the University of British Columbia, being awarded

an Isaac Walton Killam Fellowship for the period 1976–1980. Richard's Ph.D. was on the generic limits and systematics of *Boykinia* Nutt. and its allies, a group of genera of horticultural interest in the Saxifragaceae. Richard greatly enjoyed field-work in North America but never really got used to carrying that essential equipment for discouraging bears—a rifle.

Richard's Ph.D. research not only resulted in the definitive monograph (published in our *Botanical Journal* in 1985), but also in an important series of contributions to flavonoid phytochemistry and numerous other papers on aspects of the taxonomy of the Saxifragaceae.

Since 1980 Richard has been the Senior Curator of the Herbarium and Botanic Garden at the University of Leicester. His job includes responsibilities for teaching and research supervision. His own research continues unabated, notably on the southern hemisphere members of the saxifrage family, on the genus *Ribes* (perhaps inspired by all the flowering currants that are such a feature in St. Andrews) and on *Saxifraga* itself. He is the co-author (with Professor D. A. Webb F.M.L.S.) of a major book on European Saxifrages to be published early next year.

Besides undertaking all this research, carrying out a full teaching load and administering a botanic garden and herbarium, Richard has found time to play a major and successful role in the Botanical Society of the British Isles. He is Receiving Editor of *Watsonia* and a member of their Council. Somehow he also finds time for his wife and three children!

Richard's hard work has involved the application of a variety of techniques for solving taxonomic problems. He has also served the user of taxonomy well by providing valuable monographic accounts. He is indeed a very worthy recipient of the 1988 Bicentenary Medal for Botany.

The President then reported that Council had decided to make two special awards on the occasion of the Bicentenary. On Council's behalf he addressed Dr Kermack and Professor Stearn as follows:

*Dr Doris Mary Kermack*

"Doris Kermack, without your knowledge, Council decided that on your retirement from its membership this year we wished to present you with a unique tribute to your work for this Society. It is to be a gold medal inscribed for this special day in our Bicentenary Year coupled with Life Membership of the Society.

You were elected thirty-eight years ago. Spanning thirty-two years, you served on the Council of this Society for four separate periods, amounting to a total of twenty-four years; during that time you were Vice President for three terms, Editorial Secretary for seven years and you have been Zoological Secretary since 1980. Twenty years ago you organized and brought into being the New Series of *Synopses of the British Fauna*—one of the most significant publishing ventures of the Society, and certainly one which has brought our name on to the laboratory benches of countless amateur and professional zoologists. Forty titles have already appeared under your editorship and the series continues. In the latter period of your office in the Society you have chaired the Programmes Committee and masterminded the many joint

meetings—a most successful feature of the Society's activities during this bicentenary period. Indeed, there are still eight joint bicentenary meetings yet to come.

In the most grateful appreciation of your enthusiastic commitment to the work of the Society and the dedication that has gone into all that you have done for it for so many years and culminating in our Bicentenary, Council decided to make this award.

*Professor William Thomas Stearn*

“For William Stearn I have a different item to present.

I have no need to explain who Professor Stearn is, let alone to introduce him to this audience. Our guests from Australia and from Sweden (and from places in between) will be equally familiar with his work. Indeed, any Fellow attending a meeting here on any subject, at any time over the last half century will almost certainly have met him and heard him asking pertinent and searching questions whether on breeds of cattle or Greek peonies, or giving us titbits of biological history.

Elected fifty-four years ago, you were already a member of Council in 1959, then Vice President, and eventually President from 1979–82. You were Botanical Curator for twenty-six years retiring from that office only three years ago and have served with your unique brand of good sense and humour on almost every committee of our society. You are still frequently called on to answer abstruse questions on Linnaeana—questions to which frequently you alone have the key. Your encyclopaedic knowledge and ability to recall facts with 100% accuracy and to propound them so simply for our general benefit is quite astonishing.

We cannot award you a Linnean Medal because we have already done that—with the Linnean Medal for botany twelve years ago. Instead, we offer you a specially bound volume of your own work—*A Bicentenary History of the Linnean Society of London* by Andrew Thomas Gage and William Thomas Stearn, in the same binding as that in which we presented another copy to our Patron, the Queen, in this room a few weeks ago.

William Stearn; this is, we trust, a fitting token of the Society's very great respect and heartfelt appreciation for all you have done for us for over fifty years, and of our affection for a totally dedicated Fellow and past President—one whom we are looking forward to continuing to rely on for many more years service!”

The Guests and representatives of other bodies gave their addresses and made presentations as follows:

Professor Carl Olof Tamm, Chairman of the Class of Botany, The Royal Swedish Academy of Sciences:

“Mr President, Fellows of the Linnean Society,

It is an honour and a pleasure for me to convey our best wishes now and for the future to you from an Academy founded by Linnaeus himself together with four of his friends, The Royal Swedish Academy of Sciences.

In particular we congratulate you upon the extremely fine way you have taken care of the invaluable Linnean collections. Thanks to your actions both his collections and his scientific accomplishments have become a world heritage of a higher dignity than if they had stayed in our remote country.

As both the Linnean Society and our Academy worship the tradition back to Linnaeus, it may be appropriate to hand over to you a memory of our common origin, at the same time the starting point for several of Linnaeus's own excursions. It is a picture of Hammarby, the summer-house of Linnaeus outside Uppsala, made by a well-known Swedish artist, Gunnar Brusewitz, who has literally travelled in Linnaeus's footsteps and also illustrated the modern editions of Linnaeus's travel reports."

Professor Bertil Nordenstam, Director of Botany, the Swedish Natural History Museum:

"It is my pleasure to convey to the Linnean Society of London from the Swedish Museum of Natural History our congratulations on two centuries of outstanding achievement and best wishes for an equally prosperous future. Our Museum in Stockholm has the second largest Linnaean collections in the world and is the centre for taxonomic research in Sweden. We are thus a natural partner to the Linnean Society in cherishing Linnaean tradition and promoting Linnaean science. Our small gift on this occasion is a botanical book published one and a half years ago. It is the *Atlas of North European Vascular Plants*, by Eric Hultin and Magnus Fries, both authors with a Linnaean spirit and tradition. Had they been alive, I am sure they would have been here today."

Professor Olov Hedberg FLS, Professor of Systematic Botany, The University of Uppsala:

"On behalf of the university to which Linnaeus brought worldwide and lasting fame I convey to the Linnean Society of London sincere congratulations on the Society's two hundredth anniversary.

As the latest successor of Linnaeus in the chair of Systematic Botany at Uppsala University I am particularly pleased to bring this salutation to a society which has done more to consolidate and develop the scientific legacy of Linnaeus than his own Country.

I wish the Linnean Society of London continued success as a guardian of that fundamental heritage of biological taxonomy, which is becoming increasingly momentous for our survival in a time of global overexploitation of biological resources.

May this volume with contemporary portraits of Linnaeus serve as a token of sincere appreciation from his old university!"

