SOCIETY NEWS
Notes

August (when this copy was written) is a dusty month in London. Our own discomfiture is increased by the cleaning work which envelops our part of Burlington House. In addition to cleaning the stonework of the facade, the Property Services Agency is also repairing the roofs, which, after nearly a century and a half, are in need of attention, as are the windows and other fittings. All this is being done with careful attention to maintaining, as far as possible, the lines of the old building, and the materials used. The contractors and the Agency have shown the utmost consideration to the building's occupants at this time and still hope that the work will be completed by December, despite a number of problems which could not have been foreseen. A biological problem which is to be tackled soon has been the migration of pigeons, displaced by the scaffolding, into the space above our doorway, generating an unsightly mess in the porch. In a further unsavoury incident, a felon climbed the scaffolding in May, broke into the Library and removed the clock. On hearing of the Society's loss, Mr. Gavin Bridson, our former Librarian, offered the Society another one, in solid malachite, which is not so easily portable. Like its predecessor, it is a French clock of the late nineteenth century. Its spectacular nature, which evokes a mixed response from Library users—it will surely grow on them—is enhanced by its curious face (see our next issue). Does any member know its original destination?

We are further obliged to Gavin for a fine mahogany bookcase, now outside the Council Room.

Legacy

Two hundred and fifty pounds was received by the Society from the estate of the late Frederic Richard McQuown, F.L.S. Sadly, there were no relatives with whom to commiserate or thank, but the Society's indebtedness is here recorded.

Benefactor: and the Ladies of Kent

The North Kent Decorative and Fine Arts Society has generously provided £500 for the rebinding of the *Systema Naturae*. To the Society, whose members have worked voluntarily for the Linnean Society for many years to such wonderful effect, go our thanks for this addition to their generosity.

The Executive Secretary

Your new Executive Secretary has received a warm welcome from the Society and would like to record his appreciation of all the kindness which staff and members have shown him in the first few weeks of his period of office. He did, however, note the slightly defensive tone of the article in the last *Linnean*, and would like to assure members that there is plenty of fascination in the Society for one who has an admittedly different biological background to most of its membership. The Editor, doubtless making the best of a bad job, has suggested that more biochemistry in the Linnean might be appreciated by members, and whilst no scientist these days should decline a platform (you never know who you

might be sharing it with), he is not so sure. But one thing not alluded to in his c.v. was consultancy work, from trying to discourage barnacles from colonizing oil platforms to the genetics of mental illness. One entertaining little problem was concerned with a concrete jetty in the Red Sea, which was used for loading oil tankers. This jetty had been invaded by rock-boring organisms, charmingly called gribbles. To discourage the gribbles from taking the whole structure apart, the jetty was to be clad in a rubber skirt. This would, of course, cover up the existing gribbles, which would die and decay, thereby generating gas which might dislodge or damage the skirt. What is the maximum pressure the decaying gribbles would generate against the skirt? The only other piece of information given was in response to the question how big is a gribble? The answer was as big as your index finger. Solutions, as they say, on a postcard....

Spiritualism

The August *Linnean* made mention of Wallace's belief in spiritualism. A further unaccountable omission from your new Executive Secretary's c.v. was his authorship of an article entitled "On Human Credulousness" part of which is reproduced with the author's permission, below.

> "In the 19th Century, numbers of distinguished, well-educated and intelligent people were taken in by the purveyors of so-called psychic phenomena—spiritualism, telepathy, clairvoyance and many others. Universities had chairs in phrenology and the University of London boasted until the 1940s a Council for Psychical Research graced amongst others by the late Professors Cyril Burt and C. E. M. Joad. The Psychical Research Society attracted the support of numerous Fellows of the Royal Society, including Sir William Crookes, Sir Francis Galton, Sir Oliver Lodge and Dr Alfred Wallace, who believed in varying degrees in psychic powers and who were prepared to testify to the veracity of the rogues who took them in. Some of the cases were laughable. Archdeacon Thomas Colley believed he had seen a materialised spirit emerge from the side of one Dr Monck, and used this and other reported supernatural phenomena to support belief in the Resurrection. Monck was a criminal and an imposter (he had no doctorate) who practised deception, pornography and worse. In 1876, he served a term of imprisonment after being exposed by an amateur conjuror at a seance in Huddersfield. The good archdeacon subsequently compared him to St. Paul.
>
> The affair was noteworthy not only for the gullibility of the archdeacon but also for the involvement of a professional magician, Jasper Maskelyne, who with David Devant ran a small theatre in London based on their prowess. These two were increasingly involved by the Psychical Research Society in demonstrating that many supposedly supernatural acts could be reproduced by legerdemain. In Monck's case, Colley offered in 1906 to pay £1000 to anyone who could replicate Monck's powers. Maskelyne took up the challenge and later that year carried out the appropriate trick, which with other similar ones, he subsequently added to his theatrical repertoire. Colley, however, refused to pay up on the grounds that Maskelyne's performance was not a replica of Monck's effort. Maskelyne questioned Colley's credentials as an archdeacon in a pamphlet he circulated in his

theatre and was successfully sued for libel by the archdeacon, although the peppercorn damages were much influenced by the court's perception of Colley as being at best a fool.

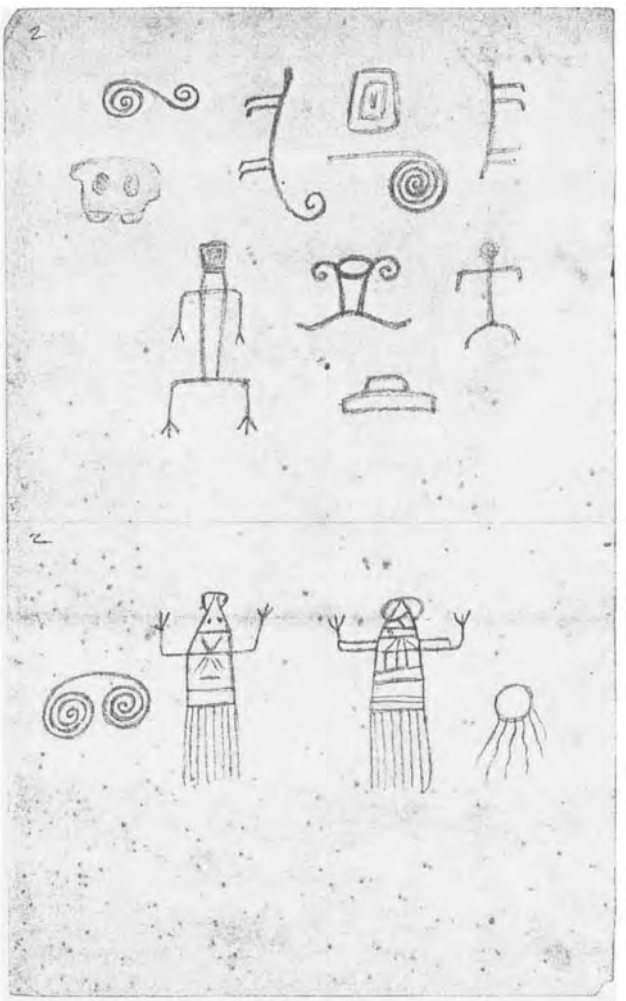
A key witness for the archdeacon was one Sir Francis Galton, F.R.S. rightly regarded as the father of statistics. Sir Francis found nothing odd in Monck's escape through a window on a demand by an audience that he should be searched after a seance. Indeed he felt that the demand was grossly improper, since Monck was on that occasion a guest in the house.

Those involved in these deceptions had good reasons for them. They brought fame and fortune. Most were reasonably educated people and were connected to distinguished figures of the day. In 1868, a medium, Daniel Hore, was seen to float out of a window eighty-five feet above the ground and into an adjoining room some seven feet away. The observers of this astonishing feat, two peers of the realm, Lords Lindsay and Adare with one Captain Wynne, corroborated a statement made to Committee of the Dialectical Society the following year. A detailed investigation subsequently revealed that shortly before the incident, Hore had quitted the party to open the window in the adjoining room and that on his return he stood on the window ledge (to the consternation of this hosts) from which he then disappeared, to reappear shortly in the next room. No one actually saw him "float" out of the window and in the next; the observers had been seated in darkness inside the room and had merely observed the shadow of something move out of the window on the wall of the room. At the time (December) the only light available was that of a new moon. It later transpired that only one, Lord Lindsay, had seen the shadow move.

Despite the indications of trickery which were subsequently revealed, the Hore case generated much publicity. Dr Alfred Russell Wallace, F.R.S. believed in levitational movement; he was particularly impressed with a medium, Mrs Guppy, who was a close friend of his sister. She apparently could travel in a disembodied state from her home in Highbury to Kensington in a little over two minutes. Her arrival at her seances were, by all accounts, suitably spectacular. This was not all; Wallace believed that she was capable of producing the "materialised spirits" of plants and, as a good botanist, he would doubtless be in a position to know, although there is no record that he catalogued the species involved. Mrs Guppy's connections with the rich and powerful prevented any more objective investigation of her remarkable powers; others were not so lucky; mediums were discovered with pockets filled with false beards, sheets of muslin, scent bottles, bells, spirit lamps (sic), masks and luminous preparations of phosphorus which coincidently smouldered with a suitable ghostly smoke of phosphorus pentoxide.

It has been noted that the scientific men involved in these bizarre events applied quite different standards to these phenomena than they did to their own researches. In 1905, the French physiologist, Charles Richet, "set up" a medium, Mlle Marthe B., who claimed to be able to produce a materalised spirit in the form of an Arab, Bien Boa. Richet asked Mlle B to get Bien Boa to blow into a glass bottle filled with liquid and the spirit obliged. The liquid was barium hydroxide solution and turned milky, demonstrating that the spirit, too, used normal mammalian respiratory

mechanisms. Yet even after discovering that the spirit was, in fact, an automaton, worked by Mlle B. from behind a curtain, Richet proclaimed his belief in his new-found medium. In Richet's defence, it might be noted that the lady had powerful friends in the French establishment and Richet's protestations may have been dictated more by expediency than belief".



A. R. Wallace Pencil sketches of petroglyphs from the Amazon (Ms. Linn. Soc.)

100 n.o.

On 20 November, Mrs Irene Mary Vaughan M.B.E., M.A., F.L.S. celebrated her 100th birthday. In offering the Society's warmest congratulations on this notable event, we quote from her nephew, Mr C. M. Rope, who wrote to Her Majesty The Queen as follows: Mrs Vaughan took the Degree examinations at Oxford in 1911 but was not, of course, as a woman, able to be awarded a Degree at that time. When, in 1987, Oxford University was notified of this fact, they found her records and formally agreed to grant her Degree within three days.

During the 1914–18 War Mrs Vaughan (Miss Rope as she then was) served as an ambulance driver in Serbia, and remembers driving wounded Tsarist soldiers. Later in the war she joined the WRNS and was, I believe, either the first WRNS Officer or else among the first two or three to serve overseas (in Gibraltar).

During her WRNS service, my aunt met her future husband, a naval officer, who served through both World Wars and retired as Captain HRH Vaughan.

In the 1930s my aunt and her husband moved to a house in Wales where they lived until Captain Vaughan's death in 1978. During the second World War my aunt ran a very small farm single-handed. After the war, she devoted herself to helping her husband in various of his works, including the running of the Council for the Preservation of Rural Wales. He was also, I think, a Deputy Lieutenant for Carmarthenshire.

Mrs Vaughan has had a strong life long interest in Botany and is a Fellow of the Linnean Society. She and her husband were able to do a great deal to preserve the red kite in Wales, for which work they were awarded both the silver and gold medals of the RSPB.

I'm glad to say that Mrs Vaughan is still extremely active mentally, and is able to look after her garden as well as going on botanical expeditions with various friends from time to time. She is also still able to care for her house and entertain guests to a very high standard.

Happy Birthday!

100 Years Link with Rothamsted

An etching of Sir John Lawes (1814–1900), presented to the Society, is a reminder of an association between the Linnean Society and Rothamsted Experimental Station which lasted for exactly 100 years. John Bennet Lawes, born at his ancestral home the Manor of Rothamsted, had a deep interest in chemistry and the application of science generally to crop production. He patented a new method of producing super-phosphate and established a company to produce this and other fertilizers. He also started field experiments and research at Rothamsted which, for many years, was financed wholly by him. In 1889 he created the Lawes Agricultural Trust, with Trustees appointed by the Royal Society, and a Committee of Management. It was to the latter, the Lawes Agricultural Trust Committee, that the Linnean Society appointed a member from 1889.

Over the years the funding of Rothamsted has become more and more dependent upon Government, particularly in recent years, the Agricultural and Food Research Council. To conform with the modern situation the Trust is being replaced by a new Trust Corporation (which will retain ownership of the land and certain buildings), and the Committee on which the Linnean Society was represented is being replaced by a new advisory committee.

The first three Linnean representatives on the Committee—W. Carruthers, A. B. Rendle and J. Ramsbottom—served for a total of 83 years. They were followed by C. T. Ingold in 1972 and R. W. J. Keay in 1978. The etching, which is a reproduction by Clutterbuck of a life-size portrait by Herkomer, was presented to the Linnean members at the final meeting of the Committee in March 1989.

From the Archives

Professor Bower,
45 Kerrsland Terrace,
Hillhead,
Glasgow.

MACMILLAN & CO.
Bedford Street,
Covent Garden,
London
July 27, 1891

My dear Bower,

Some years age we bought for the English market copies of Asa Gray's book on *Structural Botany*, which you probably know. And you would know also that it was the first volume of a kind of System of Botany which he did not live to see completed. Last year a book on *Physiological Botany* by Professor Goodale of Harvard was brought to our notice by the American publishers as the second volume to this System, and we, in good faith, bought some copies. The book has been attacked in the *Athenaeum* as quite out of date and the author has written to explain to us that the work is an old one, not revised for some years, but persistently re-dated by the publishers as if new. Now this is clearly a most immoral proceeding to which we would never knowingly have lent ourselves; and the work as it stands we shall not import again. But the question that presents itself to us is whether in spite of its not being up to date, the book is so far good and useful as to justify us in offering to bring out an entirely revised edition in this country. Mr Goodale writes from the Botanic Gardens at Harvard, and a third volume, on Cryptogamic Botany by Professor Farlow of Harvard, is announced to follow. I send a copy of Goodale's book in case you have none at hand, and we should be very grateful for your advice upon the point.

I am yours very truly
George G. Macmillan

My dear Macmillan, September 6, 1891

I have looked through Goodale's book with a view to giving you an answer (too long deferred by holiday distractions) to your question. For the year 1885 I think it may be reckoned a satisfactory, though not a striking book, and have no doubt that the author could write it up to date as well, or better, but this would take time, and we should bear in mind what its competitors would be. I should expect that Vines will produce a new edition of his physiology. I know nothing definitely of his intentions, but think it probable that a second edition of his book would be a great improvement on the first, and it would be more read in this country than Goodale's. Vine's book and Sachs' lectures would cover the ground of physiology. I expect that Balfour and Ward would take in much of the same area of histology as Goodale. While if Scott rewrites "How Crops Grow" for you, as I think proposed, that book would cover much the same ground as Goodale, and I should expect a more luminous treatment from Scott than from Goodale. If however Goodale could put out his book at once it might have a run, but I do not expect that it would be largely used by botanists in this country, for (excepting Asa Gray) we have not as yet been impressed by American Botany.

