THE LINNEAN

Newsletter and Proceedings of
THE LINNEAN SOCIETY OF LONDON
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THE LINNEAN SOCIETY OF LONDON

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Newsletter and Proceedings
of the Linnean Society of London

Edited by B. G. Gardiner

Editorial

This issue contains the Presidential Address delivered to the Anniversary Meeting of 2002, and concerns the first Honorary Fellow of the Linnean Society, Sir Joseph Banks, who at that point in time was the most influential man of Science in Britain. Thus, for example, supported* and encouraged by George III, he turned the royal gardens at Kew into a scientific institution.

Kew began with two private royal gardens and expanded through the work of our most distinguished garden designers, including Charles Bridgeman, "Capability" Brown and William Neufield. However, the seminal vision which brought about the development of Kew was undoubtedly that of Sir Joseph Banks. It was his guidance from 1773 until his death in 1820 which laid the foundation for what today has become one of our leading scientific and educational institutions. Banks' vision of an expanding British Empire, sending back natural history specimens from all over the world, soon turned Kew into a centre for the global transfer of plants through its links with the colonies, particularly through the auspices of the East India Company. However, Banks' initial interest in the flora and fauna of the world had been developed as a consequence of his earlier voyage on the *Endeavour* with Captain James Cook, Daniel Solander and Sydney Parkinson, some five years earlier.

When the *Endeavour* was about to set sail from Plymouth in 1768 the news was delivered to Joseph Banks, who was enjoying a night at the opera with his favourite lady friend, Miss Harriet Blosset of Hammersmith. Banks thought Harriet "possessed extraordinary beauty" and was "the fairest amongst flowers" and was smitten with her charms (she also had a personal fortune of ten thousand pounds!). The morning after their visit to the opera Harriet learned that her escort had not only departed for Plymouth, but that he was eventually bound for the most distant parts of the earth. Rumour had it that Banks had left an engagement ring with her guardian so that he might claim her on his return. Be that as it may, when the *Endeavour* in fact reached one of those most distant parts, the Island of Tahiti, where they were going to observe the transit of Venus, Banks forgot all about Miss Blosset and began making advances to a particularly beautiful native girl. According to one of the crew, Banks with his fine clothes and bearing was able to pick and choose from the whole female population of the island, and after the construction of the fort, frequently entertained native women in his tent "where his desires were readily fired by the Tahitian maidens". As Cook noted "the women were very kind to us, very liberal with their favours".

The *Endeavour* then set sail for the Society Islands. Whilst there Banks described how the women danced, their hair plaited with gardenias which he thought "truly elegant". He also noted that they all wore low-cut dresses and had bare arms with a bunch of flowers on each shoulder and with pleated skirts down to the ground. Significantly, he described how they managed these skirts "with as much dexterity as our opera dancers could have done". Their dancing was both exciting and provocative. As they were sailing

*He used his own monies to lay out and develop Kew. The King's contribution was nil.

Officer bartering with a Maori. Painted by Joseph Banks.
(By permission of the British Library, Ms 166)

southwards, Banks used his time writing up his log, in which he gives a detailed account of "Manners and Customs of South Sea Islands", which comprised some 25,000 words describing their native culture. This, when taken together with Cook's detailed account in his log, represents one of the most valuable studies in anthropology, describing the native culture now permanently destroyed by the western world.

Later, when they reached New Zealand, they met up with a completely different Maori culture. Banks found the Maori women very plain after the exotic girls of the Society Islands. He did, however, concede that the war dance performed by the male Maoris was "an amusement which never failed to please every spectator" especially when performed aboard their canoes with sometimes a hundred men beating the side of the boat in unison.

After New Zealand the *Endeavour* eventually reached Australia where the aboriginal culture was quite disparate and unlike that of either the Maoris or the Tahitians. The skin of the aborigines was of dark chocolate colour, their hair in the case of males cropped short, often naturally curly and they sported short black beards and had their noses pierced by a piece of bone 3–4″ in length. Their bodies they painted with a white pigment. The women wore shell necklaces, bracelets and had hair tightly wound around their upper arms. Like their men folk they were as naked as the day they were born.

Both sexes used harpoons when fishing and Banks observed the presence of boomerangs but did not know their utility. The men used throwing sticks approximately 3′ long to hurl darts made of bone with which they could hit animals at 40–50 yards distant.

They also made canoes, flimsy boats and hollowed out logs in which they hunted for shell fish, considered a delicacy. Banks surmised that the Australian aborigine had little in common with either the Maoris or Tahitians. Today we believe that the Australian aborigines originated (that is if you believe centres of origin are knowable) in south-eastern Asia and reached Australia via New Guinea.

Eventually the *Endeavour* passed through the straits of Dover on July 13, 1771, bringing back to Britain a hold filled with natural history specimens (which included 3,600 species of plant of which 1,400 were new to science, bottles and jars of pickled animals and portfolios of drawings of both plants and animals) and bearing charts of faraway lands – destined to become part of the British Empire on which the sun never sets. The voyage had been one of the greatest journeys of discovery ever undertaken.

I am pleased that the length of the Correspondence section in this issue is indicative of a lively interest in the contents of *The Linnean*. It includes additional information on Paxton, the subject of the April Picture Quiz, and further contributions to the discussion of science and religion. In the next issue there will be another article on this subject by Professor Berry.

BRIAN GARDINER

AUGHTON, P. 2002. *Endeavour: the Story of Captain Cook's First Great Epic Voyage.* Cassell & Co, London.

Society News

In the Queen's Birthday Honours in June, Fellows gaining awards included Alan Gray, David Pearman, Joyce Stewart and John Topp. David Pearman added an MBE to the HH Bloomer Award he received at the Anniversary Meeting in May. Additionally, Peregrine Simon has recently received a knighthood.

Members will be encouraged to note that Lord May of Oxford FLS, President of the Royal Society (RS), has gone on record to say that taxonomy "is not just stamp collecting. Whether you're talking about answering basic problems in evolution or practical questions on climate change, you can't begin unless you know what's there." (*Science* 2003, **301**, p.153, 11th July). The article in which Lord May's quotation occurs is headed *Royal Society: Taxonomists Endangered* and notes the disappearance of systematic biology and taxonomy from UK universities and the less-than-satisfactory funding position of the NHM and Kew Gardens. The response of this Society to the comments of HM Government to the House of Lords' report *What on Earth?* (July 2003 issue of *The Linnean*) forcefully made both these points and a number of others. The article also mentioned the suggestion of both their Lordships and HMG that the G(lobal)

B(iodiversity) I(nformation) F(acility) should develop an online database of worldwide biodiversity, but this Society has pointed out that 80% of the funding of such a huge project would need to be provided locally. The RS suggests first a pilot project at a major systematics institution.

Dr. Josef Greimler, Secretary-General, IBC 2005, wishes to announce the availability of the First Circular for the **XVII International Botanical Congress** to be held 18 to 23 July 2005 in Vienna, Austria (nomenclature sessions 13 to 16 July). This circular, pre-registration form and additional general information are available on the Congress website *http://www.ibc2005.ac.at/* The pre-registration form can be returned electronically. Specific details or clarification can be obtained from the Secretary-General at *office@ibc2005.ac.at*

The Society received the following message in July: "As you may know, there is a Global Alliance to Eliminate Lymphatic Filariasis, (*http://www. filariasis.org/*), whose formation was catalysed by "the biggest single act of corporate philanthropy in any industry" – the donation by GlaxoSmithKline of free albendazole to the programme for as long as it is needed. The Alliance is composed of the ministries of health of the endemic countries, the World Health Organization, GlaxoSmithKline, Merck Inc., the Lymphatic Filariasis Support Centre at the Liverpool School of Tropical Medicine and tens of other academic and research institutes and Non-Governmental Development Organizations.