Professor Orjan Nilsson, Director of the Botanical Gardens, University of Uppsala:

"The Linnean Monuments in Uppsala, the Botanical Garden and the Carolina Rediviva Library of Uppsala University would like to convey to you our congratulations on the occasion of the Bicentennial Anniversary of the

Linnean Society of London, in 1988. At the same time, may we also take the opportunity of wishing the Society a rich and rewarding future.

We also want to express our gratitude to the Society for its comprehensive and invaluable activities in the fields of Biology throughout the years. We give full recognition to the high level of ambition combined with care and respect which has been the hallmark of the Society in preserving the Linnaean Collections, while at the same time making them available for the purposes of research.

May our gift, which itself is a result of the charges of the Society, be a sign of our high appreciation of your achievements."

Professor Nilsson then delivered the following address on behalf of the Major of Uppsala, Mr Terry Carlbom:

"On behalf of the City of Uppsala I wish to congratulate the Linnean Society on the occasion of the Bicentennial of the Society, I would like to express our sincere hopes for your future, where pride in tradition is the foundation of scientific endeavour. May this scale model of Uppsala Cathedral—where Linne himself is buried—remind us of the historic links between Uppsala and the Society."

Professor Bengt Jonsell FLS, President of the Swedish Linnaeus Society:

"SOCIETATI LINNAEANA LONDINENSI QUAE MEMORIAM LINNAEI SEMPER COLUIT ET VESTIGIA EIUS SUMMA CUM PIETATE PERSECUTA EST ANNUM PERAGENTI DUCENTESIMUM SOCIATAS LINNAEANA SUECORUM ANTE DIEM NONUM KALENDAS IUNIAS ANNO MILLE NONGENTI OCTO ET OCTOGINTA GRATIAS AGENS MAXIMAS DOCENTE DEO.\*

With these words of sincere gratitude to the Linnean Society of London I would like, on behalf of the Swedish Linnaeus Society, to present you with this diploma together with our silver gilt medal which is a unicate. You should see this as a token of the obvious fact that the Linnaean heritage is now, as it has been for a long time, in the best of hands and I am fully convinced that this will be so for the century to come.

It seems highly appropriate that within the walls of your Society should be housed as much as possible of works relating to Linnaeus, his achievements and his scientific sphere. Some works have only been known as originals and among these, until now, were the plates of Swedish birds—natural size—generally called *The Book of Birds*, compiled by Olof Rudbeck the younger and over the centuries preserved on the estate Leufsta in Uppland after being acquired by Linnaeus's colleague in entomology Baron de Geer. These plates have only recently been published and made available in a scholarly English edition. It is a great pleasure to be able to bring a copy to your Society. I will conclude with a wish that the close and personal links between our societies will endure."

\*The wording of the illuminated diploma.

Each was greeted with prolonged applause. After the last presentation the President thanked the donors and their couriers collectively for these wonderful expressions of Swedish magnanimity and the close bonds which were clearly demonstrated and which the Society very greatly appreciated.

Dr T. B. H. Tinker gave a brief verbal expression of congratulations and good wishes from the Chairman and members of the Natural Environment Research Council.

The British Museum (Natural History) and the National Museums and Galleries on Merseyside were represented by Mr J. F. M. Cannon and Mr E. F. Greenwood respectively. Professor I. Moring was present as a member of the Swedish Linnaeus Society, having accepted the Society's invitation sent to all Linnean Societies for their members to attend bicentenary events if they wished.

The President then displayed the illuminated addresses which had been received from the British Museum (Natural History), the Royal Horticultural Society and the Zoological Society of London and a specially commissioned painting of *Linnaea borealis* from the National Museum of Wales. (For the record, illuminated addresses were subsequently also received from: The Sociedade Broteriana, Professor J. F. Mesquita having been unable to present it in person; The Royal Museums of Scotland; and The Royal Botanic Gardens, Kew, see p. 47.)

### *Treasurer's Report*

I am happy to report yet again on a satisfactory financial year. In spite of the falling value of the dollar *vis-à-vis* sterling (60% of the income from our journals comes to us in dollars) we made a profit of £9,000 compared with £7,600 in 1986. The balance sheet will also show an increase of £13,800 for Repairs and Improvements, bringing the total provision in this respect to £80,000. And for the first time we have put aside £20,000 for the Library to purchase needed stock.

On the advice of our auditors we have registered with H.M. Customs and Excise for VAT. This is explained in Note 8 of the balance sheet.

I think it appropriate in this our Bicentenary to have an overall view of our financial position. Ten years ago our position was such that we were selling our library books at auction in order to acquire sufficient funds to keep the library open to the public. Since then the position has changed quite remarkably. We have put aside, out of income, nearly a quarter of a million pounds for maintenance of the building and multiple Bicentenary projects. We have been able to guarantee, in whole or in part, some £50,000, our half share of the revised Kimberley budget (the other half is the responsibility of the Royal Geographical Society), although outside donations have since made the guarantee unnecessary. In 1979 our investments in equities and gilts totalled £80,000. Today they are £320,000. And, as a further comparison, the market value of our investments in 1979 was £93,000; today it is £522,000.

For this almost spectacular achievement within one decade we must be grateful to Jack Gardiner, my predecessor who started the upward turn, to our brokers, James Capel, to Roger Goodenough, always so willing to spend time and give us advice, to Charles Goodhart who together with Roger Goodenough

in the Finance Committee provide such good counsel. And last, but by no means least to our publishers, Academic Press who, leaving aside the annual profit that increases with every year, provide us with so many unpaid services far beyond any obligation in their contract with the Society.

All in all, and regardless of the strength or weakness of the dollar, the picture looks very bright. But having said this, and changing the metaphor, I must mention a small cloud in the otherwise blue sky. In 1988 we shall be returning to Fellows by way of *The Linnean* and the cost of journals (including the extra third volume of the Botanical Journal) some £5,000 more than the total amount we receive in contributions. Although this will have little overall effect on the balance sheet it will certainly not please the Inland Revenue or the Charity Commission and something must therefore be done. We were in a similar position some four years ago and on that occasion we increased the annual contributions. Council would like to avoid a further increase so recommends instead that the three existing categories of Fellows and Associates be reduced to two, that is to say those who do not take a journal and those who take one journal. Annual contributions from these two categories will remain unchanged. Composition fees will in future be compiled on the basis of no journal or only one. However, any Fellow or Associate who requires a second journal will need to pay for that journal at the run-on cost plus postage. Taking this year as an example it would mean payment of approximately £22 instead of the present £5 for a second journal of which the published price is £219! If the recommendation by Council is accepted the new regulations will come into effect in May 1989. It will be for the Executive Secretary to propose the recommendation to Fellows more formally in accordance with the Bye-Laws.

I end if I may with my annual appreciation of the help given me by the staff, all of them, and who offer it with such humour and kindness. Especially do I thank Sue Darell-Brown. I echo the words of our auditors when I say that Sue had kept the financial records throughout the year without a single mistake. That makes life very easy for the Treasurer.