Yours very truly,
F. O. Bower

F. O. Bower: see also *The Linnean* 1(6): 19; 3(2): 22.

The above correspondence between George Macmillan the publisher and Bower the botanist was kindly sent to me by David Starr-Glass.

Frederick Orpen Bower (1855–1948) was born at Ripon and went to Trinity College, Cambridge and subsequently worked in Julius Sachs Laboratory (1877). In 1882 he was appointed lecturer in botany (under T. H. Huxley) at the Normal School of Science, South Kensington (the pure science departments of the Royal School of Mines had been transferred to South Kensington from Jermyn Street in 1872 and in 1881 were organized separately under the title of the Normal School of Science—see also p. 8). Three years later he accepted the Regius Chair of Botany, Glasgow, a position he was to occupy for the next 40 years.

In his time Bower published several seminal works including:

1908 *The Origin of a Land Flora—a theory based upon the facts of alteration.*
1923–28 *The Ferns (Filicales)*, 3 vols.
1935 *Primitive Land Plants, also known as the Archegoniatae.*

He died in Ripon in his ninety-third year.

Picture Quiz

Our last picture quiz (*The Linnean 5*(3): 9) figured Henry Thomas De la Beche (1796–1855), the last of an ancient family (with paternal estates in Jamaica) and the first Director, and founder of, the Geological Survey of Great Britain.

De la Beche went to primary school in Devon, but following the death of his father in 1801 transferred to a school in Charmouth and eventually to Lyme Regis. At the age of 14 he was sent to the Royal Military College at Great Marlow. However, the general peace of 1815 led him as well as Murchison to quit the army. As a young gentleman with a private income he decided to pursue his interest in geology and he started his field work in western England and south-west Wales. He was befriended first by William Conybeare—whom he later aided by illustrating his plesiosaur paper, and then by William Buckland. By 1819 he was a Fellow of the Royal Society. Later when visiting his estates in Jamaica (1823) he took time to prepare the first geological map of that island, but within ten years (1832) he was to lose his personal fortune following the social unrest that preceeded the abolition of slavery in Jamaica (McCartney, 1975).

By the age of 36, for the first time in his life, De la Beche had to work for a living. He was fortunate since at that point in time a new set of ordnance maps were in preparation. He proposed that for £300 he would add the geological information to the eight sheets covering Devon. His proposal was accepted and he spent the next three years on this task. Eventually by 1835 he was made director of the Ordnance Geological Survey, with six field assistants. His legacy to the nation is far greater, however, for with the help of Sir Robert Peel and Lord Carlisle he secured the building of the Museum of Economic or Practical Geology between Jermyn Street and Piccadilly (opened in 1851), and completed his scheme with the establishment of the Government School of Mines and of Science Applied to the Arts in Jermyn Street itself—which was founded in 1851.

The Museum of Economic Geology was eventually transferred to South Kensington where it became the Geological Museum, and is now part of, and administered by, the Natural History Museum; the School of Mines on the other hand became the Metropolitan School of Science Applied to Mining and the Arts (1853—by which time it had incorporated the Royal College of Chemistry, Hanover Square), then the Royal School of Mines, and subsequently also moved to South Kensington (mostly in 1872) to become a constituent College of Imperial College of Science and Technology in 1907 (see also pp. 7 & 12).

There were seven correct answers to this portrait from Dianne Edwards, Bobb Savage, Geoffry Miller, Mike Taylor, Fredrick Schram, Steven Darwin and Stephen Jay Gould. Alex Forbes, a new Fellow on the Island of Coetivy, gave a belated correct identification of the previous picture (*5*(2): 10) and will receive a copy of *The Life of Smith.*

Who? (clue– he thought Newton was in too much of a hurry). Solution by March to the Editor.

Room Closure

The rooms will be closed over Easter from 13 April to 17 April 1990.

Membership

We welcome the following who were elected on 19 October 1989:

Fellows

Moin Uddin Ahmed, M.Sc., Ph.D.
Thomas De Pinna Bair, Ph.D., M.A., A.B.
Bruno Baur
Peter A. Bolton, B.Sc.
Geoffrey Peter Chapman, B.Sc., Ph.D.
Prof. Geoffrey A. Cordell
Elizabeth Anne Dauncey, B.Sc
Robert Llewellyn Davies, M.Cs., Ph.D.
Roderick Campbell Fisher, M.A., Ph.D., F.R.E.S.
John Terence Gallagher, M.R. Pharm. S.
Riyad S. Haddad, Ph.D.
Paul Martin Higgins, B.Sc., ALS
Madelene Hill
Terry D. Jacobsen, B.S., M.S., Ph.D.
Leslie Wallace Lauste, M.D., B.Sc., F.R.C.S.
Jonathan C. Lovett, B.A.
James G. McMurtry, M.D.
Goran E. Nilsson, B.Sc., Ph.D., F.R.E.S.
Dr Siwert Nilsson
Marie Ross
Luis Sequeira, A.B., A.N., Ph.D.
Ramesh Chandra Srivastava, Ph.D., F.B.S., F.P.S.I.
Philip E. Stanley, B.Sc., Ph.D.
Ewart John Thomas, B.Sc., M.Sc., E.Ed.
David Ventham, M.Sc.

Meetings

Society meetings are scheduled for 15 February (blue flier), 15 March (red flier), 28–30 March (yellow flier) and 10 May*, 1990. Members' attention is drawn to the Programme of Meetings, which was circulated last August.

At the meetings on 15 February and 15 March, the second and third readings of the Certificates of Recommendation for the election of Foreign Members and Fellows *honoris causa* will take place. Ballots for the election of Fellows, Associates and Student Associates will be held on 15 March. New Fellows will be admitted at the meetings on 15 February, 15 March and 10 May.

Auditors for the Society's accounts will be elected at the meeting on 15 February.

Members are asked to note the scientific meetings to be held either wholly or in part at the Society's rooms are:

15 February. ***Videodisc and CD-ROM: New Media for the Teaching and Recording of Biological Diversity.***

13 March. ***Changes in British Wildlife.*** This is **not** on the Programme of Meetings; it is being held jointly with the Biological Records Centre and marks the 25th Anniversary of the Natural Resources Research Council and the Biological Records Centre. A green flier is enclosed.

15 March. ***Biological Diversity: Conserving Germplasm of World Crops and Their Wild Relatives.***

28–30 March. ***Pollen and Spores: Patterns of Diversification*** **(9.30 am).**

10 May. ***Biological Diversity: Conserving Germplasm in Botanic Gardens.***

All these meetings are all day generally starting at 10.30 am

Where appropriate, normal society business, including the admission of new Fellows, takes place after the lunch interval, but members should check this on the flier detailing the meeting.

Other Meetings

This list is taken, in part, from the Ciba Foundation's 'National and International Meetings Calendar', which provides a monthly update of its meetings and which is now available in the Library of the Society. Members wishing to provide information to this calendar should telephone the Ciba Foundation on 01 636 9456.

2nd International Brachiopod Congress, 5–9 February, Dunedin (J. D. Campbell & D. E. Lee, Geology Dept. Univ. of Otago, PO Box 56, Dunedin, New Zealand).

International Congress of Seed Science, 21–25 February, New Delhi (P. K. Agrawal, Secretary, Indian Society of Seed Technology, Division of Seed Science and Technology, Indian Agricultural Research Institute, New Delhi 110012, India).

*Please note change of date.

4th International Congress of Systematics and Evolutionary Biology, 1–7 July, Maryland (J. Corliss, Dept. of Zoology, University of Maryland, College Park, MD 20742, USA).

ISTA Regional Workshop/International Symposium Covering Dormancy Germination Vigour, 16–28 July, Novosibirsk (ISTA Secretariat, PO Box 412, CH-8046 Zurich, Switzerland).

11th Congress of the International Union for the Study of Social Insects, 4–10 August, Bangalore (G. K. Veeresh, Dept. of Entomology, Univ. of Agricultural Sciences, G.K.V.K., Bangalore 560 065, India).

14th International Congress of Soil Science, 12–18 August, Kyoto (Dr K. Kumazawa, Japanese Society of Soil Science and Plant Nutrition 26–10–202, Hongo 6-chome, Bunkyo-ku, Tokyo 113, Japan).

3rd International Conference of Behavioral Ecology, 22–26 August, Uppsala (S. Ulfstrand, Uppsala Univ. Dept. of Zoology, Box 561, S-71 22 Uppsala, Sweden).

World Congress of Biomechanics, 26–31 August, La Jolla (Prof. G. W. Schmid-Schonbein, Ames Bioengineering M005, Univ. of California, San Diego, La Jolla CA92093 USA).

4th International Mycology Congress, 28 August—3 September, Regensburg (A. Bresinsky, Inst. für Botanik, Univ. Regensburg, Universitätsstrasse 31, Postfach 3108, 84000 Regensburg, F.R.G.).

4th International Conference on Aerobiology, 3–7 September, Stockholm (Administrative Secretary, 4th IAC, Konferensservice AB, Box 4037, S-17104 Solna, Sweden).

European Ecological Symposium, 25–29 September, Siena (A. Renzoni, Dipt. Biologia Ambiente, Via dell Cerchia 3, 53100 Siena, Italy).

Semiochemicals and Pest Control: Prospects for New Applications, 16–20 October, Wageningen (M. Dicke, Dept. Entomology, Agric. Univ., PO Box 8031, 6700 EH Wageningen, Netherlands).

See also *The Linnean* 5(3): 20.

Advance notice is given of the following meetings:

5th Symposium on Mesozoic Terrestrial Ecosystems and Biota, 12–15 August 1991, Oslo (Paleontologisk Museum, Sars Gate 1, N-0562 Oslo 5, Norway).

XV International Botanical Congress, 23 August—3 September 1993 Tokyo (Dept. of Botany, Faculty of Science, The University of Tokyo, 7–3–1 Hongo Bunkyo-ku, Tokyo 113, Japan).

Correspondence

National Museum of Wales,
Cathays Park,
Cardiff

16.8.89
Dear Professor Gardiner,

The Picture Quiz, The Linnean, August 1989

Dr Dianne Edwards has brought to my attention the picture quiz in the current issue of *The Linnean*. Although not a Fellow of the Society, perhaps I may be permitted to send you an answer and some comments.

The portrait is of Henry Thomas De la Beche (1796–1855), first Director of the Geological Survey of Great Britain which he was instrumental in founding in 1835. Fellows of the Society may like to know that there is a very large archive of De la Beche correspondence here in the Department of Geology at the National Museum of Wales. His daughter Bessie married Lewis L. Dillwyn, son of Lewis Weston Dillwyn, the well known nineteenth century Swansea industrialist and pottery manufacturer who was also a leading naturalist of the day. From the Dillwyn family, the archival material passed to the National Museum. De la Beche was a skilled artist and many of his original sketches and drawings are included in the archive in addition to correspondence with many of the well-known geologists and natural historians of his day. The correspondence is particularly relevant to his early survey work in South Wales and south-west England, to the establishment of the Geological Survey, and to the Devonian controversy that De la Beche had with Murchison and Sedgwick as referred to in the caption to the portrait on p. 10 of *The Linnean*.

The illustration on the enclosed booklet is one of De la Beche's drawings from the archive, and you may wish to draw attention to the article on p. 13.* There is also a longer book published by the Museum in 1977.

Yours sincerely,
MICHAEL BASSETT
Keeper, Department of Geology

*The publication referred to is: McCartney, P. J. (1975). Henry De la Beche – a new kind of geologist. *Bulletin of the National Museum of Wales, 21:* 13–28.

The longer book is: McCartney, P. J. (1977). *Henry De la Beche: Observations on an Observer.* Friends of The National Musuem of Wales, Cardiff. xiii + 77pp.

Field Studies Council Research Unit,
University Department of Zoology,
Cambridge

25.7.89
Dear Editor,

Who funds taxonomy?

Since discussion of the crisis in the support of comparative biology (1988, *The*

Linnean 4(3): 22–23) I am able to provide first-hand evidence of the gravity of the crisis now confronting taxonomy in Britain. This comes from an attempt to obtain funding for continuation of my studies of Phoridae. I outline my experience below.

With a track-record of more than fifty papers on Diptera, mainly in medical entomology but including a key work on the identification of British Dixidae, in 1975 I turned my attention to the taxonomy of the Phoridae (scuttle flies) of the world. Having authored or co-authored more than 150 papers on this huge, and biologically-diverse, family of flies, I am now recognized as the world authority on scuttle flies. In 1984 my employers (the Field Studies Council) obtained pump-priming funding from a charitable trust to establish me as a Research Fellow based in the University of Cambridge. The expectation was that another source of funding would be found after five years. In the event the trust put up money for an extra year and the Field Studies Council instructed me to launch an appeal in order to try to save my research unit when its present funding expires in August 1990. The months of April and May 1989 were largely devoted to sending out appeal leaflets along with a covering letter.

The appeal was sent to 208 local (within 30 miles of Cambridge) commercial organizations, 322 national/international commercial organizations, 26 governmental/statutory organizations, 174 non-commercial/non-governmental organizations, 94 wealthy celebrities and 187 mega-millionaires. Overall only 30.8% (ranging from 11.1% for local commercial organizations to 69.2% for governmental organizations) have replied so far. Positive replies represent 1.2% plus 1.4% still under consideration. So far the mean return is £1.46 per mail shot (ranging from 0 for governmental organizations to £5.59 for mega-millionaires). The mean return for local commercial organizations is only £0.38 compared with £0.71 for national/international commercial organizations. The latter can now expect to receive up to 20 000 appeals each year in the U.K. Some receive more than this.

The failure to obtain funding from any governmental organization is especially striking. An essential problem seems to be that the Research Councils, for example, will only provide an investigator's salary "in exceptional circumstances" as applicants for funding "for research grant support should normally be permanent members of the staff of U.K. Higher Education Institutions". With the exciting developments in fields such as molecular biology coupled with a cutback in funding for higher education, the employment of taxonomists by the latter has almost ceased. If taxonomists are no longer being employed as permanent members of staff in higher education then the effect is to exclude experienced taxonomists from Research Council support. The Natural History Museum and the provincial museums are unable to employ sufficient specialists to cover all the major groups of organisms in need of taxonomic work. So who does fund taxonomy? Does anyone care?

When it has become apparent that perhaps nine tenths of the world's fauna and flora has yet to be described and named (e.g. Stork, N. E., 1988. *Biological Journal of the Linnean Society, 35:* 321–337), Fellows of the Society should be aware that Britain is pulling out of taxonomy at a time when concern for the threat to the world's biodiversity, by habitat destruction and degradation, is becoming a matter of political concern. The need for taxonomists has never been more urgent. As an established taxonomist, however, I found myself confronted by the

choice of abandoning a professional career in taxonomy or emigrating.