Education and training will play a key role in the success of such an elimination programme, and therefore the Liverpool Lymphatic Filariasis Support Centre has developed filariasis.net, (*http://www.filariasis.net*), which provides global, free and open access to the knowledge base on this disease. As part of this education project we would seek permission from you to make the following manuscripts:

> The metamorphosis of filaria sanguinis hominis in the mosquito. Patrick Mason, MD, Hong Kong 1884 2nd Ser. Zoology Vol. II. Part 10. 366-389.

available for free download from the filariasis.net web site as PDFs, which will help ensure the maintenance of critical programmatic information to resource poor countries (the article may also be made available via CD-ROM versions of the website for organizations/individuals who have no access to the internet, or where internet access is unreliable/expensive)." The Society's reply was as follows:

"I am sure that the Society would be proud and delighted with the inclusion in your valuable programme of a paper from one of our Journals which is nearly 120 years old. The citation is not nearly correct, I have to say; here is the corrected version:

Patrick Manson (1884). The metamorphosis of *Filaria sanguinis hominis* in the Mosquito. *Transactions of the Linnean Society of London, 2 Series Zoology* Volume 2 367 - 388.

As it happens it is Part 10, Paper Number 13. In those days indexing did not seem a strong point. Manson was, of course, the famous parasitologist; he was an M.D. and he was based in Hong Kong at that time."

The Tercentenary Wedgwood Medallion

As part of the preparations to celebrate the birth of Linnaeus in 1707, Council, some while ago, decided to initiate various projects that would highlight the man and his work in as many ways as was thought appropriate. As part of this programme the production of various high quality souvenirs was investigated. The first such product is the Wedgwood Medallion.

Just in time for the Anniversary Meeting we received the stock of the Linnaeus protrait Medallion. A brisk sale occurred after the close of the meeting! However, there was no room to show the beauty of this item in the July Linnean and so we apologise for this delay in making it available to those Fellows unable to attend the meeting.

This is a limited edition of 500 produced especially for the Society by the Wedgwood Company.

It is recorded that the English sculptor John Flaxman presented a bill, for two shillings, on behalf of his father, in January 1775 for, "moulding and making a cast from a medall of Lennaeus. Manding wax mdela and making a mould from it". This new medallion is a direct descendant of that original casting! To add to the story of this fine product is the interesting fact that the wax medal referred to in the bill is probably identical to that hanging in the Library. This original wax portrait was modelled by Inlander in 1773.

Fellows may purchase one medallion for the very special price of £55 including VAT. This is, of course, half the price that similar Wedgwood medallions are available for commercially! If at the end of 2007 there are any remaining copies of the Medallion in stock then Fellows will be allowed to purchase a second copy, before the rest are sold off commercially. As all good sales documents say, don't delay in order that you are not disappointed. There will only be 500 produced!

Manson was never a Fellow of the Society; his papers were put forward for publication by Dr. T. Spencer Cobbold FLS, who published *The Life History of Filaria bancrofti* in the *Journal of the Linnean Society* 1879 Volume XIV. 356-370 and who died in 1886. Not only was the indexing of the Society's Journals confusing around this time – so were the titles! This seems to be a result of seeking to separate botany and zoology in the Journals; it was a few years before the pattern of today was established. What would our predecessors have made of recent discoveries that some animal parasites contain plant genes?

Symposium to mark the bicentenary of the birth of George Bentham

Around forty delegates and speakers attended a joint meeting of the Linnean Society of London, the Society for the History of Natural History and the Royal Botanic Gardens,

Kew, held at the Linnean Society of London on Saturday 23 September 2000. Dr Peter Stevens and Dr John Marsden organized the symposium, and the Royal Society provided a grant which contributed towards the travel and subsistence costs of the speakers.

Dr Peter Stevens, the keynote speaker, brought together an international and diverse team of contributors for the symposium. On the occasion papers were presented by Dr Stevens, Prof. Ann B. Shteir, Prof. Arthur M. Lucas, Dr Richard Bellon, Dr Gordon McOuat and Dr David E. Allen. A promised contribution from the late Professor William T. Stearn about Bentham's diary and its bibliographic implications was not delivered because he was unable, due to a fall, to be present.

It was originally proposed that the symposium would be published in a special supplement to *The Linnean*. However, this proved impossible, and the Society for the History of Natural History took responsibility for publication of the papers. The six contributions are published in volume 30 part 2 of *Archives of Natural History*, and this issue can be purchased by Fellows at a reduced price directly from the Society for the History of Natural History. The titles of the six papers, as published, are:

P.F. Stevens: George Bentham (1800–1884): the life of a botanist's botanist.
G. McOuat: The logical systematist: George Bentham and his *Outline of a new system of logic.*
D.E. Allen: George Bentham's *Handbook of the British flora*: from controversy to cult.
A.B. Shteir: Bentham for "beginners and amateurs" and ladies: *Handbook of the British flora.*
A.M. Lucas: Assistance at a distance: George Bentham, Ferdinand von Mueller and the

Announcement

I am grateful to the Editor for permission to tell other Fellows that I have found many of you to be original thinkers with a touch of the eccentric, and am seeking just such people in an effort to meet a 21st century need: a Movement of Elders, healthy creative individuals in their sixties, seventies and eighties who have no outlet: maybe they are retired, or isolated, or women now free from domestic responsibilities; people who would like to start a new chapter in life, doing their own thing, in pleasant surroundings which provide privacy for working but also stimulating company when required. The Movement will consist of co-operative settlements in the UK, each run by a group of Elders, employing domestic staff who need stable, flexible live-in employment (single parents, mobile disabled, and so on) with older people around who have seen life. The aim will also be for each settlement creatively to contribute to the locality in which it is situated.

I am now seeking interested Elders. For further details please e-mail me at avril.fox@btopenworld.com, or send £1 for snailmail to: A. Fox FLS, 26 Pound Lane, Aylsham, Norfolk NR11 6DR.

production of *Flora australiensis.*

R. Bellon: "The great question in agitation": George Bentham and the origin of species.

Because editing revealed the unexpectedly complicated publication history of Bentham's "best-seller", there is an additional paper included in *Archives of Natural History*: E.C. Nelson, D.E. Allen, P.H. Oswald & M. Walpole: George Bentham's *Handbook of the British flora* (1858–1954) and associated works: a check-list of editions and issues.

In addition to the Bentham symposium issue, the Society for the History of Natural History is offering Fellows the opportunity to obtain the issue of *Archives of Natural History* (volume **29** part 2) that contains papers in tribute to the late Professor William T. Stearn. William Stearn was one of the Founder Members of the Society, established in 1936 as the Society for the Bibliography of Natural History. He was made an Honorary Member in 1976, and was among the first recipients of its Founders' Medal in 1986. *Archives of Natural History* volume **29** part 2 contains an appreciation by Professor Vernon Heywood, and a fully indexed bibliography of William Stearn which augments, up-dates and corrects the bibliography published in the *Biological Journal of the Linnean Society* volume **8** (1976) and the supplement published in the *Botanical Journal of the Linnean Society* volume **109** (1992).