#### *Executive Secretary's Report*

The Executive Secretary stated that as there was no precedent for reports at bicentenary meetings he would mostly give a very brief historical review of ephemera extracted from the reports of previous Anniversary Meetings, matters not worthy of formal record in Professor Stearn's History:

"The Minute Books go back complete to 1788 but most merely record routine matters of little general interest. However, their reading gives some insight into the continuity and changing fortunes of the Society and its Fellowship. For example, in 1802 the Society's equity was £1200, 17% (£200) having been bequeathed by one Fellow, Dr Pulteney. The same percentage of the accounts just approved would be some £87,000.

Also in 1802, the year of the granting of the Charter, the Secretary recited the names of all those appointed, to wit, 228 Fellows, 28 Associates and 81 Foreign Members! Notably, the first named Foreign Member was from Sweden, indeed from Uppsala.

Mistakes are no new phenomena: in 1884 the Anniversary Meeting is on record as occurring on Thursday when it was a Saturday and the Receipts were labelled as Payments.

A year later, things were at a very low ebb—only one Vice President, one Secretary and one Fellow attended on the day appointed. On the other hand three years later the Centenary Meeting was attended by 200. That was a marathon event as the Proceedings ran to 84 closely printed pages.

Fifty years ago, in 1938, Professor Stearn was already a regular signatory and, as the Meeting had a consecutive symposium, the Proceedings covered three days' business.

Thirty years ago three of today's award winners were on Council.

Concerning matters of immediate interest, the latest report from the Kimberley Research Project has just been received from the Deputy Leader and a postcard, received at Burlington House on 23 May 1988 was postmarked in N.W. Australia on 20 May 1988—three days earlier."

Apart from two other matters of recent history, the Stamp Issue and the Royal Reception, both covered elsewhere in these Proceedings, the routine report of Council which follows was not given verbally.

### *Report of Council*

The session included the first half of the bicentenary year and the majority of Society activities have either been concerned with or affected by associated events. Indeed, the bicentenary created its own momentum, deliberately engineered by the bicentenary committee over the past three years. Inevitably, due to the lack of response or insufficient resources, some events went by default but Council is very pleased by the response of the Fellowship and by outsiders' reactions to date. As most of the individual events have already been discussed and advertised in previous numbers of *The Linnean* this is an overall commentary.

### *Scientific Meetings*

Most of the scientific meetings have been or are being published as part of the bicentenary records. They have demonstrated Council's intention to close ranks with many Societies which, whilst originating in The Linnean Society, have long since pursued separate paths. Probably the most notable of these is the Zoological Society of London which was originally allowed to exist as a club, with its bye-laws approved by the Linnean Council. The intention to hold similar joint meetings with other societies in the future is wholeheartedly endorsed.

### *Kimberley Research Project, Australia, 1988*

The Project, which was in danger of foundering a year ago due to local politicking became a reality. The first scientists arrived as planned ready for the field work to commence on 31 March 1988 and in spite of extremes of weather at the outset, initial reports of progress were most encouraging.

*Politics*

Whilst it is not Council's policy to become involved in lobbying, indeed this is anathema to the Society's Aims, Fellows are asked to note that the Society has recently been involved in correspondence concerning biological issues which have or could have political connotations. Indeed, the summer of 1987 saw a flurry of activity starting with the South African matter covered below. Then, as a matter for the record under this heading, the Kimberley Project was briefly but seriously in jeopardy due to the aboriginal question. In the event, through the good offices of Mr Sands especially, the aboriginals not only co-operated whole-heartedly in the planning but became closely involved in operations in the field. And, thirdly, on 22 July 1987, on behalf of the Society, the President was the first signatory to a letter to *The Times* concerning funding for the Freshwater Biological Association. He was supported by the Presidents of the British Ecological Society and the Institute of Biology. Papers concerning University Grants, and a report that N.E.R.C. funding for Biological Records Centre at Monkswood has been withdrawn, are both currently under discussion.

Early in the session Council was most concerned with the turn of events in a submission to the Zoological Journal being refused on the grounds that it originated in South Africa. This occasioned as a Stop Press notice in *The Linnean*, a note from the President, *Linnean* 3(3):45. The editorial policy was formally published as a flier in the September number of each journal. This read:

"It is the express policy of the Linnean Society of London that its journals shall publish papers of highest merit in the appropriate fields, regardless of their source or country of origin. In selecting papers for publication, the Editorial Boards are required to consider as objectively as possible the scientific value of the work described, the standards of literary presentation and the suitability of the subject matter. Any criteria unrelated to science are irrelevant. This statement is made on behalf of the Officers of the Society with the support of a motion passed by Council.

J. D. PYE  
Editorial Secretary  
July 1987."

*Sixth Form Programme*

With Mrs Purchon now organising the programme, the series ran with its customary efficiency. The symposium, now a regular occurrence early in the New Year, was a repeat on the subject of *Tomorrow's Ecologists*. There was one last minute change when Professor Davies was unable to lecture. The President stepped in at twenty-four hours' notice, giving a rehearsal of this Presidential address, p. 65, on the *Origin of the Flowering Plants*.

Dr D. A. S. Smith, having in previous years run two very popular one day symposiums for schools to the west of London, organised a third, on 12 March 1988 at the University of Buckingham on *Defence Strategies in Animals and Plants*. However, for no apparent reason, there were so few applicants that it had to be cancelled.

### Publications

The Bicentenary was seen as a focus to provide a comprehensive range of publications. These include to date:

- A Bicentenary History of the Linnean Society*, A. T. Gage and W. T. Stearn. ISBN 0-12-273150-6.
- Sir James Edward Smith, First President of the Linnean Society*, M. Walker. ISBN 0-9506207 1 8.
- James Edward Smith and his Herbarium*, W. T. Stearn. *Bot. J. Linn. Soc.* 965(3): 199-219.
- Proceedings of Scientific Meetings.
- An up to date society pamphlet with information for would be members and visitors and as handouts to accompany the travelling exhibit.

The proceedings of the joint meetings are, with one exception, being published, but not entirely within the Society. By mutual agreement, the *Biota and Palaeoatmospheres* meeting will be published in the *Journal of the Geological Society*, London, Vol. 146, pt 1.

January saw the introduction of a third volume of the *Botanical Journal*. All three of the Society's journals are therefore now published monthly—an output of thirty six numbers or nine volumes a year. Journal sales on subscription have held up but are recently showing a slight decline.

### The Linnean

The unit cost of the newsletter, *The Linnean*, a free issue to all members of the Society, is £0.97. With only 21 subscribers this represented a paper loss in 1987 of £5,677. Nevertheless Council is aware, and has seen correspondence to satisfy it, that *The Linnean* provides an important and useful service and intends that it should continue. It would however welcome assurance that the Fellowship in general concurs. Indeed the newsletter needs a dynamic readership to thrive.