Yours sincerely,
R. H. K. DISNEY

Flora Europaea News

On 27 June 1989 the manuscript of the second edition of *Flora Europaea* volume 1 was delivered to Cambridge University Press. The task of revising and updating the *Flora* was carried out at the University of Reading by Dr John Akeroyd, who was employed as Research Officer with a grant from the Linnean Society's *Flora Europaea* Trust Fund. Considerable assistance was given by a number of outside contributors, as well as by members of the Editorial Committee acting as family editors. Major groups treated in this volume include the Pteridophytes, Caryophyllaceae, Chenopodiaceae, Cruciferae, Papaveraceae, Ranunculaceae and Salicaceae.

Since the publication of the first edition of volume 1, over 200 new species and 140 new subspecies have been described from families included in this volume, as well as 25 species already known from outside Europe which are now also found within the Flora's area. Thirty-four additional adventives are now recorded in this volume of the Flora, having satisfied the criteria for naturalized status. As a result of the revision of volume 1, some 350 extra taxa are treated in the new edition; at the same time around 20 taxa have been deleted. The geographical information has also been thoroughly revised, with the benefit of the *Atlas Florae Europaeae* project's data which have been published for most of the families in volume 1.

Mr A. O. Chater and Dr J. R. Edmondson have joined the Editorial Committee of *Flora Europaea* since the publication of the first edition of the *Flora* was completed. Following the deaths of Professor D. H. Valentine and Professor T. G. Tutin, there have been several further changes to the composition of Committee. Professor N. A. Burges is its new Chairman, in succession to Professor Tutin. Professor D. M. Moore took over as the Committee's Secretary in 1986 when his predecessor, Professor V. H. Heywood, moved to Kew. Following the completion of the revision of volume 1, the Committee appointed Dr Edmondson as Secretary with effect from 27 June 1989.

Although the post of Research Officer is now in abeyance, Dr J. R. Akeroyd has become a member of the Committee. Dr F. A. Bisby and Dr S. L. Jury have also recently joined the Committee, and Professor D. A. Webb has resigned. Professor V. H. Heywood, Professor D. M. Moore and Dr S. M. Walters continue as members of the Committee.

The Committee has resolved to continue with the revision of further volumes of the *Flora*. In view of the considerable help from botanists throughout Europe which was such a feature of the original project it has been decided that, if sufficient funding can be secured, the system of regional advisers will be reactivated. The new address for the *Flora Europaea* Secretariat is: Liverpool Museum, William Brown St, Liverpool L3 8EN. Tel: 051 207 0001 ext. 209.

Linnaeus and tobacco

Tobacco is a word of Spanish origin derived from the Haitian name 'tobaco' for the tube or pipe in which the Indians or Caribs smoked the plant (Fig. 1), while the Indian name for the plant itself was the 'petun'. Locally, however, in parts of Mexico, the plant was also referred to as 'tabac' and this confused the Spaniards who thought it alluded to the area whence it came and they accordingly named a Province of Yucatan—Tobaco. Whatever the derivation most authorities agree that the smoking of tobacco in pipes is a custom which prevailed in 'America' for many generations prior to the discovery of that continent by Columbus and that baked clay pipes were predominately Mexican in origin. Nevertheless Juan Ponce de León (a companion of Columbus on his second voyage) recorded that the smoking of tobacco in clay pipes was also common in Florida in 1513.

Fig. 1. Tobacco plant and Indian smoking pipe. From L' Obel *Stirp. adv. nova.* (1570).

The tobacco plant was first brought to Europe in 1558 by Francisco Fernandes (a physician to the court of Philip II of Spain) who had been sent to investigate the economic products of Mexico. The new plant was subsequently grown as a botanical curiosity in the various palace gardens of Spain and

Portugal. In 1559 Jean Nicot the French Ambassador in Lisbon sent back to the Queen Mother, Marie de' Medici, seeds and leaves of the 'petun' (the Indian name for tobacco—see above) pointing out the therapeutic value of the plant. From Paris the cultivation of the tobacco plant spread across France and by 1600 *herba nicotinia*—the name given it by Dalechamps, was known throughout

Fig. 2. Sepia drawing by Jean-Eric Rehn, 1747. In the collection of the Dowager Duchess of Roxborough, Guilford. Linnaeus is depicted smoking a 21", Dutch model, clay pipe.

Europe, gaining increasing importance as a medicinal cure all. Tobacco juice was prescribed for the 'French disease' while the leaves were laid on wounds to heal them and tobacco enemas were used for constipation. Meanwhile the habit of smoking was initiated and spread through the English example.

Ralph Lane, the Governor of Virginia, is credited with being the first English smoker and having together with Francis Drake brought tobacco and clay pipes

fashioned in the Indian style back to England in 1586. Ralph Lane is also attributed with teaching Walter Raleigh how to smoke—and Raleigh, who smoked his last pipe waiting to be beheaded (1618), was responsible for making clay pipes socially acceptable.

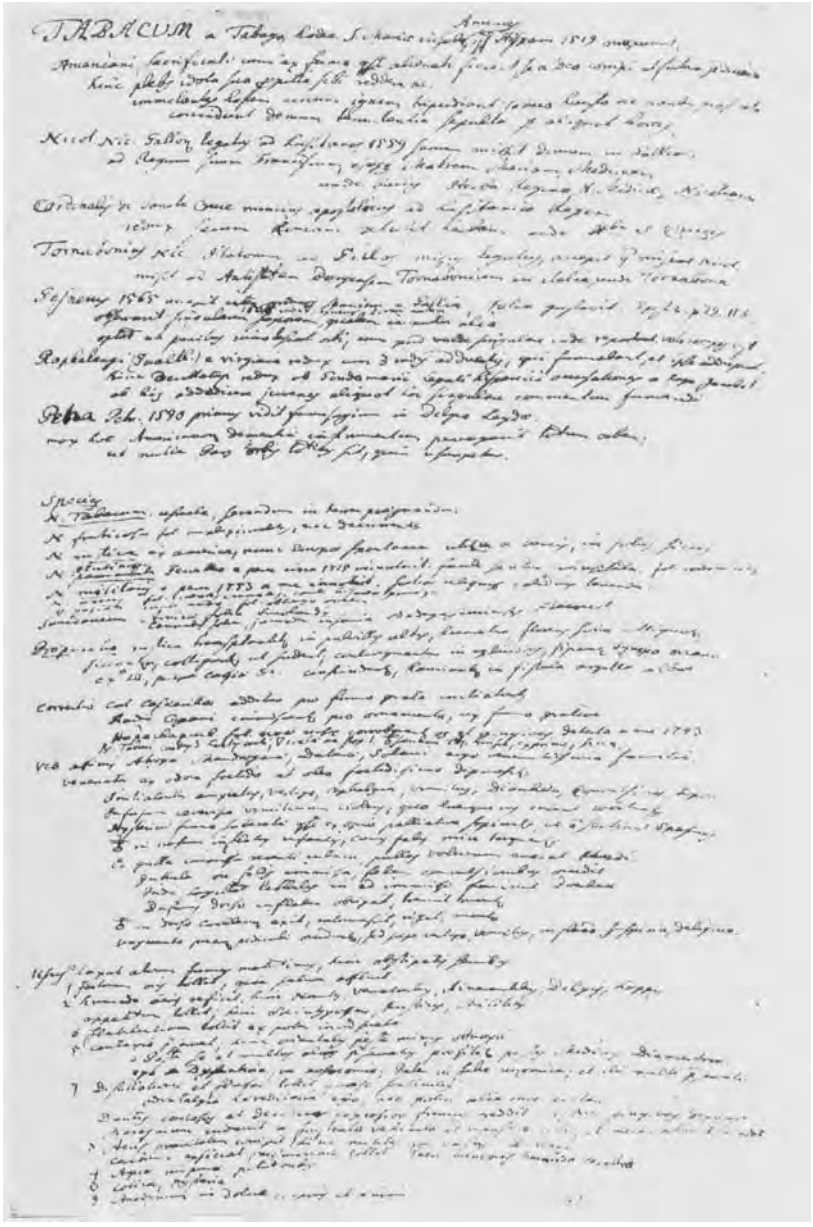


Fig. 3. Page of Linnaeus's notes on tobacco from which he abstracted information for his lectures.

Initially the English smoked mainly Spanish tobacco in their pipes, but when the new settlers in Virginia started sending back tobacco cultivated by the local Indians (in 1610) this preference changed. Today the English smoke almost exclusively best Virginian tobacco.

Clay pipe production developed around 1600 using the Virginian model of a small bowl set at an obtuse angle to the shaft. The first firm was founded in 1598 and by 1603 John Stuckney of Wapping was marking his pipes with the initials

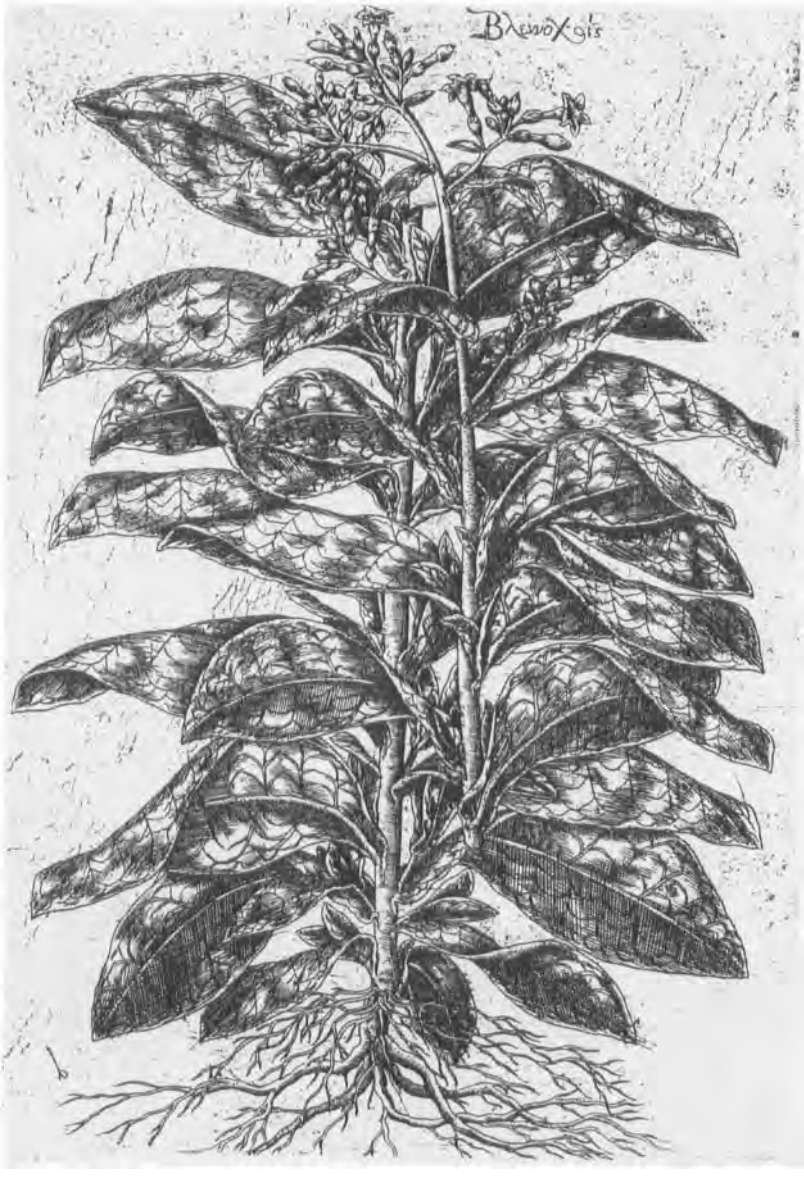


Fig. 4. Tobacco plant. From Paul de Reneaulume, *Specimen historiae plantarum* (1611).

IS. Fifty years later there were some 75 clay pipe manufacturers identifiable by their trade marks.

Clay pipes were made by hand in prodigious numbers using an iron mould

and a steel wire for forming the tube of the stem. The pipes were then very lightly fired to keep them soft and porous. The pipe makers of London became an incorporated body in 1619, and it was from England that the rest of Europe learned the 'art' of clay pipe manufacture. The habit of pipe-smoking was spread throughout the rest of Europe particularly by sailors and by the large number of armies engaged in the Thirty Years' War (1618–1648). On the continent the most important pipe manufacturing centre was Gouda in Holland where by 1700 there were some 500 workshops producing pipes with mouth pieces 18″, 21″ and 28″ long.

It was while working at Hartecamp in Holland for George Clifford in 1735* that Linnaeus seriously took up pipe-smoking. By the age of 40 (Fig. 2) he was a heavy smoker and apparently always carried a short clay pipe in his pocket. Linnaeus praised tobacco "as a recent and agreeable discovery" and recommended pipe-smoking for sailors, soldiers and fisherman as a protection against infection. He also considered smoking to be of special benefit to doctors or those who regularly visited the sick since it promoted expectoration! He also recommended it for severe colic and as a palliative for toothache. He did, however, admit that it loosened and blackened the teeth and destroyed the appetite. Earlier (prior to 1735) in his *Diaeta Naturalis*, started in 1733 and which formed the basis of his lecture notes on dietetics, (Fig. 3), he listed some 70 aphorisms including the one that tobacco should be considered a medicine rather than a regular diet and smoking is poisonous! Nevertheless he remained a committed smoker for the rest of his life.

In his *Materia Medica* (1749), Linnaeus records the extract of the tobacco plant as being effective in the treatment of scabies, ulcers, oedema, coughs and malaria; asthma, colic and hysteria, while he further considers it both an anodyne, and a narcotic, useful as a laxative and in the treatment of vomiting and in the leaf form as a plaster for wounds (see above). He further notes that it may cause nausea and is poisonous and stinking.

In the same year in which his *Materia Medica* was published, Linnaeus was destined to see the effect that tobacco had on the Swedish economy, when on his provincial journey to Skåne he visited the tobacco factory at Norrköping. This factory maintained its high output by dint of cheap, child labour. Linnaeus's attitude was that cheap labour was necessary to keep production going and that the children would otherwise have had only even worse alternatives available to them (Broberg, 1978).

Finally four years later Linnaeus formally described and named the tobacco plant *Nicotinia tabacum* in his *Species plantarum* (1753). The four syntypes include the illustration by Paul de Reneaulme in *Specimen historiae plantarum* (1611:37) (Fig. 4), a specimen cultivated in Clifford's Gardens (*c.* 1736–38) now in the Clifford Herbarium (BMNH), a specimen in Linnaeus's own herbarium (Savage catalogue 245.1 no provenance), and a specimen in the Joachim Burser Herbarium now in Uppsala.

B.G.G.

*Johanna Schopenhauer in a description of a visit to Holland in 1803 records that "there are few Dutch people from the finest to the humblest, who do not smoke" and notes elderly society ladies sitting solemnly with long pipes in their mouths and women of the lower orders (fish-, meat- and vegetable-sellers and bakerwomen) smoking short-shafted pipes as they worked.

Reference

BROBERG, G., 1978. *Brown-eyed, Nimble, Hasty, Did Everything Promptly Carl Linnaeus 1707–1778.* 52 pp. Uppsala: Uppsala University.