Fellows may purchase these two issues of *Archives of Natural History* direct from the Society for the History of Natural History for £15 (postage included).

The Society's Schools' Programme

The Society's commitment to pre-university education is undiminished, but over the past few years audiences for the sixth-form lecture programme dwindled to virtually nothing. It was particularly sad that state school participation was limited. The Society has therefore looked a little beyond the confines of Britain and for the past two years has sponsored, with the Royal Irish Academy, successful programmes in Dublin. The last, on Halloween 2002, attracted some 400 students and other members of the public to hear about forensic science. The next event, planned for October 2003, will cover ethical problems in the new biology.

Meantime the Society has joined in sponsoring the International Biology Olympiad, which was held recently in Minsk, Belarus. The format of these events takes the form of "gruelling series of tests of knowledge and stamina" in school biology, including practical examinations, for the selection of the national team, which whittled 1400 UK students down to four international contestants. In Minsk, these four, pitted against some 160 contestants from 43 countries, won a silver medal and three bronze medals. It was noteworthy again that few of those competing within the UK were from the state sector.

JOHN MARSDEN

2 Million needed for CARLS Project (Computer Access to the Records of the Linnean Society)

Elsewhere in this Newsletter is the notice announcing the launch of the Wedgwood Medallion as part of the celebrations to mark the Tercentenary of Linnaeus' birth in 1707. However, the primary decision of Council was to make all the major Linnaean collections and the Smith Herbarium available on-line for the Tercentenary. The CARLS Project, as it is to be called, is the next logical step as the collections are cleaned and conserved, a process now well under way for the Smith Herbarium and the Linnaean Correspondence. The Society will need to raise £2 million to ensure that appropriate databases can be created and all the images captured digitally in order to fulfil this target. Council has agreed that the time is now right to begin the hard task of fund-raising. There are to be two prongs to this task. At this early stage it is important that we build up our membership numbers. Council does not expect to double the membership numbers by everyone recruiting one new Fellow, but it should be possible to recruit many hundreds of new members by looking around at your colleagues and seeing who should be a Fellow and then making sure they join us. Please do not leave this task to someone else, do please actively recruit on the Society's behalf. An information leaflet and membership form is available from the Executive Officer to help in this task.

Secondly, a small fund-raising team has begun to prepare the detailed costings for all the work that needs to be done, whilst on the other hand they are preparing the list of suitable charities and funding agencies that will need to be approached. If you have any personal contacts that you would be willing to approach on the Society's behalf please contact the Executive Secretary. Work has also begun on preparing the documentation necessary to seek support from the Heritage Lottery Fund.

GREN LUCAS

Linnean Society Library printed collections development policy

The Library reflects the aims of the Society as stated in the first Charter as being "... the cultivation of the science of Natural History in all its branches...". The CORE COLLECTION consists of books on taxonomy and systematics, the flora and fauna of the Palaearctic, books on evolution, evolutionary theory and on history of biology and Linnaean studies, together with some necessary biological and reference literature. These guidelines are based on the fact that in taxonomy and the distribution of plants, fungi and animals, it is necessary to retain older materials because they provide earlier names which, under the International Codes of nomenclature, take precedence over later names all other things being equal. Older texts may also give useful evidence of former distributions, essential to understanding how populations change, and essential to the formulation of sound conservation policy. There is therefore the need to maintain past holdings and special collections.

The Society's coverage has always been seen as complementing that of the Libraries in the Natural History Museum and the Royal Botanic Gardens, Kew, but we endeavour to provide easy access and Fellows may borrow from the majority of the holdings.

Fellows are welcome to recommend works for purchase by the Library and a list of titles for consideration or to fill gaps in holdings is maintained. The Library does acquire antiquarian and costly works from time to time when these are appropriate to its holdings and after consultation with the Chairman of the Library Committee, a subject expert and the Treasurer. A special fund exists to support their purchase.

The headings below are numbered according to priority.

1. LINNEAN WORKS: and those on the history and principles of taxonomy, including all monographs know to have been cited by Linnaeus, both as originals and facsimile.
2. FLORA AND FAUNA: Handbooks, monographs and revisions, especially those on the flora and fauna of Britain, Western Europe and the Palearctic, in that order of priority together with faunas and floras of other parts of the world on their merits. Treatises dealing with major world zones should be acquired where these are standard and important works (e.g. *Flora Malesiana*). This also includes natural history in general, especially regional accounts.
3. BIOGEOGRAPHY: works on the origins and distribution of the fauna and flora of Britain, Europe and the Palearctic as above, including some palaeontological works.
4. EVOLUTION and subsequent evolutionary controversy.
5. ECOLOGY and CONSERVATION judged by the same criteria as recommended above for faunas and floras.
6. ECONOMIC BOTANY AND ZOOLOGY (including medicinal plants) if major regional accounts (e.g. Burkhill's *Dictionary of the Economic Products of the Malay peninsula*) or important general books (e.g. Uphof's *Dictionary of Economic Plants).*
7. TRAVELS, voyages and expeditions where they are historically and scientifically important works and where they contain real advances to our knowledge of biogeography, ecology or similar disciplines.
8. ANATOMICAL WORKS bearing on the systematics of animals or plants.
9. BIOGRAPHIES of biologists and others of relevance, especially Fellows of the Society, and their published works.
10. WORKS ON THE ART OF NATURAL HISTORY should be judged by their quality and relevance to the Society's needs.
11. BIBLIOGRAPHY AND REFERENCE WORKS should be judged by their quality and relevance to the Society's needs.
12. HISTORICAL WORKS AND SEMINAL WORKS relevant to any of the above will be judged according to their quality and the Society's needs.

In some subject areas of peripheral interest, works are only acquired when they form essential complements to existing collections;

11. ANIMAL BEHAVIOUR and psychology (ethology) only where they are major contributions to the subject;

12. ETHNOGRAPHY where there is strong botanical or zoological significance.

The Linnean Society Library does NOT hold material in the subject areas listed below, in some cases because of availability of resources in other specialist Libraries. This applies to journal holdings as well as books.

A. Specialist monographs on Entomology;
B. Molecular biology;
C. Medical sciences other than those with taxonomic links such as parasitology and medicinal plant and animal products;
D. General guides for birdwatchers and popular field guides;
E. Biology textbooks (although some "classic" series are held as are some recently published donations which help us keep up to date with developments);
F. Climate change and broader environmental issues;
G. Specialist palaeontological works;
H. Specialist agriculture and forestry works (although present holdings reflect the lack of any conveniently accessible library with such subject areas);
I. Specialist horticultural works, including those on garden history, garden plants and landscape design.

Library

As this is being written, the summer students are in the final stages of cleaning the Library and restoring it to its usual layout. The past 6 weeks have seen most of the books on the Piccadilly side taken off the shelves, sorted and re-shelved and this side now has most of the books on ecology and evolution, genetics and general biology, with the beginning of the general zoology holdings. We are now attempting to bring together most of the remaining unsorted books in broad subject groupings which, even if not in the correct order, will enable readers to browse a subject area such as conchology or forestry. The team this year included Axel and Eric Anfält from Sweden, Antonio Alonso and Teresa Gil from Spain, Daisy Debelle and Fabian Douglas from France, Heather Bailey, Sarah Brooks, Max Douglas, Karen Druery, and Michelle Woodger from the UK.