The newsletter is now the normal method of reaching the Fellowship as rising costs, especially of postage, and pressure on office time preclude other routine mailings. Council is aware from questions asked that it often goes unread and that some Fellows do not appreciate all the information it contains. You are therefore asked to use your newsletter and to use it for correspondence, particularly on matters concerning the Society.

### Social Events

Council has been aware that the bicentenary might well have become an expensive social junket and it was conscious that, whilst it was necessary to arrange some formal occasions, it also wished as far as possible to involve the Fellows and Associates in one or more of the functions being arranged. Costs have been kept as low as was reasonable and a calculated risk has been taken on numbers attending. The events have been spaced out through the year in the hope that Fellows would be able to attend at least one (see Section 2 p. 45).

### Other Societies

The Mammal Society has now found permanent office accommodation in the City and its registered office was removed there on 1 January 1988. The arrangements with the British Ecological Society and the Society for Experimental Biology remain as before, but the Library now only has one eighth of the B.E.S. Administrative Secretary's time.

*The Stamps*

The issue of the four Linnean Society postage stamps on 19 January 1988 as the first special issue for 1988 got the bicentenary year off to an excellent start. The Post Office itself gave the Society added exposure by using these stamps for its own television commercial. Council was most pleased with the interest taken in the stamps which were clearly popular. It is most grateful to the staff for their work in making the proposal to have a special set a reality and then in getting the issue launched and publicised. The issue became the best single publicity vehicle for the Society.

*Staff*

There has been no change of staff during the session. The voluntary helpers, which now include Mrs Jennifer Brazier, have continued to assist in the Library. Mrs Diana Furley deputised as a Fellow examining a Linnaean specimen in the Strong Room for a Central Office of Information handout. Lady Jennifer Norman has stopped coming in as she has moved away from London. Council was very pleased that the staff and many of the voluntary helpers were able to talk personally with the Queen and Prince Philip during the Reception.

Council wishes to record its thanks to all members of staff who have had added burdens to carry during the heightened bicentenary activity, also to the Society's editors and their boards for continuing to maintain their output, and to the army of voluntary helpers who have continued throughout the session to work so conscientiously on the Society's behalf.

*The Way Ahead*

The more senior Fellows will be aware through the machinations of the Aims and Objectives exercises, and letters in *The Linnean* 3(2):1, 3(3):21 and 4(2):13 that the debate on the Society and its future is both a long standing and current matter. The Bicentenary Committee, which has sat so effectively under the chairmanship of Dr David Cutler will have met for the last time, by the time this report is printed. Its final report to Council will make recommendations for the future. With this then on the table as a starting point, Council has sanctioned a formal debate for the forthcoming session to examine how the Society sees itself progressing into the third century.

*Membership*

The following are the annual statistics—

Date of election	see <i>The Linnean</i>	Fellows	Associates	Student Associates
15 October 1987	4(1):7	37	1	—
14 January 1988	4(2):9	34	—	—
24 May 1988	4(3):11	67	1	3
Total		134	2	3
Reinstatements		12		
Withdrawals		18		
Removals		17		
Deaths reported		20		

The paid up Fellowship on the Anniversary Date was 1790. There were 30 Associates and 3 Student Associates. During the year two Foreign Members died and one Foreign Member was elected.

*The deaths of 20 members have been reported*

**Barbara Barrard**, B.Sc. Born: 2 April 1931. Died: 9 November 1987. Elected: 21 April 1960. Obituary: *The Times* 20 November 1987.

**Dr Thomas Edward Tucker Bond**, D.Sc., Ph.D. Born: 10 July 1913. Died: December 1987. Elected: 24 May 1945.

**William Arthur Sanderson Burnett**, B.Sc. Born: 2 July 1914. Died: 8 May 1987. Elected: 22 November 1962.

**Professor Dr Rene Hubert Cobben**. Died: 7 December 1987. Elected Foreign Member: 21 May 1987.

**John Taylor Dealtry**. Born: 2 February 1913. Died: 2 October 1987. Elected: 18 January 1973.

**Evelyn Graham Beauson Gooding**, M.A. Born: 24 April 1915. Died: details unknown. Elected: 20 January 1972.

**Professor Sir Joseph Burt Hutchinson**, C.M.G., Sc.D., F.R.S. Died: 18 January 1988, aged 86. Elected: 2 March 1939.

**Dr Frederick Joseph Meggitt**, M.Sc., Ph.D. Born: 10 August 1890. Died: 10 July 1987. Elected: 20 June 1974.

**Professor Dr Hermann Merxmüller**, Dr.rer.nat. Born: 30 September 1920. Died: 8 February 1988. Elected: 18 April 1963, Elected Foreign Member: 24 May 1973.

**Dr Lucy Beatrice Moore**, M.Sc., Ph.D. Born: 14 July 1906. Died: 9 June 1987. Elected: 24 May 1945.

**Dr Ivor Vickery Newman**, M.Sc., Ph.D. Died: May 1987. Elected: 24 May 1930.

**Dr Kamla Kant Pandey**, M.Sc., Ph.D. Born: 11 December 1926. Died: 1987. Elected: 20 January 1966.

**Dr Thomas Robert Soderstrom**, M.S. Ph.D. Born: 9 January 1936. Died: 1 September 1987. Elected: 12 November 1981.

**Professor Julio Maria Sosa**, M.D. Died: details unknown. Elected: 29 April 1948.

**Jan Stephens**, B.A. Born: 15 July 1910. Died: 14 December 1987. Elected: 16 January 1969. Obituary: *The Times* 18 December 1987.

**Dr Tony Swain**, M.A., Ph.D. Born: 27 April 1922. Died: 25 September 1987. Elected: 24 June 1969. Obituary: *The Boston Globe* 6 November 1987.

**Professor Thomas Gaskell Tutin**, M.A., F.R.S. Born: 21 April 1908. Died: October 1987. Elected: 24 May 1945. Obituary: *The Times* 13 October 1987, *The Independent* 13 October 1987.

**Charles William James Unwin**. Born: 17 March 1895. Died: 1 July 1986 (reported August 1987). Elected: 24 May 1950.

**Dr Samuel Edward Wilson**, M.Sc., Ph.D. Born: 15 April 1891. Died: 21 July 1987. Elected: 28 May 1970.

**Professor Alastair Norman Worden**, M.A., B.Sc., M.R.C.V.S. Born: August 1961. Died: details unknown. Elected: 24 May 1948.

*Presidential Address*

After a break the President gave an address on *The Silent Explosion—the rise of the flowering plants*

*Summary*

A comment on the apparent suddenness of the rise of the angiosperms is one of the few mentions that Darwin gave in all his writing, to the fossil history of plant life. We now have a much fuller fossil record of the rapid attainment of dominance by flowering plants than was available to Darwin's contemporaries. Most notably, the discovery of a number of Cretaceous fossil flowers has enormously enhanced the value of this record. It is now clear that the biotic pollination, so closely linked with the evolution of the hermaphrodite flower and closed carpel, was nonetheless abandoned in a number of angiosperm lines relatively early in their evolutionary history. This multiple reversion to anemophily is the more remarkable, since entomophily seems to lie at the heart of angiosperm success. Interestingly, one of those groups reverting successfully to wind pollination was the grasses, which were to be so closely involved in the evolving pattern of human civilization.