Record of the Proceedings of The Linnean Society of London for the 201st Session (1988–89)

Contents

1. Scientific Meetings

The session saw the completion of the three year series of bicentenary joint scientific meetings held in and around London. This also included the Society's involvement with the British Association at its annual meeting, held at Oxford, and the regional meeting held in Somerset. Announcements and details of the meetings as well as those of the two general interest meetings held during the session are in *The Linnean* 4(2): 10–11, 4(3): 14–17, 5(1): 11–12 and 5(2): 11–12. When details of the programmes were not available at the times of going to press they were included in the loose booking forms, a copy of each of which is held in the office. The proceedings of the scientific meetings will be recorded or published as in the table below:

Date	Title	Co-operating Body	Attendance	Proceedings
6 Sep	*Evolution*	BAAS Meeting	Not known (full)	Not published
20 Oct	*Heathers & Heathlands*	Botanical Society of the British Isles	142 (full)	*Bot. J. Linn. Soc.*
9–10 Nov	*Evolution & Extinction*	Royal Society	200+	*Phil. Trans. Roy. Soc.*
15 Dec	*Research Development in Study of Parasitic Infections*	British Society for Parasitology	142 (full)	*J. Parasitol.*
21 Jan	*British Mammals, Past Present and Future*	Mammal Society	145+ (full)	*Biol. J. Linn. Soc.*
9 Feb	*Molluscan Systematics: Linnaeus to the 21st Century*	Malacological Society	56	Not being published
16 Mar	*Developmental Pathways and Evolution*	Systematics Association	100	*Biol. J. Linn. Soc.*
12–16 Apr	*Evolution & Change in British Channel and Severn Estuary*	BES & EBSA	80 (full)	*Biol. J. Linn. Soc.*

Meeting of the British Association for the Advancement of Science

This was the first Annual Meeting for the Biological Sciences section, a combination of the former section D, Zoology and section K, Botany. The first President, Dr. Richard N. Perham, F.R.S., was a central figure in ensuring notable successes for attendance, finance and symposia content. Section D (Recorder: Dr S. J. Owens) was involved in most of the major themes of the annual meeting week including evolution, molecular electronics, biomolecular assemblies and biosensors (including the Presidential address on molecular recognition, molecular engineering and biomolecular assembly), and biotechnology. The programme also included a special, and most fascinating Mendel lecture by Professor Viteslav Orel head of the Mendel museum in Brno, Czechoslovakia. Attendance was very satisfactory for all the lectures. Indeed, the lecture theatre in Human Anatomy proved too small on the Evolution afternoon, and was crowded on the other days.

Section D of the British Association said it was very pleased to be able to participate in the Linnean Society's bicentenary celebrations and it thanked the Society for its financial support of the Education symposium.

Evolution and Extinction

This bicentennial two-day discussion meeting, organized jointly with the Royal Society, was held in the Royal Society's rooms. The sessions were chaired by Professor W. G. Chaloner and A. Hallam; there were seventeen speakers, with four from the U.S.A., and one each from France and Poland, in addition to British participants. Topics ranged from the causes of extinction as seen by a geneticist, through a wide-ranging consideration of the fossil evidence, from phytoplankton to the tetrapods. Mass extinctions (and particularly that at the Cretaceous-Tertiary boundary) received much attention, and the question of regular periodicity of mass extinction events and possible extraterrestrial causality were aired and debated. The last two lectures were concerned with Man's involvement in mass extinctions within historical time, and with his capacity to avoid his own demise. Over two hundred people attended the meeting during the two days. A dinner for all the speakers was hosted by the Biological Secretary of the Royal Society, Professor B. K. Follett, in the Society's rooms on the first evening.

The abstracts of the papers presented were given in *The Linnean* 5(2): 25–29. The only programme change from that shown there was that Dr. N. Shackleton gave a lecture on "Climate and extinction in the deep-sea sediment record" in place of that by Professor S. M. Stanley, who was unable to attend the meeting. The full text of the papers and discussion are published in the *Philosophical Transactions of the Royal Society.*

Research Developments in the Study of Parasitic Infections

This bicentenary meeting with the British Society for Parasitology was held at Burlington House on 15 December 1988. The meeting organized by Roy

Anderson, Christine Facer and David Rollinson was well attended with many guests from overseas. The papers ranged from antigens of parasitic helminths in diagnosis, protection and pathology to molecular approaches to DNA diagnosis and highlighted a wide array of subjects, approaches and techniques. The quality of the presentations and the breadth of the topics ensured the success of the meeting and truly illustrated some of the advances taking place within parasitology. The full proceedings were published as a supplement to *Parasitology*.

The meeting arranged to discuss European Floristic Studies on 12–15 July 1988 was cancelled due to lack of support but completed papers will be considered for publication in the *Botanical Journal* in the normal course.

On 12 January 1989 the Society discussed *The Way Ahead*. Twenty-two Fellows spoke in this, first venture at a formal debate.

General interest lectures were given by Professor P. Taquet, Musee d'Histoire Naturelle de Paris on *Buffon et le Jardin des Plantes, Yesterday, Today and Tomorrow* in commemoration, jointly with the French Institute, of the bicentenary of the death of Buffon; and by Dr J. Chatfield, Selborne Museum, on *Gilbert White and The Natural History and Antiquities of Selborne* in celebration of the bicentenary of its publication.

Specialist Groups

The Palynology Group again attracted overseas participants to its spring meeting which was held on 22 February 1989.

2. Social Events

Dinner in honour of the King and Queen of Sweden

King Carl XVI Gustav, as well as being an Honorary Member of the Linnean Society, is also a Patron of the Anglo-Swedish Society. It was, therefore, very appropriate to open the dinner to members of both Societies thereby including the latter in the bicentenary celebrations.

Their Majesties flew from Stockholm early in the morning of 5 October 1988 so that the King could open a Swedish exhibition, part of which was a tribute to our Society, being mounted by the Natural History Museum at lunch time. The King and Queen then attended the dinner, held in the Porter Tun room of Whitbread's Brewery, Chiswell Street at 19.30. It was a fitting venue, the Society's first Patron, King George III, having visited the Brewery with Queen Charlotte some two hundred years earlier. The dinner was attended by HE the Swedish Ambassador, four former British Ambassadors to Sweden, three former Presidents of Linnean Society and 290 other Fellows, members and guests. The toasts were, The King and Queen of Sweden, (the President); Queen Elizabeth II, (the King); Anglo-Swedish Friendship, (the President). Speeches were made by the President and the King and Sir Jeffrey Peterson, President of the Anglo-Swedish Society who closed the formal proceedings by thanking the

King. Their Majesties mingled informally with the guests both before and after dinner, finally departing at 23.15.

Kimberley Research Project 1989

See Report of Council, p. 32.

Conversazione

The President and Mrs Claridge received guests in the Library on the evening of 15 June 1989.

The exhibits, which were on show in the Council Room and Library, were: *Britain's Rarest Freshwater Fishes*, Mr A. Wheeler, F.L.S. (Epping Forest Conservation Centre); *Epping Forest Conservation Centre and Research* Dr & Mrs P. Moxey, (Epping Forest Conservation Centre); *The Madagascar Environmental Research Group*, Mr C. Raxworthy (Open University); *Project SOMA 1988*, Mr J. A. Gilman (New College, Durham); *Molluscs on Stamps*, Prof. P. Calow, F.L.S. (University of Sheffield); *A new approach in Palaeobotany: The ultra structure of the fossil spore wall*, Mr A. R. Hemsley (Royal Holloway and Bedford New College); *Lapland 1988*, Dr J. R. Packham, F.L.S. (Wolverhampton Polytechnic) and Mrs R. Wise, F.L.A. (Oxford University); *Alternative Management Strategies for Habitats with Multiple Uses*, Mr A. M. Houghton and Miss A.-M. Brennan, F.L.S. (Wye College); *British Trust for Ornithology*, Dr J. J. D. Greenwood, F.L.S., Director; *Kimberley, Australia 1989*, Prof. A. V. Hall, F.L.S.

A video, *The Push of People* and three videos in *The Webb of Life* series were shown by permission of The British Petroleum Company.

3. The Anniversary Meeting

This was held on 24 May 1989 with Professor M. F. Claridge, President, in the chair.

Elections

Following the reading of the Forms of Recommendation for Foreign Members for the third time and after extracts of the relevant Bye-Laws had been recited, the President appointed Prof. B. G. Gardiner, Mr G. W. R. Linsell and Mr G. R. Speed as scrutineers and declared the Ballots open. The results of the ballots were:

New members of Council:	replacing:
Prof J. A. Beardmore	Prof J. G. Hawkes
Dr P. E. Brandham	Dr D. L. Hawksworth
Dr D. Edwards	Mr C. M. Hutt
Dr D. J. Galloway	Dr C. E. Jarvis
Dr V. R. Southgate	Dr D. Rollinson

Foreign Members:

Dr N. Estrada-Rames	Colombia
Prof H. E. H. Paterson	Australia
Dr M. Van Campo	France

Fellows and Associates as in *The Linnean* 5(3): 14

The Officers were elected and re-elected as follows:

President	Prof M. F. Claridge
Treasurer:	Dr R. W. J. Keay
Secretaries:	Dr F. A. Bisby (Botany)
	Prof J. Green (Zoology)
	Prof J. D. Pye (Editorial)

Presentation of Medals and Awards

The President read the citations and presented the Linnean Medal for Botany, the Jill Smythies Award and the Bicentenary Medal. He read the citation for the Linnean Medal for Zoology but announced that its presentation would be delayed until the next session since Professor W. R. Hamilton was presently abroad on business. He read the citation for the H. H. Bloomer Award and presented it, and an accompanying box of champagne, to Mr Luke Gardiner, who was representing his father who sadly was unable to attend due to ill health.

Linnean Medal for Botany
Professor Sir David Cecil Smith

For thirty-six years, as research worker, teacher and administrator, David Smith has been deeply involved in universities. His reputation and achievements in all aspects of academic life have been widely recognized and his contribution to our knowledge of the physiology of lichen symbiosis is unequalled.

Whilst at St. Paul's School, London, he gained the Browne Scholarship to Queen's College, Oxford, where he read Botany, graduating with first class honours in 1951. The Christopher Welch Scholarship from Oxford University enabled him to undertake postgraduate research first at Uppsala University for one year, with additional support from the Swedish Institute, returning to Queen's College, Oxford to complete his researches. He achieved his DPhil in 1954 for his work on lichen physiology.

After two years military service during which time he rose to the rank of Second Lieutenant in the Royal Artillery, he returned once again to Queen's College as a Browne Research Fellow, continuing his work on lichens. In 1959, he received the Harkness Fellowship of the Commonwealth Fund, which enabled him to carry on his researches at the University of California, Berkeley. However, it was not long before he was back in Oxford again, this time to take up a lectureship in the Department of Agricultural Science (1960), where he built up an international reputation through his pioneering work on the carbohydrate metabolism of lichens. He remained at Oxford until 1974, during which time he became a Senior Member of Linacre College (1962–64), Royal Society Senior Research Fellow at Wadham College (1964–71) and Tutorial Fellow in Biological Sciences there (1971–74).

In 1974, he was appointed Melville Wills Professor of Botany at Bristol University, becoming Director of Biological Sciences there in 1977. In 1975, he was elected a Fellow of The Royal Society for his distinguished work on the physiology of symbiotic systems. He has played an active role in The Royal Society, becoming a Vice-President and a Member of Council (1978–80) and its Biological Secretary (1983–87). His appointment as Sibthorpian Professor of Rural Economy enabled him to return once again to his beloved Oxford, where he was to remain for the next seven years. During this time, he was a Fellow of St. John's College and Head of the Department of Agricultural and Forest Sciences. In 1987, he became the Principal and Vice-Chancellor of Edinburgh University. Questioned about the taxing nature of his new appointment, David Smith responded: "I've had a great deal of pleasure out of working in a university... I think that, after a time, one has to plough something back into the business... it's about time I took on the role and tried to create the best environment I can for other people... I'm dedicated to all aspects of academic life".

David Smith has an extensive number of published papers to his credit, mostly concerned with the biology of symbiosis. Initially, his research was concerned with associations between algae and fungi, but over the past twenty years it has expanded to embrace a variety of associations between algae and invertebrates. He has co-edited two books, "The Cell as a Habitat" (1979) and "Nutrition in the Lower Metazoa" (1980), and co-authored "The Biology of Symbiosis" (1987). To many he will be best known as senior editor (1965–83) of *The New Phytologist*, a major international botanical journal, and of the *Proceedings of the Royal Society, Series B* (1983–87).

Despite his strong commitment to a broad spectrum of university duties, and a very active research career, he has found time to play a significant role on research councils, national committees and learned societies, including NERC, ARC/AFRC, SERC and the Biological Sciences Subcommittee of the UGC. He has long had a close association with the British Society, of which he was a founder member, acting as its first Librarian (1962–72) and its President (1972–74). He has also been the President of the British Mycological Society (1980) and of the Society for Experimental Botany (1983–85). In 1988, he was elected a Fellow of the Royal Society of Edinburgh. His outstanding ability to present material in a novel and interesting way, laced with delightful humour, has made him much in demand as a guest lecturer. Many will recall his masterly keynote address to the International Mycological Congress at Tampa, Florida (1977).

David Smith's innovative work and tireless efforts on behalf of British science have been recognized by the conferring of honorary doctorates from the Universities of Liverpool (1986), Exeter (1986) and Hull (1987) and of a richly deserved knighthood in 1986. The Linnean Society is proud to number amongst its members such a distinguished scientist, and is delighted to be able to add to the honours he has already received.

Linnean Medal for Zoology
Professor William Donald Hamilton

Bill Hamilton is widely known as a theoretical biologist and geneticist. His ideas have been notable in helping us to understand the evolution of social and

co-operative behaviour in animals. His work is characterized by a high degree of originality which often challenges the pre-conceptions of the reader, some of whom, on first reading, must have thought "this cannot be right". But the rigor and clarity of his arguments are such that many have been stimulated to test his ideas and subsequently to use them to explain their observations.

Born in Egypt in 1936 to New Zealand parents he attended Tonbridge School taking British citizenship as a teenager. After school he did national service in the Corps of Royal Engineers in which he was commissioned in 1956. An interest in engineering remains to the present day. While in the army Bill expressed an interest in overseas travel which the army attempted to satisfy by giving him the task of arranging overseas postings for other servicemen. He took his first degree at St. John's College, Cambridge in 1960 having studied Botany, Zoology and Mathematics before specializing in genetics. Subsequently he studied for his PhD at the London School of Economics and University College, London, and gained his doctorate in 1968 by which time he was already in post as a lecturer at the Department of Zoology, at Imperial College. In obtaining this first appointment it is debatable who was more fortunate, Bill or Imperial College. The early years at Imperial College gave Bill the opportunity to publish ideas developed as a postgraduate including a much quoted paper "The moulding of senescence by Natural Selection", and the concept of "inclusive fitness". It is probable that the encouraging reception of his publication led him to submit his thesis on "The Evolution of Social Behaviour".