The Library and Collections Committee met in early May and considered the recommendations of the working group concerning the collection development policy for both printed materials and manuscripts. It was suggested that these be circulated to the Fellowship, for information and comment, in *The Linnean*. The guidelines for printed collections are included in this issue (see previous page). Please let us have your feedback as these are not definitive but here to help guide us as to what we should focus on.

GINA DOUGLAS

Donations

The following donations have been received by the Library during the period from the end of April to the end of August 2003. They exclude a number of books received from Professor Chaloner as potential book sale items but which turned out to have some

useful “gap-fillers” among them.

P. Barnard	Davis, William E. & Jackson Jerome A. Eds., *Contributions to the history of North American ornithology Vol. II.* 401 pp., illustr., Nuttall Ornithological Club *(Memoirs, Vol. 13),* Cambridge, Mass., 2000. Drury, Stephen, *Stepping stones, the making of our home world.* 409 pp., illustr., map, Oxford, OUP, 2001 (ISBN 019069582). Grierson, Janet, *Temperance, therapy and trilobites, Dr Ralph Grindrod,Victorian pioneer.* 160 pp., illustr., map, Malvern, Cora Weaver, 2001 (ISBN 1873809425). Rappole, John H. (& others), *Birds of the Southwest: Arizona, New Mexico, Southern California & Southern Nevada.* 329 pp. illustr.some col., maps, College Station, Texas A & M, 2000 (ISBN 089096582). Wiley James J., *Bibliography of ornithology in the West Indies.* 817 pp., illustr., map, Camarillo CA., Western Foundatiion for Vertebrate Zoology (*Proceedings, Vol. 7),* 2000.
ETI, Univ. Amsterdam	van Couwelaar, Matthijs, (compiler), *Zooplankton and micronekton of the North Sea*. CD-ROM, World Biodiversity Database series, Amsterdam, ETI, 2003 (ISBN 90-75000-56-1).
Food & Agriculture Org.	Food & Agriculture Organisation, *FAO Conservation Guides*, 2 CD’s with English, French and Spanish versions. Rome, FAO, 2003 (ISBN 92-5-004907-2).
Cinzio Gibin & Gina Duse	Olivi, Guiseppe, *Zoologia Adriatica* (reprint with preface by Cinzio Gibin), ilustr., map, Padova, T. & G. Edizione, 1995.
Hunt Inst. for Bot. Doc.	Bridson, Gavin D.R., White, James J. and Bruno, Lugene B., *American Botanical prints of two centuries.* (Catalogue of an exhibition…) 239 pp, illustr., some col., Pittsburgh, Hunt Inst. for Botanical Documentation, 2003 (ISBN 0-913196-75-4).
Marja Koistinen	Hämet-Ahti, Leena (& others), *Retkeilykasvio* (Flora of Finland), 656 pp., illustr., maps, Helsinki, Luonnontieteellinen keskusmuseo, Kasvimuseo, 1998 (ISBN 951-45-8167-9).
Kungl. Skytteanska Samfundet	Linnaeus, Carl, *Iter Lapponicum, Lappländska resan 1732. I Dagboken* (transcribed by Algot Hellbom, Sigurd Fries and Roger Jacobsson), 199 pp., illustr., col. frontisp., Umeå, Kungl. kytteanska Samfundet, 2003 (ISBN 91 86438 22 0).
Lausanne, Musée et Jardin Bot.	Magnin-Gonze, Joëlle (and others), *Le nom des plants en deux mots.* 28 pp., illustr., Lausanne, Musée et Jardin Botanique Cantonal, 2003.

Sir Christopher Lever	Lever, Christopher, *Naturalized reptiles and amphibians of the world.* 318 pp., maps, Oxford, OUP, 2003 (ISBN 0 19 850771 2).
Prof. G.Ll. Lucas	Dürer, Albrecht, *Nature's artist, plants and animals* (introductory essay by Victoria Salley), 96 pp. illustr. some col., Munich, Prestel, 2003 (ISBN 3-7913-2867-0).
Dr T.J. Malthus	Malthus Tim J. & Mumby, Peter J. eds., *Remote sensing of the coastal marine environment.* (special issue of *Int. J. Remote Sensing*, 24:13, July 2003), pp. 2585-2815, illustr., some col., maps, figs. (ISSN 0143-1161(2003) 24:13;1-T).
Dr J. Marsden	Mollan, Charles, Davis, William & Finucane, Brendan, Eds., *Irish innovators in science and technology.* 256 pp., illustr., Dublin, Royal Irish Academy, 2002 (ISBN 1-874045-88-7). Ridley, Matt, *Nature via Nurture. Genes, experience and what makes us human.* 328 pp., London, Fourth Estate, 2003 (ISBN 1-84115-745-7).
Dr Derek Mills	Mills, Derek, Ed., *Salmon at the edge.* 307 pp., illustr., maps, Oxford, Blackwell Science, 2003 (ISBN 0-632-06457-9).
Natural History Museum,London	Lincoln, Roger & Rainbow, Phil, *Specimens, the spirit of Zoology,* 64 pp., col. illustr., London, Natural History Museum, 2003 (ISBN 0-565-09178-6).
Dr E.C.Nelson	Boewe, Charles, Ed., *Profiles of Rafinesque.* 411 pp., illustr., col. frontisp., Knoxville, Univ. Tennessee Press, 2003 (ISBN 1-57233-225-5).
M.Pilar de San Pio	Rojas, Simon de & Rubio, Clemente, *Viaje a Andalucia, historia natural del reino de Granada (1804-1809)* (edited and transcribed by Antonin Gil Albarracin), 1247 pp., illustr., some col., maps, Barcelona, Ingoprint, 2002 (ISBN 84-88538-17-0).
Nicola Shulman	Shulman, Nicola, *A rage for rock gardening, the story of Reginald Farrer…*, 120 pp., col. illustr., London, Short Books, (ISBN 1-904095-47-X).
Dr A.B. Smith	Smith, A.B. & Wright, C.W., *British cretaceous echinoids, Part 7, Atelostomata, 1. Holasteroidea, Monograph of the Paleontographical Society,* pp. 440-568, pl.139-183, 2003 (Publication No. 619, part of Vol. 156, 2002).
R.I. Vane-Wright	Vane-Wright R.I. & de Jong, R., *The butterflies of Sulawesi, an annotated check list.* 267 pp., col. illustr., maps, Leiden (*Zool. Verhandelingen*, 343, July 2003).
Prof. R. Watling	Watling, Roy & Ward, Stephen, *Fungi naturally Scottish.*35 pp., col. illustr., Perth, Scottish Natural Heritage, 2003

Correspondence

7, rue de l'Avenir
34820 Teyran, France

30 April 2003

Dear Professor Gardiner

Receiving THE LINNEAN of April, I have the pleasure to see my letter of November published, in an English language improved by the correction of some Frenchy sentences.

In one place only, the correction makes problem! In the second paragraph, quoting Bellarmine opinion, the printed text says "Bellarmine was writing that *even if there is no real proof* of such thing, *we have to*". The italic part of this sentence says exactly the opposite of what I had written "Bellarmine was writing that, *if there should be a real proof of such thing, we should have to*" ("Such thing" is the revolving round the sun.)