The motion that this address be published, proposed by Mr F. H. Brightman and seconded by Professor B. G. Gardiner was carried unanimously. After the result of the election of the Officers had been announced, Professor Chaloner thanked the Fellows, Officers and Staff for their work during his term of office. Congratulating Professor Claridge on his election he signed off the Roll and Charter Book and handed over the chair.

Taking the chair, Professor Claridge thanked his predecessor and appointed as Vice Presidents for the 1988–89 session:

Dr F. A. Bisby  
Dr D. F. Cutler  
Professor J. D. Pye  
Dr. D. Rollinson

## 5. Balance Sheet and Accounts

### The Linnean Society of London

### Balance Sheet

### 31st December 1987

31st  
December  
1986

£	ASSETS	£	£
	<b>Investments</b> (as per schedule)		
282,863	(Market Value: 31st December 1987; £521,990)		319,654
	(Market Value: 31st December 1986; £471,285)		
55,598	<b>Sundry Debtors</b>		65,460
	<b>Share of Stock held on Joint Publishing Account</b>		
4,158	(at valuation)		-
45,570	<b>Deposit and Current Account balances</b>		38,840
388,189			423,954

	<b>Less: Current Liabilities</b>		
21,248	Contributions received for future years	20,956	
69,235	Provision for Repairs and Improvements (Note 1)	80,000	
51,920	Provision for Bicentenary Expenses (Note 2)	47,970	
--	Provision for Library Purchases	20,000	
19,384	Sundry creditors and provisions	17,892	
161,787			186,818
226,402			237,136

	<b>Trust Funds</b>		
	Investments (as per schedule)		
57,947	(Market value: 31st December 1987; £151,378)	58,864	
	(Market Value: 31st December 1986; £143,166)		
40,776	Deposit and Current Account balances	28,225	
98,723			87,089
£325,125			£324,225

	<b>Represented by:—</b>		
	<b>General Funds</b>		
209,897	General Fund (Note 3)	219,481	
16,505	Publications Fund (Note 4)	17,655	
226,402			237,136

	<b>Trust Funds</b>		
98,723	Balance of Funds		87,089
£325,125			£324,225

C. M. Hutt	Treasurer
D. L. Hawksworth	} Audit Committee
A.-M. Brennan	
F. H. Brightman	

## Income and Expenditure Account for the Year ended 31 December 1987

1986 £	INCOME	£
48,847	Annual contributions received	50,141
1,164	Income tax recoverable on covenanted contributions (year to 5th April 1987)	1,015
29,320	Dividends and interest	30,780
6,381	Publications sales of back issues	4,875
1,230	Donations received	920
7,816	Use of rooms	7,114
9,410	Facilities of Premises	9,933
5,160	Miscellaneous receipts	3,537
286	Royalties	115
47,642	Publications (Note 7)	45,785
£157,256		£154,215
	EXPENDITURE	
56,425	Salaries and National Insurance	61,579
6,329	Electricity and gas	6,924
6,476	General rates (£7,999 less grant £945)	7,054
6,923	Repairs, renewals and insurance	4,742
8,178	Printing, stationery, postage and telephone	6,319
1,938	Audit fee	2,128
6,579	Miscellaneous	11,904
3,955	Books and periodicals	3,107
1,560	Binding, repairs and cleaning books	632
1,504	Cost of cataloguing	1,116
4,794	Newsletter	5,803
104,661		111,308
10,000	Transfer to Provision for Repairs and Improvements	13,848
35,000	Transfer to Provision for Bicentenary Expenses	—
	Transfer to Provision for Library Purchases	20,000
£149,661		£145,156
£7,595	Excess of Income over Expenditure for the year	£9,059

## Report of the Auditors to the Fellows of the Linnean Society of London

We have audited the Financial Statements on pages 66 to 73 in accordance with approved auditing standards.

In our opinion the Financial Statements give a true and fair view of the state of the Society's affairs at 31 December 1987 and of its results and source and application of funds for the year ended on that date.

4 London Wall Buildings  
London EC2M 5NT  
27th April 1988

FRASER KEEN  
Chartered Accountants

## Notes to Accounts—31 December 1987

<i>1986</i>			
<b>£</b>	<b>Note 1</b>	<b>Provision for Repairs and Improvements</b>	<b>£</b>
90,453		Balance at 1 January 1987	69,235
10,000		Transfer from Income and Expenditure Account	13,848
5,000		Grant and Donation received	—
—			—
105,453			83,083
(36,218)		Expenditure during year	(3,083)
—			—
<b>£69,235</b>		Balance at 31 December 1987	<b>£80,000</b>
—			—
	<b>Note 2</b>	<b>Provision for Bicentenary Expenses</b>	
25,000		Balance at 1 January 1987	51,920
35,000		Transfer from Income and Expenditure Account	—
—		Transfer from Kimberley Project	4,432
—			—
60,000			56,352
(8,080)		Expenditure during year	(8,382)
—			—
<b>£51,920</b>		Balance at 31 December 1987	<b>£47,970</b>
—			—
	<b>Note 3</b>	<b>General Fund</b>	
7,595		Excess of Income over Expenditure for the year	9,059
125		Composition fees received during the year	525
2,855		Gain on changes of investments during the year	—
—			—
10,575			9,584
199,322		Balance at 1 January 1987	209,897
—			—
<b>£209,897</b>		Balance at 31 December 1987	<b>£219,481</b>
—			—
	<b>Note 4</b>	<b>Publications Fund</b>	
17,213		Balance at 1 January 1987	16,505
3,418		Transfer from Joint Publishing Account (less due to other Societies £71)	5,564
—			—
20,631			22,069
4,126		Less: Transfer to Income and Expenditure Account	4,414
—			—
<b>£16,505</b>		Balance at 31 December 1987	<b>£17,655</b>
—			—

**Note 5** No value is attributed to the Library, furniture, office equipment and stock of unsold journals in this Balance Sheet. Acquisitions are written off as incurred.

**Note 6** Annual contributions in arrears at 31 December 1987 amounted to £1,157 (31 December 1986: £2,574; 65% of this was paid in 1987).