While primarily known as a theoretician and a capable mathematician, Bill is an active field biologist with particular interests in insects and plants. Through his interests in sex-ratio theory and the evolution of social insects, he continues to study the fauna of rotting wood. Few biologists have his drive and enthusiasm to wade into a muddy pond to look at an interesting plant or to climb a tree or cliff to examine a wasp's nest. A field trip with him is always educational and enjoyable, though not always comfortable. He has made at least three trips to the Amazon forest and on one occasion found himself the proud host of the human bot fly. He professed himself rather flattered that of all the people on the expedition the fly should have chosen him. While in Brazil he studied fig wasps when he was able to validate previous views on the evolution of sex ratios and to demonstrate the conditions under which lethal fighting and male polymorphism are advantageous. He is currently working on Brazilian carrion beetles.

In 1978 Bill left Imperial College to become Museum Professor of Evolutionary Biology at the University of Michigan, U.S.A. From around this time one of his continuing major interests has been in the evolutionary advantages of sexual reproduction, on which he has published a number of important papers. This work continued at Oxford, where he became a Royal Society Research Professor in 1984, a position that he still holds. He is currently exploring an idea that the variation produced by sexual reproduction is advantageous in coping with the continuing and massive pressures imposed on organisms by parasite burdens. Also his interest in the dynamics of populations and gene frequencies has led to the study of chaos on population models. His room is always filled with fascinating computer graphics. We understand also that Bill has recently completed a novel. If the contents at all reflect his biological interests in sexual reproduction and sex-ratios it should become a best seller!

Over the last few years Bill Hamilton's important contributions to biology have been increasingly recognized. He has been awarded the Scientific Medal of the Zoological Society of London and also has been elected to both the American Academy of Arts and Sciences and the Royal Society of London. We are thus delighted in the Linnean Society to recognize his very considerable contributions to biology by presenting him with the Linnean Medal for Zoology for 1989.

H. H. Bloomer Award
Mr John Campbell Gardiner

A feature of the Linnean Society is the way it includes in its Fellowship some very distinguished biologists whose professional work is in some quite different field. The H. H. Bloomer Award enables us in a special way to recognize and honour the achievements of such 'amateurs'—those whose biological work is done entirely for the love of it. Today we are delighted to make this award to John Campbell Gardiner who, in addition to very distinguished work as a botanist (and particularly as a bryologist), has contributed much to the affairs of the Society itself, notably as Treasurer from 1975 to 1979. Jack Gardiner is a Chartered Accountant by profession and from 1959 to 1972 was an executive director of Sears Holdings Ltd.

After the Second World War, Jack took up the study of botany with the dedication and thoroughness that he brings to everything he does. In 1949 he joined the Botanical Society of the British Isles, and soon became involved in all of its activities, both in the field and in the committee room. He gave some assistance to the then Secretary, J. G. Dony, who was engaged in revising the *Hertfordshire Flora*, and impressed members of that Society with a list of hints on the identification and distinguishing of closely related species of flowering plants. He played a full part in amassing the records that led ultimately to the publication of the *Atlas of the British Flora* in 1962. He served as Treasurer of the BSBI from 1958 to 19871. That Society, like the Linnean Society, benefited greatly from his enthusiasm and his very considerable management skills. It was these qualities that he brought to the service of the Teesdale Defence Committee from 1965 to 1968. Although the compaign to prevent the building of a dam in upper Teesdale was a failure, it was not a fiasco, as it well might have been without his guidance. The lessons learned at the time led later to the successful introduction of the first Wild Flower Protection Bill into Parliament.

Jack made substantial contributions to the *Flora of Surrey*, published under the authorship of J. E. Lousley in 1976. In the 1970s he turned his attention to the serious study of bryophytes. He had joined the South London Botanical Institute in 1958 where the curator had been the bryologist, W. R. Sherrin. The two men shared an interest in the county of Surrey and, in particular, in its mosses and liverworts. Gardiner worked from 1972 to 1981 on his *A Bryophyte Flora of Surrey*, which appeared in the *Journal of Bryology (11:* 747–841) in 1981. With characteristic acute judgement, he chose to map his records on a basis of 5-km squares. This system proved to reveal distribution patterns satisfactorily without making the collection of records too time-consuming, which a smaller unit would have done. He also compiled the lists of earlier workers and searched the relevant herbaria. These features have made his *Bryophyte Flora* a model of its kind, and

other bryologists currently engaged on County bryophye floras are working along similar lines.

The Bloomer Award is for "an amateur naturalist who has made an important contribution to biological knowledge". Jack Gardiner is really a "type specimen" for this award and we are, indeed, delighted to make it to him today.

The Jill Smythies Award
Miss Christabel King

Christabel King, born a Londoner, now lives at Stevenage. Her father, George King, was Alec Harley Reeve Professor of Electrical Engineering at Surrey University, and her mother (who is present as a guest today) a professional musician.

George King's several hobbies included gardening, mainly of the greenhouse variety, and it seems that Christabel's favourite reading matter, as a child, was horticultural catalogues, on whose dark horses she then gambled her pocket money! She shared her father's particular interest in cacti and orchids, and her affection for, and understanding of, these groups can certainly be seen today in her work as a botanical artist.

In fact, Christabel is an artist who is also a botanist, as she has an honours degree in botany from University College, London. After graduating, she worked for a while in a nursery garden, until she heard of the course in scientific illustration at Middlesex Polytechnic, and signed up there for two years.

Since 1975, she has been a regular contributor to *Curtis's Botanical Magazine* and its successor, *Kew Magazine*. For several years, she also acted as assistant to the Editor, helping in both editorial matters and research, and so using and developing her dual skills as artist and botanist. The range of plants she has portrayed so accurately and beautifully in colour, and whose structural details she has displayed in exemplary line drawings, is very wide. Among the most remarkable are those of the genus *Echinocereus* which grace the *Kew Monograph* by Nigel Taylor. Cacti are peculiarly difficult subjects, rarely elegant, generally bristling with spines (all demanding the artist's individual attention), and flowering like fireworks: unpredictably, briefly, often at night, and in shining luminous colours not found in any paint-box! Christabel's cactus drawings are among the best ever done.

Among other works she has illustrated are Professor Heywood's *Flowering Plants of the World*, where she was one of the three contributing artists, and *All Good Things Around Us*, which might be described as a modern culinary herbal, with text by Pamela Michael. The drawings for this book were subsequently shown at Agnew's. In 1987, Christabel went trekking in the Ruwenzori, experiencing the trials of the artist in the field and preparing the illustrations for a book on the area by Guy Yeoman, who led the expedition. The book will be published later this year, and the drawings will be exhibited at the Royal Geographical Society.

Besides complementing and enhancing the work of professional botanists, Christabel enjoys teaching the skills of botanical illustration and has been giving courses at Capel Manor since 1984. She is undoubtedly a most worthy recipient of The Jill Smythies Award for 1989.

The Bicentenary Medal
Professor Paul Martin Brakefield

Paul Brakefield went up to Pembroke College, Oxford, in 1971 to study Zoology. There, his already strong interests in field biology and natural history were further encouraged and expanded. After graduating he joined the Oxford University Expedition to Ecuador where he was able to study in the field the behaviour and genetics of assemblages of mimetic tropical butterflies. This interest in the ecological genetics of butterflies, was originally sparked as a school boy by reading E. B. Ford's *Ecological Genetics*. This area of interest was continued on his return to Britain when he took up a research studentship at the University of Liverpool. There he worked on the maintenance and inheritance of polygenic variation in patterns of wing spotting in the Meadow Brown Butterfly, *Maniola jurtina*. He was greatly influenced in Liverpool by the late Professor Philip Sheppard. Paul's PhD work clarified a number of problems concerning the nature of selection acting on spot patterns and led to a sounder ecological understanding of this previously intensively studied insect.

After completing his PhD, Paul spent two years at the University of Utrecht, in The Netherlands, as part of the European Science Exchange Programme. There he was able to extend the geographical range of his work on the Meadow Brown and also to study melanism in the two-spot ladybird with Professor Scharloo. Incidentally during his stay in The Netherlands he not only became fluent in the Dutch language, but also met his wife, Titia.

In 1982 Paul returned to Britain to take up a NERC Postdoctoral Fellowship to work at Exeter University on the remarkable boundary phenomenon between populations of the Meadow Brown in south-west England. This boundary was first documented in classic studies over many years by the late Professor E. B. Ford and his many collaborators. Some of the mysteries of the reported rapid shifts in geographical location of the boundary between different wing spot types were clarified by Paul's investigations. He showed that the apparent shift could be explained by differences in the seasonal timing of emergence of different wing spot morphs, and by differences between years in dates of the previous field sampling programmes.

Paul has worked on variation in field populations of a number of insects including the ladybird, *Adalia bipunctata*, and the Jersey Tiger Moth, *Euplagia quadripunctaria*, but his great enthusiasm for butterflies has dominated his research efforts. In addition to long-term studies on the Meadow Brown, he has also found time to investigate quantitative variation in the Common Blue, *Polymmatus icarus*. More recently he has returned to work on tropical butterflies. By a combination of field and laboratory experiments he has studied the evolution of seasonal polyphenisms in some African brown butterflies of the family Satyridae. This and his other projects were continued during his tenure of a University of Wales Postdoctoral Fellowship at Cardiff, when I personally had the great pleasure of having Paul as a colleague. In 1987 he left Cardiff for the Chair of Evolutionary Biology at the University of Leiden, The Netherlands, where he now leads a prestigious research group.

Paul is one of the most active and productive of the younger generation of British biologists. His enthusiasm for all aspects of his subject is unbounded. During his time in Cardiff it was commonplace for me to enter a glasshouse or

insectary room expecting to see it stocked with rice plants and planthopper or leafhopper cultures, only to find it taken over by swarms of butterflies. I am confident that this continuing enthusiasm will lead to many new and exciting discoveries in population and evolutionary genetics. Leiden's gain is our loss. I hope that he will continue the practice already well established, of publishing some of his most important findings in the journals of this Society. Paul Brakefield you are a worthy recipient of the Bicentenary Medal which I am delighted to present to you.

Treasurer's Report

As this is my last financial report to Fellows I would like to say how enjoyable it has been during the past decade to work with colleagues such as Doris Kermack, Willie Stearn, Gren Lucas, David Cutler and others who have done so much to make the Society what it is today. Were I ten years younger I would like to stay in office for another ten years, but age being what it is I leave it at that.

Irene Manton died a year ago and soon thereafter we heard from her executors that the residue of her estate had been bequeathed to us. The gift amounted to some £170 000 which, duly invested, will provide us with income of about £10 000 a year. Also in Irene's will was the request that from the money she left to us we create a prize for the best PhD thesis in botany similar to the existing scheme in zoology operated by the Zoological Society. The zoological prize is awarded annually. In order to create income to pay for the award and administration we have provisionally put aside £25 000 which in due course will become an Irene Manton Trust Fund in its own right. Council at the moment is working on the modus operandi.

The Kimberley project was a great success. The organizer and the two leaders kept within the budget of £110 000 all of which and more are covered by donations. Our voluntary contributions of £2000 for the project and £5000 towards the administrative costs of the RGS were well worthwhile. Nigel Winser, the overall project organizer, Andrew Goudie the leader, Martin Sands the deputy leader (the latter also on Council) and the RGS generally have all earned our congratulations and thanks.

And so to the 1988 balance sheet. Without taking into account the Irene Manton bequest which fully comes into effect in 1989, we made a profit last year of £38 300. This apparent increase from the £9000 profit in 1987 requires some explanation. In 1987 we made provision of £33 800 for building repairs and library purchases. This provision, as always, was taken from profit. We did not make any provision in 1988 as there was no need. Had we transferred the same amount as in the previous year, that is to say £33 800, our profit in 1988 would appear to have been £4500 less than in 1987. Against this, however, we returned to Fellows by way of journals £51 700 which is £9000 more than in 1987. Details are given on page four of the balance sheet. The fact that we could do this regardless of provisions and still make a profit suggests that 1988 was our best financial year ever.

There is one aspect of the accounts that deserves an exclamation mark. In December 1987 the market value of our investments was £522 000. In December 1988 it was £665 000. In April of this year it had reached £725 000. Add to this Irene Manton's bequest and we are, incredibly, within sight of a million.

A million pounds to-day is not what it was ten or fifteen years ago. Nonetheless...!

Apart from the figures I have already mentioned the balance sheet holds no surprises. We forecast a decrease in revenue from the sale of journals because of the strength of sterling vis-à-vis the dollar. It happened, to the extent of about £10 000. We could do nothing about that. We forecast that the cost to the Society of journals and the Newsletter for Fellows would exceed their annual contributions. It did, by about £16 000, which is why Fellows have been asked to pay for a second journal at cost. And our total expenditure last year, compared with 1987, was up by only 4.4 per cent which, bearing in mind it was less than inflation, I consider not at all bad.

As this is my last report I do make one plea to Ronald Keay, my very able and experienced successor and to Council. Our superb library is the only real asset we can pass on to posterity. I hope that the first-ever provision of £20 000, which in 1987 we allowed for library purchases, will at reasonable intervals be repeated.

And finally, every year I thank those who have contributed so much to our good fortune. This year I would like to thank them again, not only personally but also on behalf of Society Fellowship. Sue Darell-Brown is no longer with us but I thank her in absentia; I thank Academic Press our publishers and James Capel our brokers; I thank Roger Goodenough who spends so much of his time giving us financial advice; and Charles Goodhart who together with Roger Goodenough form our very professional Finance Committee; and of course the staff. And last but by no means least, I thank my predecessor, Jack Gardiner who received far too little credit for having started the upward financial spiral. The Society owes so very much to comparatively few people.

July 1989 CHARLES M. HUTT

Executive Secretary's Report

Reverting to his pre-bicentenary practice, the Executive Secretary reviewed events and on this, his last attendance, highlighted some aspects of the Society he considered should be brought to Fellows' attention.

Concerning the scientific meetings, he questioned whether the one-paper evening meeting would long remain viable. Whilst specialized subjects were critically important, their relevance was sometimes restricted to a selected few and, bearing escalating travel costs in mind, tended to attract small, mainly local London audiences. As the effort involved in arranging a meeting was not proportional to the numbers attending, specialist group and other all day meetings which attracted greater participation were, at least administratively, more attractive. He also commended the selection and timely airing of topical subjects such as the *Nuclear Winter* and *Evolution and Extinction* meetings whenever possible. He adjured the Fellowship to suggest ideas for meetings rather than leaving the onus on the Committee and Officers. On the other hand, the Specialist Groups were dynamic and, whilst their meetings were held at irregular intervals, they were obviously important events and their secretaries were deserving of praise.

Referring to the Rooms and their use he asked Fellows to bear in mind the magnificent but often under-used assets at their disposal and to make use of them

when possible. The Meeting Room had been refurbished and plans were in train further to update the visual aids. The use of the Rooms for social intercourse was another aspect which, whilst it had been encouraged in a small way, could be further exploited.

Report of Council

This report puts on record many items which were not reported verbally at the meeting.

The Bicentenary

Dr Cutler, then Botanical Secretary, had chaired the preliminary subcommittee which reported its proposals for the Bicentenary to Council on 9 March 1981. The Bicentenary Committee first met under his chairmanship on 1 December 1983 and after 17 meetings was formally disbanded on 1 November 1988. It had co-ordinated activity, delegating detailed implementation of specific matters to the other committees and to individuals. These have been variously reported in *The Linnean 3*(3): 1–7, *4*(1): 1–2, *4*(2): 1–6, *4*(3): ii & 2–6, *5*(1): 4 & 44–65 and *5*(2): 3–6.