Sincerely yours
R. LAVOCAT

John.a.burton@lineone.net

29 April 2003

Dear Brian

I read with interest the letter from Rene Lavocat in the recent issue of the *The Linnean*. Being neither a philosopher, nor a scientist, I have always failed entirely to understand how Christianity and science can possibly be compatible. My understanding of Christian belief has always been that faith and prayer are an essential part of all orthodox Christian beliefs. Prayer obviously implies belief in an interventionist deity, which if it is effective must also imply that scientific research results can be falsified. Science is based on observation and experiment, which should be repeatable; the tenets of Christianity (along with most other religions) are demonstrably neither.

In my simplistic view this means that if Christians pray for a swallow to return next year, and that prayer is answered by the compassionate deity, then all the quantitative data that research scientists are gathering about such cases in order to improve knowledge of migration will be skewed. And if I am collecting data on declining endangered species, I could always have a quick pray, and reverse the reasons for decline..... .

Since most (or all?) Christian tenets are neither credible nor verifiable, and in fact the gospel accounts are often in disagreement with each other, how can this be squared with the concept that science is based on observable and repeatable data?

I can accept a theist point of view can exist in a scientist, but Christianity, as it is generally accepted and preached by the majority of orthodox Christians is surely quite incompatible with science and rationality?

Surely the fundamental question is: "Do scientists who profess Christian beliefs pray, and if so why?" A fair number of Linnean Fellows have been, and presumably

there still are, Reverends, so they must have an answer.

Best wishes
JOHN BURTON

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10 April 2003

2 Hollow Lane
Hayling Island PO11 9AA

Dear Brian,

Rene Lavocat (*The Linnean*, **19(2):** 19-21) argues convincingly for his own position on science and faith, but pithy he ain't.

That honour goes to the Brigidine Reverend Mother interviewing me for a job teaching A-level Biology. Knowing that some Roman Catholic Orders do not care for a non-Catholic teaching theory of evolution, I asked how she felt about it. She looked quizzical, but shot back 'But, Mrs. Steentoft, you are not going to be teaching the evolution of soul'. I have never quarrelled with that statement, one creationists might think about too.

Part of the evolution-creation problem is that assumptions about science abound, one of them being that science denies the existence of what it does not concern itself with. Another is that science 'knows what is', 'how things are'. It doesn't, and doesn't claim to. Science provides 'as if' explanations of observed phenomena - theories - and if the supporting evidence is found inadequate, then the theory may respectably be rejected. Einstein replaces Newton.

The evolution-creation problem in education is rooted in the nineteenth century. It occurs in educational systems where the purposes of education are ill-defined, stuffed with hidden or at least half-hidden assumptions and handed on to pupils, teachers and parents, to get on with as best they may. Scientists have undoubtedly been too little involved with compulsory education, and now we are reaping what others have sown. We shall have to go on thinking about that one.

Yours sincerely
MARGARET STEENTOFT

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11 April 2003

roncairs@eclipse.co.uk

Dear Brian

I am sure that I will not be the first, but I could point out that whilst Thomas Bell may well have had chelonians at the 'Wakes' – they could not have been the specimens that were the subjects of the figures in his *Monograph of the Testudinata* (1836–42) – the date would not match !

No doubt you had in mind the quotations I had used from Bell's letters to J.D.C. Sowerby (*The Linnean* 12(4) 1996) but these letters were written in the 1820–30's and

in London – their postmarks include: Ludgate Hill, Fish St. Hill, Broad Street & Bishopsgate. I suspect that the reference to pond and garden would be those at the Zoological Society rather than anything at his home in New Broad Street.

My apologies – but as you mention, Bell did not think of moving to Selborne until 1844, prior to that he had thought of buying a property in Hornsey, or from his friendship with Richard Owen possibly moving out to Richmond or Kew.

RON CLEEVELY

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20 Farmlands Avenue,
Polegate, East Sussex BN26 5LL

25 April 2003

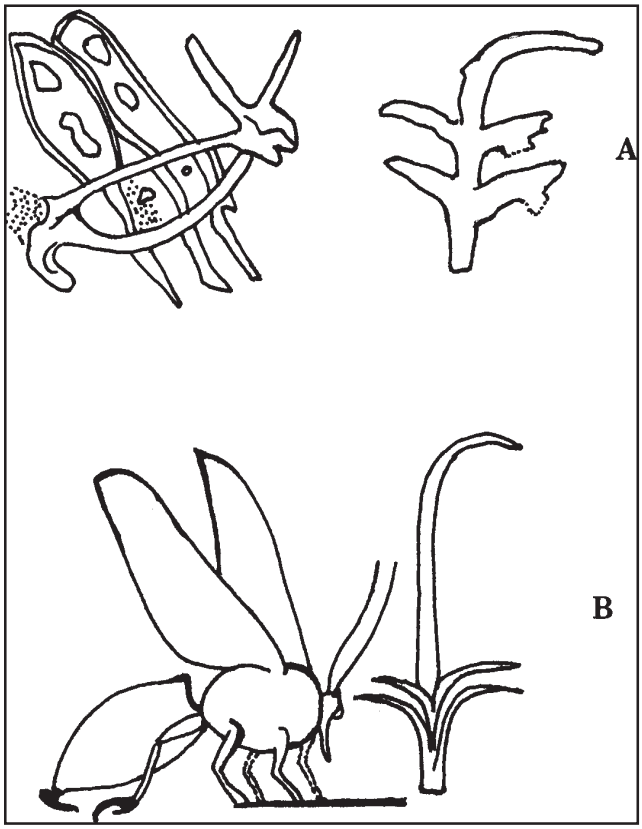
Dear Brian,

M.J. Dawson's article "Ecce Ascalaphid" (*The Linnean*, **19** (2):44-46) poses not just a problem of entomological identification but challenges a long held interpretation of ancient Egyptian royal titles.

Although I accept that the identification of the depicted insect as a bee is questionable, I am not at all sure that it is an ascalaphid, mainly because the abdomen is always shown as bulbous rather than elongate, but I am not an entomologist and stand to be corrected. However, in my experience (dealing with identifying images of freshwater fishes), the ancient Egyptians prove to be the most accurate and keen observers and draftsmen of animals and plants. As far as I am aware only four insects appear in tomb, temple and artefact carvings and paintings – at least in the form of hieroglyphs – namely; the dung beetle *(Scarabacus)*, a dipteran fly (indeterminate genus), a locust *(Acrydium)* and the 'bee'.

In its hieroglyphic form the 'bee' appears in one of its earliest representations as a carving (in the nsw-bit title; see below) on a first dynasty (2900 BCE) oil jar ivory label of King Semerkhet (Spencer, 1993; copied here as Fig. A). Here there are undoubted markings on the wings which certainly correspond to those of an ascalaphid rather than a bee and likewise the antennae are elongate and widely divergent. So too the abdomen is shown as elongate with a marked downwardly curved extension (?ovipositor or sting). In its classical, ie. Middle Kingdom form the 'bee' is depicted as figured in Dawson's article and even better in an ink inscription from the tomb of Senenmut at Deir el Bahri (ca. 1470 BCE), illustrated by Peck & Ross (1978) and copied here as Fig. B. Here the insect is shown with wings extended upward and with long antennae but with an obvious abdominal appendage and an extended posterior leg; clearly in this drawing the four anterior legs are shown in perspective.