**Note 7 Publications**

Half share of surplus on 1987 Joint

Publishing Account— Journals	83,519
Transfer from Publications Fund	4,414
Cambridge University Press	
& E. J. Brill	541
	<hr/>
	88,474

*Less:*

Contributions to Joint Publishing

Account and distribution cost	41,598
for Journals— Fellows	
Editorial expenses	1,091

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42,689

Surplus transferred to Income and

Expenditure Account £45,785

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**Note 8 Value Added Tax**

The Society's income classified as turnover under H.M. Customs & Excise Regulations exceeds the registration limits and, as previously reported, appropriate notifications have been made. However where previously it was considered that application for exemption would be pursued since the Society had been in a comparatively small repayment situation, it is now considered prudent for the Society to re-establish its registration following clarification of the VAT treatment of current levels of income and expenditure and the apparent continuation of the repayment situation. No adjustment is however appropriate to these Accounts because agreement by H.M. Customs & Excise to the revised application has yet to be obtained.

**Joint Publishing Account with Academic Press  
Inc, (London) Ltd.  
Income and Expenditure Account for the  
Publishing Year Ended 31 December 1987**

<i>1986</i>		<i>£</i>	<i>£</i>
<i>£</i>	Sales		
<i>311,133</i>	Journals (including Linnean Society contributions)		304,981
<i>19,943</i>	Books		22,661
<i>£331,076</i>			<i>£327,642</i>
<i>2,905</i>	Stock at 1st January 1987		8,317
	Production Costs		
<i>141,433</i>	Journal		137,944
<i>18,303</i>	Books		3,073
<i>162,641</i>			149,334
<i>8,317</i>	<i>Less: Stock at 31st December 1987</i>		
<i>£154,324</i>			<i>£149,334</i>
	Gross Profit for year		
<i>88,376</i>	Academic Press		89,154
	Linnean Society		
<i>84,850</i>	Journals	83,519	
<i>3,526</i>	Books: Publications Fund	5,635	
<i>88,376</i>			89,154
<i>£176,752</i>			<i>£178,308</i>

## Special Accounts (Trust and Reserve Funds) for the year ended 31st December 1987

	Income			Expenditure				
	Deposit and current account balances at 1 January 1987	Dividends interest and income tax recovered	Royalties or other receipts	Grants awards transfers and sundry expenses	Purchase of investments	Administration contribution	Deposit and current account balances at 31 December, 1987	Investments at book value
	£	£	£	£	£	£	£	£
Jill Smythies Award	3,373	171	—	273	—	9	3,262	—
P. Appleyard Bequest	5,090	1,942	—	476	74	170	6,312	8,041
The H. H. Bloomer Award Trust	727	361	—	211	15	33	829	1,134
Bonhote Fund	2,353	1,060	—	—	1,061	96	2,256	6,850
Goodenough Fund	1,234	249	200	287	1,000	22	374	1,873
Hooker Lecture Fund	896	270	—	—	—	24	1,142	983
Minchin Fellowship Fund	—	34	—	34**	—	—	—	120
Denis Stanfield Memorial Fund	2,329	348	—	—	2,001	32	644	3,121
Trail Crisp Award Fund	266	109	—	245	—	10	120	336
Westwood Fund	193	156	—	100	155	15	79	855
Jane Jackson Bequest	—	1,754	—	1,754**	—	—	—	4,088
Omer—Cooper Fund	4,096	1,649	—	1,300	2,332	147	1,966	12,125
Flora Europaea Fund	20,219	3,509	*21,655	24,443	9,277	422	11,241	19,338
	<u>£40,776</u>	<u>£11,612</u>	<u>£21,855</u>	<u>£29,123</u>	<u>£15,915</u>	<u>£980</u>	<u>£28,225</u>	<u>£58,864</u>

\*\*Income transferred to General Income Account.

2,641	Royalties
19,014	Redemption of Investments
<u>*£21,655</u>	

## Schedule of Investments 31 December 1987

Nominal	General account		Book Value	Nominal	Trust funds		Book Value
			£				£
£12,333.19		Treasury 3% Stock 1990	11,135		The Equities Investment Fund for Charities:		
£21,343.19		Treasury 3% Stock 1991	17,184	5,891	Units	P. Appleyard Bequest	7,267
£14,250.00		6% Funding Stock 1993	11,963	1,180	"	The H. H. Bloomer Award Trust	971
£10,000.00		Treasury 9% Stock 1994	7,272	1,982	"	Bonhote Fund	3,142
58,000	Units	Allied Dunbar UT European Growth Trust	15,196	822	"	Goodenough Fund	1,873
3,000	Shares	Allied Lyons Plc. 25p Ordinary Shares	2,817	843	"	Hooker Lecture Fund	983
£3,944.00		Barclays Bank Plc Ordinary Stock	5,287	126	"	Minchin Fellowship Fund	120
4,250	Shares	B.A.T. Industries Plc 25p Ordinary Shares	3,963	1,108	"	Denis Stanfield Memorial Fund	3,058
8,000	Shares	Boots Co. Plc 25p Ordinary Shares	10,475	371	"	Trail-Crisp Award Fund	336
4,000	Shares	Cable & Wireless 50p Ordinary Shares	13,030	522	"	Westwood Fund	759
12,000	Shares	Cadbury Schweppes Plc 25p Ordinary Shares	9,240	6,496	"	Jane Jackson Bequest	4,088
8,234	Shares	Coats Viyella Plc 20p Ordinary Shares	7,624	4,435	"	Omer-Cooper Fund	8,589
3,000	Shares	Glaxo Holdings Plc 50p Ordinary Shares	2,032	6,082	"	Flora Europaea Fund	16,387
1,250	Units	GUS "A" Ordinary Stock	7,700			Treasury 9% Stock 1994	
11,821	Shares	Hanson Trust Plc 25p Ordinary Shares	14,772	£4,165.58		Bonhote Fund	3,063
28,000	Units	Henderson UT Management European Income Trust	14,476				50,636
1,600	Shares	ICI Plc £1 Ordinary Shares	12,294				8,228
3,861	Shares	Land Securities Plc £1 Ordinary Shares	5,694			National Savings Bank—Investment Account	
5,250	Shares	Northern Foods Plc 25p Ordinary Shares	3,880				
3,694	Units	Royal Insurance Plc 25p Stock Units	3,233				
£11,000.00		Scottish Mortgage & Trust Plc 8–14% Stepped Deb.	11,083				£58,864
2,000	Shares	Shell Transport & Trading Co. Plc 25p Ordinary	5,368				
10,730	Units	The Equities Investment Fund for Charities	16,711				
3,875	Shares	Unilever Plc 5p Ordinary Shares	12,802				
			225,231			(Market Value 31 December 1987 £151,378)	
		National Savings Bank—Investment Account	94,423				
			£319,654				

(Market Value 31 December 1987, £521,990)