The session included the second half of the bicentenary year: seeing the conclusion of the scientific programme with the meeting at Taunton, p. 21; the closure of the Kimberley Project field work, (see below), the rounding-off of the social programme, p. 22 and the winding down of publicity devoted to the Society and its history.

To complete the record in *5*(1): 49 *et seq*, illuminated addresses have been subsequently received from La Sociedade Broteriana, Portugal, the Royal Museums of Scotland and the Royal Horticultural Society, the latter being presented in person by Mr Robin Herbert, President, at the business meeting on 20 October 1988. The former is an especially fine example of the illuminated calligraphy. Congratulatory messages have also been received from the Goulandris Natural History, Greece and the Linnean Society of New York. The latest known article about the Society was in *Small Gardens*, *5:* 24 May 1989 (ISSN 0268–1382).

Kimberley Research Project, Australia 1988

Because of its wide ranging impact, notes and reports have also been published elsewhere. Council was delighted to hear that the field work had been completed so successfully, on 31 July 1988, without mishap and that Qantasbase had closed. It was relieved to hear from the Treasurer that the books would balance and that they were even in danger of showing a credit. That the Patron, H.R.H. Duke of Kent, was able to attend the lectures on 19 April 1989 and the subsequent reception, immediately following his duties in connection with the Hillsborough football disaster, showed his personal commitment. Council was, therefore, especially pleased to be able to show the Society's appreciation to him as well as to the sponsors, members of the Australian governmental community, the organizing committee, the administrative staff and team by entertaining them. It noted with satisfaction the extract of the Natural Environment Research Council report, read by Sir George Bishop on behalf of Lord Shackleton, Chairman of the Committee, after the lectures: "... I think the work is of

the highest quality and the results will be of international significance. Nearly all the proposed scientific objectives have been achieved, and certain unexpected scientific discoveries such as *Linnaea gilgai* have resulted. Modifications of the original proposals are remarkably small, considering the nature of the project,... It gave the Council (NERC) presence on an international research project.... The report was accepted and graded as excellent".

The Council (of the Society) is also pleased to report that, in recognition of the Project, the Geographic Names Committee of the Government of Western Australia has officially sanctioned approval of the *Royal Geographic Gorge*, the *Linnean Falls* and the *Amy Falls*, the latter named after the daughter of the project leader. The *Linnean Falls* are at grid reference 415023 to the South West of Mount Vincent on the King Leopold Ranges.

Lapland 1988

Prior to setting out from Stockholm to retrace Linnaeus's journey of 1732, the party of twenty-eight, including two descendants of Linnaeus, was entertained to dinner by the Swedish Linnaeus Society. On behalf of the Linnean Society of London, the leader, Dr J. R. Packham, F.L.S., made a presentation to Professor B. E. Jonsell, F.L.S., President of Svenska-Linné-Kallskapet, first reading the following address:

"Mr President,

We were overwhelmed by the goodwill shown by you and your countrymen at our Bicentenary Celebrations in London on 24 May. We were delighted that you yourself consented to be with us. The magnificent presentations from your Society and from other august Swedish institutions will be treasured by us and will provide a continuing reminder of the close links between our Societies.

The atmosphere at our meeting seemed to me—you will recall that I was not elected at the time—reminiscent of Christmas, with the giving of unexpected and therefore all the more welcomed gifts, and with words of good cheer.

Our Council resolved that such an occasion should not be completely unremarked outside the Society and that your Society should be brought up-to-date with the activities of mine over the last two hundred years.

This small gift can in no way emulate the magnificent (and weighty!) volumes you personally brought and handed over to my predecessor, nor can these words adequately convey the feelings of all of us in the Society when you spoke and presented us as well with the unique gold medal and illuminated scroll. However, I hope you will accept this copy of the Bicentenary History of the Society by Professor William Stearn as a mere token of my Society's heartfelt appreciation of your goodwill and generosity. We hope that it may grace your Society library and in future be of interest and use to your members. Certainly we hope it will long remain as a tangible reminder of the liaison between our two Societies which are so closely linked by a common name.

You will, I hope, forgive us for not providing a Swedish translation and, unlike you, for not using the hosts' mother tongue. We apologise for not being so well educated.

Whilst addressing you in this remote way may I also thank you for the enormous help your Society, through the good offices of Roland Moberg, has given in the "Lapland revisited" field trip.

May I wish all of you who are taking part in that venture the very best of success and good fortune. We look forward to hearing of your activities later in the year.

Mr President, please accept this gift with the hope that our Societies will forge even closer links in the years to come".

MICHAEL CLARIDGE, *President*

Presidential Regalia

The presentation of Presidential insignia was made by Dr C. W. Taylor, President of the Association of Applied Biologists during the business meeting on 16 March 1989 as a bicentenary gesture and in recognition of the long-standing links between the two organizations. It is in the form of a gold-plated badge bearing an enamelled coat of arms surmounted by *Linnaea borealis*, suspended as a neck decoration on a green silk ribbon.

Scientific Meetings

The Society was nearly overwhelmed by the popularity of the meeting on British Mammals held on 21 January 1989. Selecting a Saturday allowed many amateur biologists to apply and over fifty had to be disappointed. This was one of three meetings held in Burlington House during the session which were over subscribed. Indeed the attendance figures, recorded on p. 20, give some idea of the popularity of the subjects discussed during the session.

The two meetings held away from the Rooms, at the Royal Society and Taunton, were equally popular. Council is very aware of the background work required to organize such meetings and both compliments and thanks the Fellows involved.

Following the success of the joint one day meetings, Council has approved the continued planning of such meetings whilst also including some single paper communications.

The President was invited to be the speaker at a seminar held in Uppsala on 9 December 1988 on *Acoustic signals in Auchenorrhyncha* held to celebrate the 80th birthday of Professor Frij Ossionnilsson. His subject was *Insect Drummers* and *Rice Brown Planthoppers: a problem in applied taxonomy.*

Sixth Form Lectures

A postal strike was carefully timed to coincide with the routine mailing of the programme to the schools at the beginning of the year. However, the series is now so well known that many teachers telephoned or discovered details from the newspapers' free educational space and attendances were not too badly reduced. The symposium covered *The Battle against Human Parasitic Diseases.* The students and teachers who attended this were invited to visit and look round the Library during the lunch break. Council notes that Mrs V. M. Purchon, who again arranged an interesting and stimulating programme, has additionally offered to help Fellows with the organization of symposia planned away from Burlington House.

Publications

In spite of prognostications to the contrary, the sales of journals held up very

well indeed, the introduction of the third volume of the *Botanical Journal* having, if anything, a positive effect.

In the Footsteps of Linnaeus, Lapland 1988, which includes lists of plants and birds identified on the field trip, was published under ISBN 0–95–6207–2–6 with Society backing, 450 sales have resulted to date.

Biological Survey Need & Network, ISBN 1–85377-006-X, the report of a Society working party chaired by Professor R. J. Berry, was launched on 14 July 1988. This generated interest at the NERC, becoming the subject of a meeting held at the Royal Society in January 1989. Correspondence continues.

Fellows will have noticed the bicentenary embellishments to the covers of the numbers of the journals which carry the proceedings of joint meetings. When asked for, run-ons of these numbers have been produced for the participating societies, generating a small but significant boost to the revenue of the Linnean Society—Academic Press Joint Account.

Staff

As reported formally in *5*(3): Miss S. E. Darell-Brown left on 31 March 1989 after ten years as the Administrative Officer and Mrs Jacquie Elliott left after two years as the part-time bicentenary secretary. They have been replaced by Miss K. M. Gallen and Mrs N. Leslie, respectively, the latter in the evolving post of Administrative Assistant.

The voluntary helpers, now regarded as 'on the strength' due to their continuing and invaluable service to the Society and especially to the Library, are again to be thanked most sincerely. To these, whose names have been previously recorded (*5*(2): 33), has to be added Mrs Edna Clifford.

Council also wishes to record its thanks to the staff, both present and recently departed for their whole-hearted help with the mundane matters of running the Society for its Fellowship, and for their extra work associated with the bicentenary. They additionally recognize the efforts of Fellows, Editors, members of Committees including, of course, all aforementioned by name or by implication.

His Late Majesty Hirohito and the Japanese Royal Family

On the occasion of the death in January 1989 of the late Emperor, a formal letter of condolence was sent by the President on behalf of the Society. His late Majesty had been an Honorary Member for 67 years and, since the Second World War, had remained in contact with the Society, donating copies of his scholarly works to the Library. Professor W. T. Stearn reported to the Society accordingly, as in the Minutes of the General Meeting of 12 January 1989.

Recently the Society has been in touch with both HM Emperor Akihito and his son; the Emperor having donated the three volumes of the second edition of *The Fishes of the Japanese Archipelago*, while Prince Fumihito, taking after his father and grandfather, is at present studying marine biology at Oxford University.

Council had, of course, previously noted with great pleasure that an international prize for Biology had been established in 1985 in celebration of the sixty years of the late Emperor's reign and in recognition of his long time commitment to biological research; and further that its first recipient was Professor E. H. Corner F.L.S., F.R.S.

Donations

National Association of Decorative & Fine Arts Associations	£500
F. R. Goodenough	£600
Anonymous	£50
Mrs Lloyd-Davies	£100
NCCPG, London Branch	£35

Membership

Council is aware of the interest some Fellows take in introducing prospective members to the Society, recommending them and corresponding with the Society most conscientiously. The following statistics show, it believes, the greatest annual increase in the Fellowship if not for all time, certainly for many years and their proposers are to be congratulated. The net membership figures in recent years show a steady if apparently illogical increase (this is due to initial corrections in getting on to the computer). There are now over 2000 elected members. The following are the annual statistics.

Date of election	see *The Linnean*	Fellows	Associates	Student Associates
20 October 1988	*5*(1): 10–11	59	4	5
21 January 1989	*5*(2): 11	27	2	2
16 March 1989	*5*(3): 12	33	—	—
24 May 1989	*5*(3): 12	25	2	—
Total		144	8	7

Reinstatements 1
Withdrawals 4
Removals 45
Deaths reported 20

The deaths of 27 members have been reported

James Austin Bailey, Born: 19 August 1908. Died: 31 August 1988. Elected: 20 November 1980.

Geoffrey Frederick Brown, F.C.M.A. F.C.I.S. Born: 28 July 1909. Died: April 1988. Elected: 19 June 1969.

Oliver Buckle, Born: 24 September 1903. Died: Details unknown. Elected: 22 April 1965.

Raymond Arthur Dart, Born: 4 February 1893. Elected Foreign Member: 24 May 1974. Obituary: *Nature, 337*: 211.

Dr John Hemsworth Day, D.F.C., B.Sc., Ph.D. Died: 6 December 1984. Elected: 24 May 1974.

Dr Ralph Dennell, D.Sc. Born: 29 September 1907. Died: 16 February 1989. Elected: 24 May 1944. Obituary: *Linnean, 5*(3): 35.

Elaine de Sainte Cr. Fogg, B.Sc. Died: 29 December 1988, aged 93. Elected: 4 December 1930.

Professor Dr Albert Frey-Wyssling, Died: August 1988. Elected Foreign Member: 24 May 1965.

Dr Isabella Gordon, O.B.E., D.Sc., Ph.D., Died: 11 May 1988. Elected: 22 January 1931.

Michel Hideux, Born: 11 February 1946. Died: November 1988. Elected: 20 November 1975.

Annabel Yvonne Imrie-Swainston, Born: 21 August 1913. Died: 13 December 1989. Elected: 22 April 1965.

Laurence George Knight, Born: 21 April 1909. Died: 14 February 1989. Elected: 12 December 1963.

Professor Irene Manton, B.A., Sc.D., Ph.D., F.R.S. Born: 17 April 1904. Died: 31 May 1988. Elected: 24 May 1947. Obituary: *Linnean*, *5*(1): 74.

Frederick Richard McQuown, M.A. Born: 4 January 1907. Died: 18 March 1989. Elected: 24 May 1957.

Margaret Ursula Mee, Born: 22 May 1909. Died: 30 November 1988. Elected: 16 October 1986. Obituary: *Linnean*, *5*(3): 38.

Dr George Arthur Nelson, M.Sc., Ph.D. Died: 3 March 1989. Elected: 24 May 1930.

Michael Richard Parsons, Born: 24 May 1936. Died: 17 March 1988. Elected: 18 February 1982.

Dr Timothy Charles Plowman, B.A., A.M., Ph.D. Born: 17 November 1944. Died: 7 January 1989. Elected: 4 November 1976.

Alice Gertrude Side, Born: 2 April 1913. Died: 19 September 1988. Elected: 18 April 1963.

Dr Sydney Smith, M.A.., Ph.D., Born 12 April 1911. Died: 21 September 1988. Elected: 24 May 1944. Obituary: *The Independent* 30 September 1988.

Anatol N. Svetovidov. Died: Details unknown. Elected Foreign Member: 24 May 1973.

Dr Alan Richard Tippet, Ph.D. Died: 16 September 1988. Elected: 10 July 1941.

Dr Reginald Edward Vaughan, O.B.E.., D.Sc., Ph.D., Died: 29 April 1987, aged 91. Elected: 8 December 1932. Obituary: *Taxon*, *37*(1).

Dr Henry Vevers, M.B.E., M.A. D.Phil. Born: 13 November 1916. Died: 24 July 1988. Elected: 19 April 1956. Obituaries. *The Times* and *The Telegraph* 27 July 1988. *Linnean*, *5*(3): 40.

William John Webb, B.Sc. Born: 8 April 1901. Died: 3 February 1989. Elected: 16 November 1978. Obituary: *Linnean*, *5*(3): 39.

Charles Brian Wheeler, Born: 17 April 1914. Died: 31 January 1989. Elected: 24 May 1979.

Gerald Wilkinson, Born: 9 February 1926. Died: Details unknown. Elected: 17 May 1977.

Presidential Address

After a break the President gave an address on *How different species can be.*

The motion that the President be thanked for this address and that it be published proposed by Dr J. R. Packham and seconded by Mr T. Pain was carried unanimously.

The President appointed as Vice Presidents for the 1989–90 session:

Dr F. A. Bisby
Dr D. F. Cutler
Mrs P. D. Fry
Professor J. D. Pye.