As a hieroglyph the 'bee' was always accompanied by the scirpus-reed or sedge and formed the compound word *nswt* (sedge) + *bity* (bee). This was the so-called prenomen, one of the Pharaoh's titles and reads 'he who belongs to the sedge and the bee' (ie, Upper Egypt and Lower Egypt, the 'two lands'). The word *bit* also occurs as an ideograph for 'honey' and this has been the principal reason why the glyph has been interpreted as



a bee. However, both Gardiner (1966) and Rice (1990) have commented on the somewhat obscure connection of the bee with Lower Egypt, Rice in particular noting that it is not particularly characteristic of the Egyptian countryside. For the Egyptians honey was an important product and was used in the embalming process, as the principal ingredient of ointments and as a binder for painting on wood as well as a sweetener for many dishes. Beeswax was used in the 'lost wax' method of statue casting. It therefore seems unlikely that such a familiar insect would not have been correctly depicted.

Dawson makes the point that ascalaphids may be less common in Egypt today than they once were due to changed environ-ment. However, the 'bee' was associated by the ancient Egyptians with Lower and not Upper Egypt. In other words, with the Delta, the surrounding marshes of which were being drained by Egyptian workers as early as the 5th Dynasty!

M.J. Dawson has certainly raised doubts about the identity of the Egyptian 'bee' but etymological evidence indicates association with honey. It may be that as a Pharaohonic glyph its depiction became stylised and the more bee-like elements became suppressed.

Yours sincerely
GORDON HOWES FLS

GARDINER, A. 1966. *Egyptian Grammar.* Oxford University Press, London, pp 73;477.
PECK, W.H. & ROSS, J.G. 1978. *Drawings from Ancient Egypt.* Thames & Hudson, London, p.37.
RICE, M. 1990. *Egypt's Making.* Guild Publishing, London, p.104.
SPENCER, A.J. 1993. *Early Egypt.* British Museum, London, Fig. 46, p.67.

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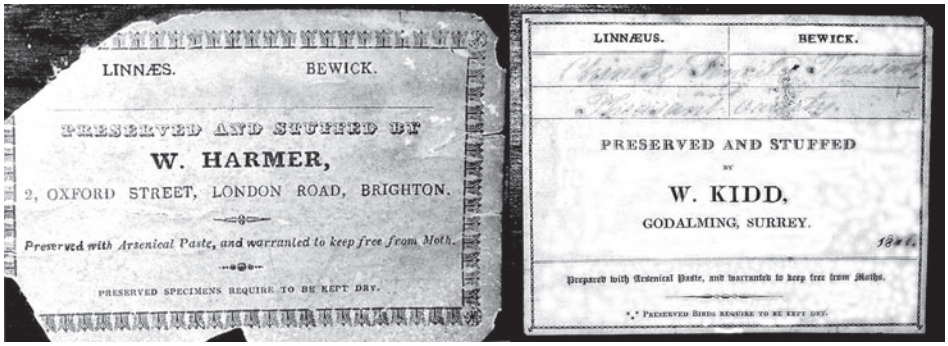
Ascot SL5 7DG

5 May 2003

Dear Brian

Good by association – what's in a name?

Over the years I have photographed a large selection of old taxidermists' trade labels. They are often interesting, showing how nineteenth century taxidermists frequently needed a second (or more!) occupation in order to earn sufficient to survive. Taxidermist and hairdresser is the commonest combination, with picture framing another favourite secondary job. Some repaired boots and shoes, others ground cutlery or made wigs. The most bizarre was a man called Ocock who was 'taxidermist and pastrycook'.



But I have also come across two taxidermists who seemed to think they had some connection with Linnaeus. W. Harmer, 'preserver and stuffer' of Brighton had a trade label which advised customers that preserved specimens require to be kept dry and that his were preserved using arsenic for greater protection against insects. At the top of his trade label, and without explanation, appear the names 'Bewick' and 'Linnaes' (sic). Another taxidermist, W. Kidd of Godalming (Surrey) had a trade label that carried the same messages about preservation by arsenic and the need to keep specimens dry, but then added the names 'Bewick' and 'Linnaeus'. The similarity suggests a link between the two taxidermists, but it is not clear what was the purpose of adding these names to the labels. Was it an attempt to gain credibility by association? If so, was this done by others seeking to bask in minor glory by adding famous names to their advertisements and trade labels?

There was also a taxidermist/museum curator at Carlisle Museum called Linius Hope. I wonder if his name also indicated biological aspirations on the part of his parents when he was christened?

Yours sincerely
P. A. MORRIS FLS

15th May 2003 The Natural History Museum, London

Dear Professor Gardiner,

A Memorial to Ireland's First Woman Botanist

I learned when I was in Bantry last year of the intention of the Hutchins family, with whom I have been in contact over many years, to put up a memorial to Miss Ellen Hutchins in their family burial ground beside the sea in the grounds of the Ardnagashel House, where she had died in 1815. I suggested that it would be right to record this with the Linnean Society with whom she had had some connection. Hence this letter and attachments (below) which have been prepared by Mr Richard Hutchins, who has been the inspirer of the memorial.

We hope that you would feel that this could be considered for inclusion in *The Linnean* in an appropriate form. Mr Hutchins has also sent me various other papers about his relative which I enclose which are probably already available in the Library. I seem to recall from some researches which I undertook many years ago that the Library does indeed have some papers connected with her.

I would happily put you in touch with Mr Hutchins if you required any further information.

Yours sincerely
SIR PETER LESLIE FLS

Memorial to Miss Ellen Hutchins

In 1809, Dawson Turner (1775–1858) from Great Yarmouth, a Fellow of the Linnean Society, wrote to Ellen Hutchins, a young woman in the far South West corner of Ireland asking "for a complete catalogue of all the plants of all kinds that you have found in the neighbourhood for our Linnean Society."

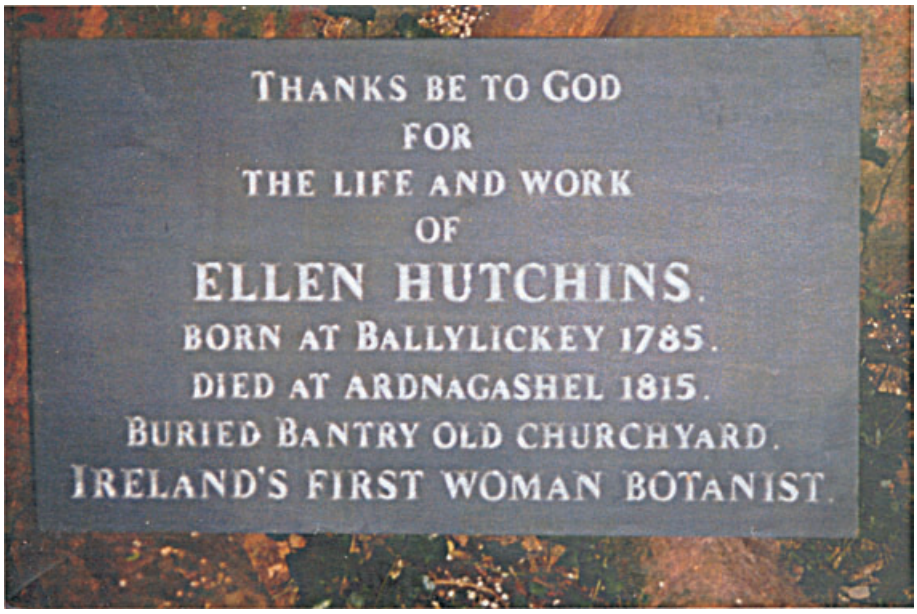
They had been in correspondence for some years, and had exchanged plant specimens. Dawson Turner, a member of a wealthy banking family, had been elected as a Fellow of the Linnean Society at the age of 22 years. He was a keen and skilled botanist, and his wealth enabled him to publish elaborate editions of his own and others' work.