## Source and Application of Funds Statement for the year ended 31 December 1987

	General Funds		Trust Funds	
	1987	1986	1987	1986
<b>Source of Funds</b>	£	£	£	£
Excess of Income over Expenditure for the year	9,059	7,595	—	2,001
Add: Provision for Repairs and Improvements	13,848	10,000	—	—
Provision for Bicentenary Expenses	—	35,000	—	—
Provision for Library Purchases	20,000	—	—	—
	42,907	52,595	—	2,001
Other Sources of Income				
Grants and Donations	—	5,000	—	—
Transfer from Kimberley Project	4,432	—	—	—
Composition fees received	525	125	—	—
Investments sale proceeds	—	46,878	19,014	20,002
Decrease in Debtors	—	9,200	—	—
Transfer to/(from) Publications Fund	1,150	(708)	—	—
Decrease in Share of Stocks Held	4,158	—	—	—
	53,172	113,090	19,014	22,003
<b>Application of Funds</b>				
Additions to Investments	36,791	102,668	15,915	752
Repairs and Improvements Expenditure	3,083	36,218	—	—
Bicentenary Expenditure	8,382	8,080	—	—
Increase in Share of Stocks held	—	2,706	—	—
Decrease in Sundry Creditors	1,492	15,624	—	—
Decrease in Contributions received for future years	292	270	—	—
Increase in Debtors	9,862	—	—	—
Trust Funds Excess of Expenditure over Income	—	—	15,650	—
	59,902	165,566	31,565	752
<b>Movement in Cash Deposit and Current Account balances</b>				
Balances at 1 January	(6,730)	(52,476)	(12,551)	21,251
	45,570	98,046	40,776	19,525
Balances at 31 December	£38,840	£45,570	£28,225	£40,776

**OBITUARY**  
**Irene Manton F.R.S., P.-P.L.S.**  
**(1904–1988)**

Irene Manton, former President of the Linnean Society, died on 31 May 1988. Her legacy to the scientific community comprises several hundred papers on the ultramicroscopic structure of plants and the cytology and evolution of ferns.

The younger of the two daughters of George Sidney Frederick Manton (a dental surgeon) and Milana Angele Terese (née d'Humy), she was born in London on 17 April 1904.



At an early age the two sisters were encouraged by their mother to develop an interest in natural history and to collect plants and insects. Moreover, though they both initially went to school at the Frobel Educational Institute in Kensington, most summer terms (and summer holidays) were spent at the family cottage deep in the countryside at Brookwood, Surrey where they were tutored by their mother (Irene subsequently attended St. Paul's Girls School). This unusual educative experience probably resulted from the loss of an elder brother in early infancy which caused the parents to be extra cautious in bringing up their daughters; it did, however, yield remarkable results—both daughters went up to Girton College, Cambridge and eventually secured a Cambridge Sc.D. and both were elected to Fellowship of the Royal Society—the only case in its history of two sisters achieving this distinction.

Irene graduated in 1926 and obtained her Cambridge Ph.D. in 1930. Unlike her sister she loathed Cambridge and as soon as she was able, moved to

Stockholm to commence her post-doctoral studies. In 1932 she moved to a lectureship in Manchester which she loved and in 1946 took the Chair of Botany in Leeds. Leeds was her kind of University and there she remained until her retirement in 1969.

That she was a scientist of genius there can be little doubt since her researches, spanning two disparate-fields, have yielded equally impressive results. Her initial classic studies were on the cytotaxonomy of ferns and on the spiralisation of chromosomes in angiosperms, but in the early 1950's she moved into the field of electron microscopy and set up the first laboratory specializing in the study of plant ultrastructure. With her colleagues she elaborated the structure of cilia, the thylakoid organization of the chloroplast and scale formation in Golgi bodies. More latterly she published accounts of many new phytoplanktonic organisms and at the age of 80 journeyed to the Arctic to collect nanoplankton from beneath the ice sheet.

Her honours include numerous medals, honorary degrees from McGill (1958), Oslo (1961), Durham (1966), Lancaster (1979) and Leeds (1985) and honorary membership of the Danish Academy of Sciences and Letters (1953), Deutsche Akademie Leopoldiana (1967), and the American Academy of Arts and Sciences (1969).

Outside of her main research interests she was a fount of knowledge on the history of science (in 1981 she located Robert Brown's microscope for us), a keen archaeologist who collected, and lectured on coins, seals, cooking utensils and Luristan bronzes. She also collected Chinese and modern art with astute judgement and owned several Lowry paintings bought long before this artist came into prominence.

During her three years as President (1973-76) she worked tirelessly for the Society and inspired both the Officers and permanent staff to do likewise. Indeed this newsletter carrying her obituary was her personal brain child. She was a woman of integrity, who to the end retained the affection and esteem of all who worked with her.

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## LIBRARY

The summer has been used to catch up with some of the backlog of cataloguing thanks to "modernization" in the form of a microcomputer now being used to produce catalogue cards instead of the old duplicator. Marie Porter, a librarianship student has managed to produce, print, sort and file entries for accessions of books over the past two years and these are now in the main card catalogue. There remains a period between 1979 and 1985 for which we only have simplified entries but these will gradually be converted into full entries for subjects and all authors. Student help has also been used to move some journals and the larger "single subject" journals are now shelved sequentially in the basement stacks instead of being scattered around in the gallery and east basement shelving. The western European journals are now being arranged on a geographical basis, as has already been done for those from the rest of the world. Some journals have been moved to temporary shelving

and this may cause some delay in finding things for readers. Please be patient or ring beforehand so we have time to search around: the end results should make it easier to find things.

## Donations

The Library has received a number of books from the estate of the late A. E. Pettit who was not a Fellow but who left part of his Library jointly to the Royal Horticultural Society and to the Linnean Society, these include works to complete our holdings of works by Reginald Farrer and F. Kingdon Ward and others of mostly horticultural interest. The magnificent gifts to the Library by our Swedish visitors to the Bicentenary anniversary meeting are recorded elsewhere. We continue to be grateful for gifts of backruns of journals from both CeEnCo and the Fauna and Flora Preservation Society and also to Dr Pontecorvo and R. Fitter. Collections of reprints have been added recently from Dr. D. Kermack and F. N. Hepper. Other specific donations include:

- |                      |   |
|----------------------|---|
| Prof. S. I. Ali      | Nasir, E. & Ali, S. I., <i>Flora of Pakistan: No. 187, Pandanaceae &amp; No. 188 Acanthaceae</i> , University of Karachi, Karachi, 1988.  |
| J. A. Burton,        | Burton, J. A., <i>Collins guide to rare mammals of the world</i> , 240 pp. illustr. Collins, London, 1987.<br>Dixon, A. F., <i>The natural history of the gorilla</i> , 202 pp. Weidenfeld & Nicholson, London, 1981.<br>Howard, R. W., <i>Badgers without bias</i> , 57 pp. Avon Wildlife Trust, Bristol, 1981.<br>Simpson, G., Gaylord, <i>Penguins, past present and future</i> , 150 pp. Yale University Press, New Haven, 1976.<br>Small, George, L., <i>The blue whale</i> , 248 pp. Columbia University Press, New York, 1971. |
| Prof. W. G. Chaloner | Chaloner, W. G., Creber, G. T. & Scott, A. C., Report on British Palynology 1986–1987, 55 pp. Royal Holloway & Bedford New College, London, 1988.   |
| D. Cull              | [SWITZERLAND] Canton des Grisons, <i>Flore alpine protegee aux Grisons Protected Alpine plants in the Grisons</i> (parallel text in French and English), [unpaged] illustr., some coloured, Canton of the Grisons, Chur, 1984.  |
| Duncan Donald        | Chelsea Physic Garden, William Curtis, 4 pp. Chelsea Physic Garden, London, 1987.<br>Chelsea Physic Garden, William Hudson, 4 pp. Chelsea Physic Garden, London, 1988.<br>Chelsea Physic Garden, Sir Joseph Banks, 12 pp. Chelsea Physic Garden, London, 1988.  |
| Dr W. A. Emboden     | Emboden, W. A., <i>Leonardo da Vinci, on plants and gardens</i> , 234 pp. illustr. Dioscorides Press, Portland, 1987.   |
| Michael Gallagher    | Rogers, T. D. A., <i>New list of the birds of Masirah Island, Sultanate of Oman</i> , 40 pp. Oman Bird Record Committee, Muscat, 1988.  |