4. Balance Sheet and Accounts
The Linnean Society of London

Balance Sheet
31 December 1988

31st December 1987 £	ASSETS	£	£
	Investments (as per schedule)		
319,654	(Market Value: 31 December 1988; £664,969)		458,826
	(Market Value: 31 December 1987; £521,990)		
65,460	**Sundry Debtors**		48,936
	Share of Stock held on Joint Publishing Account		
—	(at valuation)		2,503
38,840	**Deposit and Current Account balances**		21,551
423,954			531,816
	Less: Current Liabilities		
20,956	Contributions received for future years	22,179	
80,000	Provision for Repairs and Improvements (Note 1)	77,211	
47,970	Provision for Bicentenary Expenses (Note 2)	21,011	
20,000	Provision for Library Purchases (Note 3)	16,358	
17,892	Sundry creditors and provisions	23,676	
186,818			160,435
237,136			371,381
	Trust Funds		
	Investments (as per schedule)		
58,864	(Market Value: 31 December 1988; £144,124)	50,188	
	(Market Value: 31 December 1987; £151,378)		
28,225	Deposit and Current Account balances	33,727	
87.089			83,915
£324,225			£455,296
	Represented by:—		
	General Funds		
219,481	General Fund (Note 4)	352,252	
17,655	Publications Fund (Note 5)	19,129	
237,136			371,381
	Trust Funds		
87,089	Balance of Funds		83,915
£324,225			£455,296

C. M. Hutt Treasurer
F. H. Brightman
P. S. Rainbow
T. Pain
J. D. R. Fryer
} Audit Committee

Income and Expenditure Account for the Year ended 31 December 1988

1987 £		£
	INCOME	
50,141	Annual contributions received	51,310
1,015	Income tax recoverable on covenanted contributions (year to 5th April 1988)	941
30,780	Dividends and interest	35,381
4,875	Publications—sales of back issues	4,419
920	Donations received	1,137
7,114	Use of rooms	7,597
9,933	Facilities of Premises	10,349
3,537	Miscellaneous receipts	2,570
—	VAT recoverable	3,816
115	Royalties	485
45,785	Publications (Note 8)	36,557
£154,215		£154,562
	EXPENDITURE	
61,579	Salaries and National Insurance	63,022
6,924	Electricity and gas	6,420
7,054	General rates (£8,047 less grant £189)	7,858
4,742	Repairs, renewals and insurance	4,070
6,319	Printing, stationery, postage and telephone	7,446
2,128	Audit and Consultancy Fees	4,945
11,904	Miscellaneous	4,325
3,107	Books and periodicals	3,664
632	Binding, repairs and cleaning books	944
1,116	Cost of cataloguing	2,908
5,803	Newsletter	6,948
—	The List	1,750
—	Roll & Charter Book	1,904
111,308		116,204
13,848	Transfer to Provision for Repairs and Improvements	—
20,000	Transfer to Provision for Library Purchases	—
£145,156		£116,204
£9,059	Excess of Income over Expenditure for the year	£38,358

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

We have audited the Financial Statements on pages 1 to 9 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 1988 and of its results and source and application of funds for the year ended on that date.

4, London Wall Buildings
LONDON EC2M 5NT
4th May 1989

FRASER & RUSSELL
Chartered Accountants

Notes to Accounts—31 December 1988

1987		
£		
Note 1	**Provision for Repairs and Improvements**	£
69,235	Balance at 1 January 1988	80,000
13,848	Transfer from Income and Expenditure Account	--
83,083		80,000
3,083	Expenditure during year	2,789
£80,000	Balance at 31 December 1988	£77,211

Note 2	**Provision for Bicentenary Expenses**	
51,920	Balance at 1 January 1988	47,970
4,432	Transfer from Kimberley Project	--
56,352		47,970
(8,382)	Expenditure during year	26,959
£47,970	Balance at 31 December 1988	£21,011

Note 3	**Provision for Library Purchases**	
	Balance at 1 January 1988	20,000
20,000	Transfer from Income and Expenditure Account	–
20,000		20,000
—	Expenditure during year	3,642
£20,000	Balance at 31 December 1988	£16,358

Note 4	**General Fund**	
9,059	Excess of Income over Expenditure for the year	38,358
525	Composition fees received during the year	150
	Gain on changes of investments during the year	13,889
—	VAT recoveries for prior years	6,211
—	Irene Manton Estate interim distributions*	73,305
—	Other Legacies	858
209,897	Balance at 1 January 1988	219,481
£219,481	Balance at 31 December 1988	£352,252

Note 5	**Publications Fund**	
16,505	Balance at 1 January 1988	17,655
5,564	Transfer from Joint Publishing Account (less due to other Societies £64)	6,256
22,069		23,911
4,414	*Less:* Transfer to Income and Expenditure Account	4,782
£17,655	Balance at 31 December 1988	£19,129

Note 6 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 7 Annual contributions in arrears at 31st December 1988 amounted to £2,120 (31st December 1987: £1,157; 79% of this was paid in 1988).

Note 8	**Publications**	
83,519	Half share of surplus on 1988 Joint Publishing Account—Journals	86,382
4,414	Transfer from Publications Fund	4,782
541	Cambridge University Press & E. J. Brill	(1,307)
88,474		89,857
	Less:	
41,598	Contributions to Joint Publishing Account and distribution cost for Journals—Fellows	50,691
1,091	Editorial expenses	21,609
42,689		53,300
£45,785	Surplus transferred to Income and Expenditure Account	£36,557

Note 9 **Value Added Tax**
The Society registered in 1987 with H.M. Customs and Excise for the purposes of Value Added Tax but the effective date of registration was backdated to 1985. Input tax recoverable in respect of the current year has been shown as income whereas input tax recovered retrospectively in respect of the three years prior to 1988 has been shown as VAT recoveries in the General Fund (Note 4).

*These legacy distributions are subject to a condition that some part shall be used to provide a Botany prize.

Joint Publishing Account with Harcourt Brace Jovanovich Ltd.
Income and Expenditure Account for the Publishing Year ended 31 December 1988

1987 £		£	£
	Sales—		
304,981	Journals (including Linnean Society contributions)		332,240
22,661	Books		17,156
£327,642			£349,396
8,317	Stock at 1st January 1988		—
	Production Costs—		
137,944	Journal		159,477
3,073	Books		9,522
149,334			168,999
—	*Less:* Stock at 31st December		5,006
£149,334			£163,993
	Gross Profit for year—		
89,154	Harcourt Brace Jovanovich Ltd.		92,702
	Linnean Society—		
83,519	Journals	86,382	
5,635	Books: Publications Fund	6,320	
89,154			*92,702*
£178,308			£185,404

Special Accounts (Trust and Reserve Funds) for the year ended 31 December 1988

	Deposit and current accounts balances at 1 January, 1988	Income		Grants awards transfers and sundry expenses	Expenditure		Deposit and current account balances 31 December, 1988	Investments at book value
		Dividends interest and income tax recovered	Royalties or other receipts		Purchase of investments	Administration contribution		
	£	£	£	£	£	£	£	£
Jill Smythies Award	3,262	121	—	135	—	17	3,231	—
P. Appleyard Bequest	6,312	2,068	—	1,500	72	194	6,614	8,114
The H. H. Bloomer Award Trust	829	402	—	213	15	36	967	1,149
Bonhote Fund	2,256	1,066	605	2,190	60	106	1,571	6,709
Goodenough Fund	374	251	500	240	588	25	272	2,461
Hooker Lecture Fund	1,142	302	—	—	—	27	1,417	983
Minchin Fellowship Fund	—	38	—	38**	—	—	—	120
Denis Stanfield Memorial Fund	644	370	—	—	6	35	973	3,127
Trail—Crisp Award Fund	120	113	—	—	—	11	222	336
Westwood Fund	79	166	—	—	9	16	220	864
Jane Jackson Bequest	—	1,949	—	1,949**	—	—	—	4,088
Omer—Cooper Fund	1,966	1,738	—	1,160	331	165	2,048	12,455
Flora Europaea Fund	11,241	2,038	22,246*	18,706	276	351	16,192	9,782
	£28,225	£10,622	£23,351	£26,131	£1,357	£983	£33,727	£50,188

**Income transferred to General Account.

* 4,246 Royalties
18,000 Sale of Investments

£22,246

Schedule of Investments 31 December 1988

Nominal		**General account**	Book Value £
£12,333.19		Treasury 3% Stock 1990	11,135
£21,343.19		Treasury 3% Stock 1991	17,184
£45,695.00		Treasury 3% Stock 1992	39,026
£20,000.00		5% Funding Stock 1987/91	19,164
£24,500.00		6% Funding Stock 1993	21,683
£10,000.00		Treasury 9% Stock 1994	7,272
58,000	Units	Allied Dunbar UT European Growth Trust	15,196
3,000	Shares	Allied Lyons Plc 25p Ordinary Shares	2,817
£5,916.00		Barclays Bank Plc Ordinary Stock	10,217
4,250	Shares	B.A.T. Industries Plc 25p Ordinary Shares	3,963
3,250	Shares	Beecham Group Plc 25p Ordinary Shares	14,888
8,000	Shares	Boots Co. Plc 25p Ordinary Shares	10,475
5,400	Shares	BTR Plc 25p Ordinary Shares	15,188
32	Warrants	BTR Plc for Ordinary Shares	18
4,000	Shares	Cable & Wireless 50p Ordinary Shares	13,030
12,000	Shares	Cadbury Schweppes Plc 25p Ordinary Shares	9,240
3,990	Shares	Commercial Union Assuranced Co.	12,934
3,000	Shares	Glaxo Holdings Plc 50p Ordinary Shares	2,032
1,250	Units	GUS "A" Ordinary Stock	7,700
15,100	Shares	Hanson Trust Plc 25p Ordinary Shares	18,920
28,000	Units	Henderson UT Management European Income Trust	14,476
710	Shares	Hillsdown Holdings Plc 10p Ordinary Shares	1,917
1,840	Shares	ICI Plc £1 Ordinary Shares	14,562
5,730	Shares	Inchcape 25p Ordinary Shares	12,062
3,861	Shares	Land Securities Plc £1 Ordinary Shares	5,694
1,800	Shares	Marks & Spencer Plc 25p Ordinary Shares	3,105
540	Shares	National Westminister Bank Plc £1 Ordinary Shares	2,954
5,250	Shares	Northern Foods Plc 25p Ordinary Shares	3,880
£ 460		P & O Plc 5% Cumulative Deferred Stock	2,659
30	Warrants	P & O Plc for Deferred Stock	46
£11,000.00		Scottish Mortgage & Trust Plc 8–14% Stepped Deb.	11,083
6,870	Shares	Shell Transport & Trading Co. Plc 25p Ordinary	8,330
10,730	Units	The Equities Investment Fund for Charities	16,711
4,745	Shares	Unilever Plc 5p Ordinary Shares	16,543
			336,104
		National Savings Bank—Investment Account	92,722
			£458,826

(Market Value 31 December 1988 £664,969)

Nominal		**Trust funds**	Book Value £
		The Equities Investment Fund for Charities:	
5,891	Units	P. Appleyard Bequest	7,267
1,180	,,	The H. H. Bloomer Award Trust	971
1,855	,,	Bonhote Fund	2,941
935	,,	Goodenough Fund	2,461
843	,,	Hooker Lecture Fund	983
126	,,	Minchin Fellowship Fund	120
1,108	,,	Denis Stanfield Memorial Fund	3,058
371	,,	Trail-Crisp Award Fund	336
522	,,	Westwood Fund	759
6,496	,,	Jane Jackson Bequest	4,088
4,435	,,	Omer-Cooper Fund	8,589
2,433	,,	Flora Europaea Fund	6,555
		Treasury 9% Stock 1994	
£4,165.58		Bonhote Fund	3,063
			41,191
		National Savings Bank—Investment Account	8,997
			£50,188

(Market Value 31 December 1988 £144,124)

Source and Application of Funds Statement for the year ended 31 December 1988

	General Funds		Trust Funds	
	1988	*1987*	*1988*	*1987*
Source of Funds	£	£	£	£
Excess of Income over Expenditure for the year	38,358	9,059	—	—
Add: Provision for Repairs and Improvements	—	13,848	—	—
Provision for Bicentenary Expenses	—	—	—	—
Provision for Library Purchases	—	20,000	—	—
	38,358	42,907	—	—
Other Sources of Income				
Composition fees received	150	525	—	—
Investments sale proceeds	25,007	—	18,000	19,014
Legacies	74,163	—	—	—
Transfer from Kimberley Project	—	4,432	—	—
VAT recoveries for prior years	6,211	—	—	—
Decrease in Debtors	16,524	—	—	—
Transfer to/(from) Publications Fund	1,474	1,150	—	—
Decrease in Share of Stocks Held	—	4,158	—	—
Increase in Sundry Creditors	5,784	—	—	—
Increase on Contributions received for future years	1,223	—	—	—
	168,894	53,172	18,000	19,014
Application of Funds				
Additions to Investments	150,290	36,791	1,357	15,915
Repairs and Improvements Expenditure	2,789	3,083	—	—
Bicentenary Expenditure	26,959	8,382	—	—
Library Expenditure	3,642	—	—	—
Increase in Share of Stocks held	2,503	—	—	—
Decrease in Sundry Creditors	—	1,492	—	—
Decrease in Contributions received for future years	—	292	—	—
Increase in Debtors	—	9,862	—	—
Trust Funds Excess of Expenditure over Income	—	—	11,141	15,650
	186,183	59,902	12,498	31,565
Movement in Cash Deposit and Current Account balances	(17,289)	(6,730)	5,502	(12,551)
Balances at 1 January	38,840	45,570	28,225	40,776
Balances at 31 December	£21,551	£38,840	£33,727	£28,225

OBITUARY

John Campbell Gardiner (1905–1989)

With the death of John Campbell Gardiner on 4 September 1989, British natural history has lost an amateur who brought his professional business skills to the service of its institutions and at the same time a professionalism to his amateur pursuits through which he made a lasting contribution to scientific knowledge.

Jack, as he was always known, was born in India in 1905. He was educated at Wellington College and went on to be articled as a chartered accountant. After qualifying in 1928 he soon became a partner in Jenks, Percival, Pidgeon & Co., where he remained (with secondment to the Ministry of Food during the war) until 1959, when Sir Charles Clore persuaded him to become chief executive director of Sears Holdings Limited, with which group he had been closely associated in a professional capacity for some years previously. He retired from this position in 1971.

Jack joined the Botanical Society of the British Isles in 1949 and was an early volunteer to their Distribution Maps Scheme when it started in 1954. From this contact his profession became known and, when in 1957 the BSBI was faced with the difficult task of finding a new treasurer, John Dony, who was Honorary Secretary at the time, decided to approach him, although at that time he was not known to any member of their Council. Thankfully he accepted and quickly became a leading figure in its financial and scientific affairs.

During his 14 years as Honorary Treasurer, Mr Gardiner always seemed to be able to find time for the Society's business when it was needed, rarely missing a Council or committee meeting. One felt at times that the British Shoe Corporation, Mappin & Webb, Selfridges and the rest stood still for an hour or so to allow the BSBI to take a great leap forward. He was a driving force in the battle to save Upper Teesdale master-minding the Appeal for a fighting-fund which set out in 1965 with a target of £5000 but actually raised £25 000.

Many committee meetings were held in his offices in Wigmore Street. As early arrivals assembled the drinks cupboard opened and the business was conducted in the best of spirits. If the meetings finished promptly and there was time before the next train left for wherever, members were spirited away by taxi to Lancaster Gate for more refreshment and sandwiches which his ever-hospitable wife, Wendy, would produce even if she had only just returned from an engagement with her violin (she was a gifted musician). The *longueur* of the last train to Cambridge was greatly eased by their joint kindnesses.