Ellen Hutchins, who lived in Ballylickey, near Bantry, County Cork, suffered from ill health, and had been advised by a family friend, Dr Whitley Stokes of Dublin, himself keen on botany, to take up its study to give her a healthy outdoor activity.

Ellen spent 3 years compiling the plant catalogue, identifying and listing no fewer than 1200 plants. She died a few years later, in 1815, aged 30. She is generally recognised as Ireland's first woman botanist, and has a number of plants named after her including *Hutchinsia alpina* and *Lecania hutchinsiae*.

In 1999, the National Botanical Gardens at Glasnevin, Dublin, re-published Ellen's

list in Occasional Paper No 12 with selected letters and biographical notes edited by Michael Mitchell, Professor of Botany at Galway University. The notes include a mild rebuke on the absence of any memorial stone on Ellen's grave in the old closed churchyard at Bantry. To make amends, a memorial stone was, in September 2002, placed in the Hutchins family burial ground at Ardnagashel, Bantry with the wording as follows:



Close to the Burial Ground is the remnant of the Arboretum planted by Ellen's brother Arthur Hutchins, which now includes some trees which are "Champions of Ireland", such as *Cryptomera japonica* var. *sinensis* and *Podocarpus salignus*.

The location is Irish Ordinance Survey Sheet No 85. The site is in private hands and contact numbers for access are 275074 (Haskard) and 2750166 (Greacen).

June 26th 2003 The Natural History Museum, London

Dear Brian,

Am I right in guessing that the subject of your Picture Quiz (*The Linnean* **19(2)**, (April 2003) p.16) is Sir Joseph Paxton (1801–1865)?

Of course if I am wrong, you need read no further, but if this is a correct guess, then here is a further response that may be of interest, and that you may also feel suitable for publication in *The Linnean*.

Best wishes
BRIAN ROSEN

Sir Joseph Paxton: A Local Hero

Of the clues Brian gave, I particularly liked the phrase "specialised in conservatories" – surely an understatement, since if he had said much more on this aspect of Paxton's life, it would surely have given the game away instantly.

A few hundred metres from the Linnean Society rooms, at the top of Haymarket, you can catch a No.3 London bus bearing the fanciful words 'Crystal Palace' on its destination indicator. Paxton's specialisation in conservatories, initially for the Duke of Devonshire at Chatsworth House, Derbyshire, reached its peak with the Crystal Palace, the Mother of All Conservatories, originally built as the pavilion of the Great Exhibition in Hyde Park, London. Its length was the same value in feet (564 m) as the year of the Exhibition, 1851 (Pevsner, 1960, p.133). Famously first sketched by Paxton as a 'doodle' during a Midland Railway board room meeting (Beaver, 1986, p.16), this is also undoubtedly, for most people, what gives Paxton his place in history, a place that is celebrated well beyond the fields of botany and horticulture. Indeed, a friend remarked to me only last week, that until he had read a newspaper extract from the forthcoming book by Colquhoun (2003) that same week, he had always thought Paxton was an engineer, and not realized his importance as an horticulturalist. In fact, depending on the subject of the book in which you look him up, he is variously an engineer, horticulturalist, Member of Parliament, and both an architect and a "non-architect" (see quotation from Pevsner, below). How wonderfully difficult he has proved to pigeon-hole.

The exhibition pavilion, nicknamed 'the Crystal Palace', by *Punch* magazine (Goode, 1984, p.9), was re-erected and greatly enlarged (with contributions by Brunel and others) in south London, after it had served its use for the Great Exhibition. Unfortunately, it was later destroyed by fire in 1936. Yet this building features in almost every popular book on the history of architecture that I have ever looked at – not bad for a temporary building conceived by a former farm-labourer and gardener's boy, and seventh son of a poor tenant farmer from Bedfordshire (Kamm, 1967). Here is just one sample of numerous similar tributes to the historical importance of Crystal Palace:

> "The Crystal Palace is the mid-nineteenth century touchstone, if one wishes to discover what belongs wholly to the nineteenth century and what points forward into the twentieth. The Crystal Palace was entirely of iron and glass, it was designed by a non-architect, and it was designed for industrial quantity production of its parts." (Pevsner 1968, p.11)

Nobody had previously used Paxton's prefabricated mass-production technique, which made it possible to erect it in just 22 weeks (Goode, 1984, p.9) and also easy to rebuild it elsewhere. Its light and airy structure allowed the entire oak trees enclosed within it to stay alive – a conservatory indeed – but its simple lines rendered it completely at odds with all that the contemporary Gothic Revivalists stood for. Ruskin, Pugin and the rest, not without a little hint of snobbery too, apparently loathed the Crystal Palace, claiming that it demonstrated that "higher beauty was eternally impossible in iron" (Ruskin, in Pevsner 1960, p.133), even though they were happy to attach magnificent canopies built of iron and glass to their many Gothic Revival railway stations (e.g.

famously, St Pancras). Ruskin apparently used a host of derisive phrases for the Crystal Palace (ibid.) though I particularly like "a cucumber frame between two chimneys" (Ruskin, in Beaver, 1986, p.69), as it neatly pays tribute to two heroes at once – Paxton for his horticultural origins, and Brunel for the water towers (ibid., p.92), which he added to the original structure, to provide head for the great fountains of the south London reconstruction.

It is an indirect tribute to Paxton (and to *Punch*) that although the historically correct names of the area in which it was rebuilt, are Upper Norwood and Sydenham Hill, the area is almost universally known now as Crystal Palace. Street names and business names incorporating the name also abound in the district, but I often wonder what non-Londoners make of this as a placename, since there is of course no Palace left to see, it was never strictly a palace, and it was not built of crystal. The well-known local football club with the same name must surely have one of the weirdest names in football (their ground is now a short distance away at Selhurst Park).

Having caught your No.3 bus, you can get out at the terminus on Crystal Palace Parade, and a few minutes' walk will take you to the partly overgrown foundations of the former palace, which as the early impressionist painter Pissarro showed (Reed, 1987), once totally dominated the local streets and views. Close by, at the top of Anerley Hill, is the Crystal Palace Museum dedicated to its history. If you are heading a little further on to the Crystal Palace National Sports Centre, you will probably pass the mighty bust of Paxton himself on a high plinth (Beaver, 1986, p.149), facing the ruins of the palace, and looking not unlike the allegorical head of the colossus "Bavaria", one of the original sculptures in the Crystal Palace (Beaver, 1986, p.98).