- Dr. S. L. Jury      Jury, S. L.; Rajdali, Moh. & Watson M. F. *Iter Maroccanum 1987; a joint botanical expedition 17 June-22 July*, 63 pp. Dept. of Plant Sciences, Reading, 1988.
- S. Jusypiw      Ergaliev, G. Kh., *Trilobites of the middle and upper Cambrian of the Molyi Karstau*, 210 pp. Alma Ata, 1980.
- Prof. A. J. G. H. Kostermans      Soerjana, M., Kostermans, A. J. G. H. & Tjitrosoepomo, G. (Eds), *Weeds of rice in Indonesia*, 716 pp. Balai Pustaka, Jakarta, 1987.
- Dr. G. Kunkel      Kunkel, G., *Florula del desierto Almeriense*, 252 pp. Estudios Almerienses, Almeria, 1987.
- Prof. J. Leclercq      Leclercq, J., *Notes faunistique de Gembloux, No. 15: Atlas provisoire d'Insectes de Belgique, Hymenoptera Chrysidae*, 40 pp. illustr. maps. Faculte des Sciences Agronomique de l'Etat, Gembloux, 1988.
- Prof. Dr. L. E. Mora-Osejo      Mora-Osejo, L. E., *Estudios morfologicos, autoecologicos y sistematicos en Angiospermas*, 195 pp. illustr. some col. Rev. Acad. Colomb. Ciencias, No. 1, Bogota, 1987.
- Rev. A. L. Primavesi      Primavesi, A. L. & Evans, A. E. (Eds) *Flora of Leicestershire*, 486 pp. illustr. maps, Leicester Museums, Leicester, 1988.
- Dr. A. Richford/  
Academic Press      Mearns, R. & Mearns, B., *Biographies for birdwatchers*, +90 pp. illustr. Academic Press, London, 1988.
- B. E. Smythies      Polunin, O. & Smythies, B. E., *Flowers of Southwest Europe*, a field guide, 400 pp. illustr. Oxford University Press, Oxford, 1988.
- D. Starr-Glass      Munz, Philip, A. A., *California Flora (with Supplement)*. 1681 pp. +224 pp. University of California Press, Los Angeles, 1968.
- Dr. T. D. V. Swinscow      Swinscow, T. D. V. & Krog, Hildur, *Macrolichens of East Africa*, 390 pp. illustr. British Museum (NH). London, 1988.
- Acad. L. P. Tatarinov      Ivahnenko, M. F., *Permskie Parareptilii, Trudy Paleontologicheskogo Instituta* Tom. 223, 195 pp. Nauka, Moscow, 1987.
- D. P. Taylor Pescod      Newman, L. H., *Hawkmoths of Great Britain and Europe*, 148 pp. Cassell, London, 1965.
- Dr P. V. Webb      Neuchatel, University, Institut de Geologie, *Catalogue des archives de Louis Agassiz (1807-1873) etabli par Maryse Surdez*. 202 pp. Universite de Neuchatel (Suisse) Neuchatel, 1973.
- The publishers      Chitty, Susan., *That singular person called Lear*, 305 pp. Weidenfeld & Nicholson, London, 1988.
- H. J. Wood      Wood, Henry J., *Pelargoniums, the growers guide to "geraniums" and pelargoniums*, 130 pp. illustr. some col., privately, Exeter, 1987.

**PROGRAMME**

All meetings will be held in the Rooms of the Society unless another venue is stated in parentheses.

<b>1989</b>	<b>Start</b>		
11 Jan	11.00	The Battle against Human Parasites, Dr D. Payne, King's College, London	VI Form Symposium
12 Jan	17.00	* <b>The Way Ahead—a debate.</b> Chairman: Professor M. F. Claridge, P.L.S.	Society discussion meeting
21 Jan (Sat)	09.55	* <b>British Mammals, Past, Present and Future.</b> Coordinator Dr S. Harris, University of Bristol	Bicentenary joint meeting with the Mammal Society
23 Jan	17.30	There is more to a lung than just breathing. Dr R. J. Richards, University College, Cardiff	VI Form Lecture
9 Feb	15.00	* <b>Molluscan Systematics: Linnaeus to the 21st Century.</b> Coordinator: Mrs S. Morris, F.L.S., British Museum (Natural History)	Bicentenary joint meeting with the Malacological Society
20 Feb	17.30	The Evolution of Locomotion in Primates Dr L. Aiello, University College, London	VI Form Lecture
	18.30	(At Kensington Gore) <b>Kimberley Research Project 1988</b>	Joint meeting with Royal Geographical Society
23 Feb	18.15	<b>Gilbert White and <i>The Natural History and Antiquities of Selborne</i>.</b> Dr J. E. Chatfield, Curator, Selborne Museum	General Interest joint meeting with the Selborne Museum
13 Mar	17.30	Wandering DNA. Prof P. B. Gahan, F.L.S., King's College, London	VI Form Lecture
16 Mar	10.30	* <b>Developmental Pathways and Evolution.</b> Coordinator: Dr F. A. Bisby F.L.S., Southampton University and Dr S. Blackmore F.L.S., British Museum (Natural History)	Bicentenary joint meeting with the Systematics Association
12–16 Apr		(At Taunton) <b>Evolution and Change in the Bristol Channel and Severn Estuary.</b> Coordinator: Dr J. H. Crothers F.L.S., Leonard Wills Field Centre	Bicentenary joint meeting with the Estuarine and Brackish Water Sciences Association and the British Ecological Society
19 Apr		<b>Kimberley Research Project 1988</b>	Joint meeting with Royal Geographical Society
24 May	16.00	* <b>Anniversary Meeting.</b> Elections and presentation of Awards	
14 Jun	19.00	<b>Conversazione</b>	Symposium
6–8 July		(At Oxford) <b>Interactions between Plants and Ants.</b> Coordinators: Dr D. F. Cutler, F.L.S., Royal Botanic Gardens, Kew and Miss C. Huxley, Oxford University	
		*Admission of Fellows	