During his professional life Jack always took his Sundays off devoting them to botanical field work whatever the weather, whatever the season. During the Maps Scheme he undertook to help in Surrey. This led to his co-option to the Surrey Flora Committee chaired by J. E. (Ted) Lousley in 1962. He undertook to cover a number of 2 × 2 km squares (tetrads) in that county, but he still found time to help John Dony with six tetrads in Hertfordshire. Wherever he went his methods were nearly always the same: he took a train from London to the nearest station and walked. It is ironic that a man who in business was closely connected with the motor industry never drove and, though taken in company cars or taxis everywhere during the week, never took a taxi on Sundays. He was always accompanied by his 'blue book' (though its covers were actually black)

which contained field identification notes on which he based the records he sent in with the meticulous accuracy of the trained accountant.

With field work on the vascular plants of Hertfordshire and Surrey complete, he looked for further occupation for his Sunday excursions, especially for the winter. Retaining his affection for Surrey he turned his attention from higher to lower plants and took up bryophytes and soon became a member of the Council of the British Bryological Society. It is astonishing that, under the tuition of that doyen of Surrey bryologists, E. C. Wallace, he not only soon became a very proficient bryologist himself but on retirement undertook to compile a Bryophyte Flora of Surrey which was published in the *Journal of Bryology* in 1981. For this achievement alone his receipt of the Bloomer Award at the Anniversary Meeting last May would have been justified, but it should also be seen as an appreciation of the whole contribution which Jack made to natural history over 40 years. A contribution made with modesty and unfailing good humour: the laughter in his life was never far from the surface.

FRANKLYN PERRING (with acknowledgement to a Profile of Mr Gardiner by John G. Dony, A.L.S. which appeared in *BSBI News*, *2*, 1973)

Library

Once more the summer has been used for reshelving of journals and another section of Western European journals have now been arranged on a country basis. We still have U.K., German and French journals to reshelve and some of these titles will be in temporary locations so may take slightly longer to find as we may have to search in more than one place. Advance notice of your requirements will help in avoiding keeping you waiting as the searching can be done before you arrive. The same applies to journals originating in countries other than Western Europe as many of these are housed in the other side of the courtyard, under the Geological Society, and it can take a little time to go over to find them. If your visit is going to be short, a telephone call beforehand can save you time.

Readers are reminded that it is not always possible to gain access to all items when the Rooms are in use for all day meetings: check your Programme to avoid these days. Outside users are usually scheduled to have their use of the Library confined to first thing in the morning and late afternoon so as to leave the rest of the day free for normal use.

Donations

A list of specific donations received since the beginning of April 1989 are given below. We are always grateful to Fellows who send us copies of reprints of recent publications and also to R. Fitter, Dr B. O. Gardiner and Prof. G. P. A. Pontecorvo for continuing to pass on to us copies of journals we would not otherwise receive.

The Author	Benl, G., *The pteridophytes of Bioko (Fernando Po)*, pt. IV. (from Acta Bot. Barcelona, No. 38). 69 pp. Barcelona, 1988.
The Author	Bourke, D. O.'D., *French-English horticultural dictionary* (2nd Ed.). 240 pp. CAB International, Wallingford, 1989.
F. H. Brightman	Estes, Richard & Pregill, Gregory, *Phylogenetic relationships of lizard families, essays commemorating Charles L. Camp*. 631 pp. illustr. Stanford University Press, Stanford, 1988.
	Zabala, M. & Malaguer, P., *Illustrated keys for the classification of Mediterranean Bryozoa. (Treballs, Mus. de Zoologie, No. 4)* 294 pp. illustr. Museu de Zoologie, Barcelona, 1988.
British Museum (Natural History)	British Museum (Natural History), Zoology, *Common insect pests of stored food*, by Laurence Mound. 68 pp. illustr. British Museum (Natural History), London, 1989.
Dr H. M. Burdet	Aeschimann, David & Burdet, Herve M., *Flore de la Suisse... le nouveau Binz*. 597 pp. Griffon ed. Neuchatel, 1989.
Dr M. J. Burgis	Davies, B. & Gasse, F., *African wetlands and shallow water bodies, bibliography*. 502 pp. maps. ORSTOM, Paris, 1988.
Dr J. H. Crothers & Field Studies Council	Field Studies Council. *The OUP Project Guide, fieldwork and statistics for ecological projects*. 108 pp. illustr. Field Studies Council, Dorchester, 1989.
F. Dobson	Forsythe, Trevor, G., *Common ground beetles*. (Naturalists' Handbook No. 8), 74 pp. illustr. some col. Richmond Publishing, Richmond, 1987.
	Hayward, Peter I., *Animals on Seaweed*. (Naturalists' Handbook No. 9), 108 pp. illustr. some col. Richmond Publishing, Richmond, 1988.
	Majerus, M. & Kearns, P., *Ladybirds*. (Naturalists' Handbook No. 10), 103 pp. illustr. some col. Richmond Publishing, Slough, 1989.
R. Fitter	[*Animals and plants of Israel*] in Hebrew, 140 pp. col. illustr. n.d.
J. B. Gillett	Blundell, Michael, *Collins guide to the wild flowers of East Africa*. 464 pp. col. illustr. maps. Collins, London, 1987.
The author	Haslam, S. M., *River plants: the macrophytic vegetation of watercourses*. 398 pp. illustr. Cambridge University Press, Cambridge, 1978.
The author	Hill, D. S., *Catalogue of the crop pests of Ethiopia*. (Bulletin No. 1) 105 pp. Alemaya University of Agriculture, Boston, 1989.
Dr. D. S. Hill	Hill, D. S. & Walker, J. M., *Pests and diseases of tropical crops*. Vol. 2, Field handbook, 432 pp. illustr. maps. Longmans, Harlow, 1988.

Hunt Institute	Pittsburgh, Carnegie Mellon University, Hunt Institute, *Catalogue of the botanical art collections at the Hunt Institute.* Part 3, plant portraits, Artists H. compiled by James J. White. 565 pp. Hunt Institute, Pittsburgh, 1988.
G. Ll. Lucas	IUCN. Gland.
	Stiff, Ruth L. A., *Flowers from the Royal Gardens of Kew.* (Catalogue of an exhibition). 79 pp. illustr. some col. University Presses of New England, Hanover, N.H. 1988.
R. M. Nesbitt	Baytop, Asuman, *Instanbul Universitesi Eczacilik Fakultesi Herbaryumundaki Turkiye Bitkileri.* 2 vols: I, 199 pp. II, 88 pp. Istanbul, 1 1984, 2 1988.
	Karamanoglu, Kamil, *Turkiye Bitkileri,* I Pteridophyta, Gymnospermae, Dicotyledonae. 1277 pp. Ankara University, Ankara, 1974.
E. M. Nicholson	Albright, Horace M., *Conservators of hope, the Horace Albright conservation lectures.* 568 pp. University of Idaho Press, Moscow, Idaho, 1988.
Nuffield Chelsea Cirriculum Trust	Nuffield Chelsea Curriculum Trust, Monger, Grace & Sangster, Mary, *Systematics and classification.* 96 pp. illustr. some col. Longmans, Harlow, 1988.
Dr. F. M. Perring	Perring, Franklyn & Walters, Max, *The Macmillan field-guide to British wildflowers.* 226 pp. illustr. some col. Macmillan, London, 1989.
The author	Pilleri, George (Ed.), *Contributions to the paleontology of some tethyan Cetacea and Sirenia* (Mammalia). 123 pp. illustr. Brain Anatomy Institute, Ostermundigen, 1989.
	Pilleri, G. (Ed.), *Beiträge zur Paleontologie der Cetaceen Perus.* 233 pp. illustr. 1 col. pl., Brain Anatomy Institute, Ostermundigen, 1989.
The author	Quine, David A., *St Kilda portraits.* 281 pp. illustr. maps, privately, Ambleside, 1988.
Royal Botanic Gardens Kew	[Jackson, B. D.] *Kew Index for 1988,* by R. A. Davies and K. M. Lloyd. 198 pp. Clarendon Press, Oxford, 1989.
Dr. B. S. Schubert	Veracruz, Inst. Nat. Investigaciones Rec. Bot., *Flora de Veracruz,* fasc. 53, Dioscoreaceae. 46 pp. illustr. maps, Veracruz, 1987.
B. E. Symthies	Blanco, Alberto Gomis., *Ignacio Bolivary las ciencias naturales en España.* 205 pp. Conc. Sup. Invest. Cienc. Madrid, 1988.
Wang Meitong	Wang Meitong, *English—Chinese dictionary of ecology.* 449 pp. 1986.
The publishers	Brown, Janet, *The art and architecture of English gardens.* 320 pp. illustr. some col. Weidenfeld and Nicolson, London, 1989.
The publishers	Leapman, M., *The book of London.* 320 pp. illustr. Weidenfeld and Nicolson, London, 1989.

Accessions

Accessions from May to the end of August 1989 include:

Abbott, R. Tucker & Boss, Kenneth, J., *A classification of the living mollusca.* 195 pp. American Malacologists Inc. Melbourne, Fla. 1989.

Appel, Toby A., *The Cuvier—Geoffroy debate: French biology in the decades before Darwin.* 305 pp. illustr. Oxford University Press, New York, 1987.

Askew, Richard, R., *The dragonflies of Europe.* 291 pp. illustr. some col. maps. Harley Books, Colchester, 1988.

Auckland, DSIR., *Fauna of New Zealand* No. 14. Annotated catalogue and key to the families of Lepidoptera, by J. S. Dugdale. 216 pp. illustr. map. DSIR, Wellington, 1988.

Auckland, DSIR. *Fauna of New Zealand* No. 15. Ambositrinae (Insecta: Hymenoptera, Diapriidae) by I. D. Naumann, 165 pp. illustr. maps. DSIR Wellington, 1988.

Bean, W. J., *Supplement to the Trees and Shrubs of Britain*, 8th ed. revised. 616 pp. J. Murray, London, 1988.

British Library Science Reference & Information Service, *Acid rain and the environment 1984–1988, a select bibliography*, by Lesley Grayson, 240 pp. British Library, London, 1988.

CANBERRA, Bureau of Flora and Fauna, *Flora of Australia*, Vol. 4 Phytolaccaceae to Chenopodiaceae. 354 pp. illustr. Australian Government Printing Service, Canberra, 1984.

CANBERRA, Bureau of Flora and Fauna, *Zoological catalogue of Australia*, Vol. 4: Coleoptera. 444 pp. Australian Government Printing Service, Canberra, 1987.

Chazal, Malcy de, *The medicinal plants of Mauritius.* 125 pp. col. illustr. (Privately) Schoolhouse Gallery, Abbey St. Bothans, 1989.

Darwin, Charles, *Beagle diary*, edited by Richard Darwin Keynes. 464 pp. illustr. maps. Cambridge University Press, Cambridge, 1988.

Davis, Peter Hadland, *Flora of Turkey*, Vol. 10, Supplement. 590 pp. University Press, Edinburgh, 1988.

Davis, Wade, *The serpent and the rainbow.* 297 pp. Collins, London, 1986.

Denslow, Julie Sloan & Padoch, Christine, *People of the tropical rain forest.* 231 pp. illustr. some col. maps. University of California Press, Berkeley, 1988.

Dor, Menahem, *CLOFRES, Checklist of the fishes of the Red Sea.* 437 pp. 1 col. pl. Israel Academy of Sciences & Humanities, Jerusalem, 1984.

Findlay, W. P. K., *Fungi, folklore, fiction and fact.* 112 pp. illustr. Richmond Publishing, Richmond, 1982.

Gale, Barry G., *Evolution without evidence, Charles Darwin and the origin of species.* 238 pp. University of New Mexico Press, Albuquerque, 1982.

Ghosh, P. K. & Prakash, I. (Eds), *Ecophysiology of desert vertebrates.* 475 pp. illustr. Scientific Publishers, Jodhpur, 1988.

Giddy, Cynthia, *Cycads of South Africa*, 2nd revised edition. 112 pp. illustr. some col. maps. C. Struik, Cape Town, 1986.

Gunn, Mary & Codd, L. E., *Botanical exploration of Southern Africa.* 400 pp. illustr. maps. Balkema (for the Botanical Research Institute) Cape Town, 1981.

Hastdorf, Christine & Virginia Popper, *Current paleoethnobotany: analytical methods and cultural interpretations of archaeological plant remains.* 236 pp. illustr. University of Chicago Press, Chicago, 1988.

Johnsgard, Paul A., *The quails, partridges and francolins of the world.* 264 pp. illustr. some col. maps. Oxford University Press, Oxford, 1988.

Johnsgard, Paul A., *North American Owls.* 295 pp. illustr. some col. maps, Smithsonian Institution Press, Washington & London, 1988.

Kastner, Joseph, *The bird illustrated 1550–1900.* 127 p. illustr. some col. Abrams, New York, 1988.

Knight, David, *Ordering the world, a history of classifying man.* 215 pp. Burnett Books, London, 1981.

Kricher, John C., *A neotropical companion, an introduction to the animals, plants and ecosystems of the new world tropics.* 436 pp. illustr. Princeton University Press, Princeton, 1989.

Low, Susanne M., *An index and guide to Audubon's Birds of America.* 255 pp. illustr. American Museum of Natural History, Abbeville Press, New York, 1988.

Mayr, Ernst., *Towards a new philosophy of biology, observations of an evolutionist.* 564 pp. Belknap Press of Harvard University Press, Cambridge, Mass. 1988.

Mill, Susan W., (and others), *Indexed bibliography on the flowering plants of Hawaii.* (B. P. Bishop Museum Special Publication No. 32). 214 pp. University of Hawaii Press, Honolulu, 1988.

Nelson, Joseph, N., *Fishes of the world.* 2nd ed. 523 pp. illustr. Wiley, New York, 1984.

Noakes, Vivien (Ed)., *Edward Lear, selected letters.* 325 pp. illustr. Clarendon Press, Oxford, 1988.

Ohba, Hideaki & Malla, Samai (Eds.), *The Himalayan Plants*, Vol. 1. 386 pp. illustr. some col. University of Tokyo Press, Tokyo, 1988.

Oxford University Exploration Society, *Oxford University expedition to Sumatra.* unpaged. Oxford, 1986.

Pratt, H. Douglas, *A field guide to the birds of Hawaii and the tropical Pacific.* 409 pp. 45 col. pl. Princeton University Press, Princeton, 1987.

Schnell, R., *La flore et la végétation de l'Amérique tropicale.* 2 vols. 480 pp. & 448 pp. illustr. Masson, Paris, 1987.

Smith, Margaret M. & Heemstra Phillip C. (Eds), *Smithy's sea fishes of South Africa.* 2nd ed. 1147 pp. illustr. some col. Springer-Verlag, Berlin, 1986.

Stainton, A., *Flowers of the Himalaya*, supplement. 86 pp. col. illustr. Oxford University Press, Delhi, 1988.

Watling, Dick, *Birds of Fiji, Tonga and Samoa*, 176 pp. illustr. some col. maps. Millwood Press, Wellington, 1982.

Weiss, Randolf Fritz, *Herbal medicine* (translated from the 6th German edition of Lehrbuch der Phytotherapie, by A. R. Meuss). 362 pp. illustr. Beaconsfield Publishers, Beaconsfield, 1988.

FORTHCOMING PAPERS IN THE JOURNALS

Biological Journal

DICKMAN, M. C., ANNETT, C. and BARLOW, G. W., Unsuspected cryptic polymorphism in the polychromatic Midas cichlid