Paxton, or rather his heritage, also has strong personal and sentimental associations for me. Since 1972, I have lived in various places in and around the Crystal Palace area. The level site of the original pavilion in Hyde Park has for years been the lunch-time venue for The Natural History Museum's football team, Dinosaur Thursday, and the ruins in Crystal Palace Park make an atmospheric extension to the jogging trail there. Both have helped me to keep fit. Less happily, but miraculously, my middle son escaped with his life and no serious injury, from a crazy accident in which the No.3 bus, taking him to school, careered across the road close to Crystal Palace Parade, crashed into the parapet above the disused Paxton Tunnel portal and then toppled slowly on to the former track base (Goode, 1984, p.37) of the Crystal Palace High Level station over 10 m below, now a residential estate. You can sometimes still visit the derelict vaulted underpass, finely built by Italian bricklayers (Beaver, 1986, p.148), through which passengers once walked from the station to reach the palace itself. Going down the hill a little way from Crystal Palace, at the foot of Gipsy Hill on the Paxton Green Roundabout, you can find the Paxton pub next to the Paxton Green Health Clinic, and also the Paxton primary school nearby, where my two older children went. Some of the timbers from the demolished 19th century original school building, are now part of my garden shed – alas, not a conservatory. Nevertheless, this is my very own, albeit rather tenuous,

connection and tribute to Paxton himself, and his early days on garden buildings.

All this might seem to have little to do with natural history, botany and horticulture. But below the site of the Crystal Palace itself is the rest of Crystal Palace Park, once part of what would now probably be called 'The Crystal Palace Experience', one of the main leisure, entertainment and instructional complexes for the London masses of the time, a theme park in the fullest sense. Here amongst ingenious planting intended to evoke bygone floras, are still to be found the Geological Reconstructions, including the spectacular iguanodons, and other 'prehistoric animals' by Waterhouse Hawkins, for which he was advised by Richard Owen. The Reconstructions (McCarthy & Gilbert, 1994) have other connections with The Natural History Museum too, but this is another story. They have recently been restored – but why stop the restorations there? As our youngest once wrote when he was five, "I wish the glass palace came back". Wren has Greenwich and St. Paul's Cathedral, Brunel has bridges, Pugin the Houses of Parliament, and Waterhouse The Natural History Museum ..... Paxton surely deserves a reconstructed Crystal Palace. After all, as he showed in Hyde Park at the time, it should only take 22 weeks to do it!

BRIAN ROSEN

References

(These are not primary sources, but accounts for general readers, that can be found in bookshops and public libraries. Primary sources are quoted in most of these books.)

COLQUHOUN, Kate, 2003. *A thing in disguise: the visionary life of Joseph Paxton*. 4th Estate [not seen – still in press].

BEAVER, Patrick, 1986. *The Crystal Palace: a portrait of Victorian enterprise*. Phillimore, Chichester, Sussex.

GOODE, C.T., 1984. *To the Crystal Palace*. Forge Books, Bracknell, Berks.

KAMM, Josephine, 1967. *Joseph Paxton and the Crystal Palace: a story biography*. Methuen, London.

McCARTHY, Steve & GILBERT, Mick, 1994. *The Crystal Palace Dinosaurs: the story of the world's first prehistoric sculptures*. The Crystal Palace Foundation, Anerley Hill, London.

PEVSNER, N., 1960. *Pioneers of modern design from William Morris to Walter Gropius*. Penguin Books, Harmondsworth, Middlesex.

PEVSNER, N., 1968. *The sources of modern architecture and design*. Thames & Hudson, London.

REED, N., 1987. *Camille Pissarro at the Crystal Palace*. London Reference Books, London.

Picture Quiz

Philip Pearsall Carpenter

The subject of the quiz in the July issue of *The Linnean*, Philip Pearsall Carpenter (1819–1877), a nonconformist minister, enthusiastic social reformer and educator, bought a large quantity of shells in Liverpool in the early 1850's. This chance event changed the direction of his life and he became an important conchologist on both sides of the Atlantic.

He was the youngest son of Dr Lant Carpenter (1780–1840) a Unitarian minister, and brother of William Benjamin Carpenter (1813–1885) an important physiologist, zoologist

and administrator (see *The Linnean* 16(3): 7–13) and Mary Carpenter (1807–1877) educationalist and social reformer. In the nineteenth century Unitarians formed a significant group in most provincial cities as well as in London and several of their ministers played an important role in the development of provincial scientific societies, serving the local community in civic development, in helping to raise the living standards of the poor and in education. These issues were all of fundamental importance to Unitarians and Carpenter was an exemplar of all of these.

Philip Carpenter was born in Bristol on the 4th November 1819. His early education was in his father's school. By 1833 he had begun making his own shell collection and in the same year spent some time in London working as a trainee optician in his uncle's business. During this period he met J.E.Gray, Keeper of Molluscs and later Keeper of Zoology at the British Museum in London, who helped and encouraged him. Originally the intention was for him to become an optician but instead Carpenter opted for the ministry and trained at York. Carpenter arrived in York in the autumn of 1837 to attend Manchester College. This college gave the equivalent of a university education to those who were excluded from Oxford or Cambridge because of their nonconformity. The curriculum was broad and included science and mathematics. The Principal at York was Charles Wellbeloved (1769–1858), a man of both local and national importance. Under his guidance the college was able to attract a number of scholars to the teaching staff, including John Kendrick (1788–1877) and the naturalist William Hincks (1794–1871), and Philip found "a bond of sympathy in his ardent love of natural history" (see R.L. Carpenter, 1880 p.16). In 1840 the college became affiliated with the University of London which allowed students to graduate with London degrees and Philip graduated First Class, BA in 1841.

He spent his first ministry, from 1841 to 1846, at Stand near Manchester and then moved to Warrington to become minister at the Cairo Street Chapel. It was from here that he carried out many of his social and educational reforms, had his most important ministry within the church and became well-known as a conchologist.

When Philip Carpenter arrived in Warrington in the autumn of 1846 he found a small industrial town with a population of about 19,000, predominantly working class. Initially Carpenter had not been keen to accept the invitation of the Warrington Unitarians because he was not happy with such a label but eventually accepted on condition that he was allowed the "liberty to teach the religion of Christ irrespective of sectarian distinctions" (see R.L.Carpenter, 1880 p. 78).

Warrington had been prominent in the eighteenth century as the home of an important Dissenting Academy (1757–1786). This legacy may have accounted in part for the early development of several scientific societies, including a Botanical Society in 1807 and a Natural History Society established in 1838. In 1848 it was decided that the collections of the latter, then numbering 2,745 specimens, should form the nucleus of a municipal museum. On the 24th May 1848 Warrington Borough Council approved proposals to create a library and museum. These events, happening so soon after Carpenter's arrival in the town, were to have an important influence on the development of his career.

Carpenter soon immersed himself in the life of the town. He believed in total abstinence from drink, worked for improvement in public health and the creation of schools and centres for the unemployed. He became a member and promoter of the Warrington Institution and a teacher of infants. He developed an Industrial School and founded the Oberlin Press, which published some of his own leaflets and scientific works. He joined the Natural History Society and became one of the curators of the Warrington museum, where most of his work on shells was carried out.

As his scientific interests progressed, Carpenter developed contacts in Britain and North America, received help from other naturalists and was given the opportunity to examine the collections and work in the libraries of some of the leading conchologists of his day. In Britain, amongst others, he was in contact with W. Bean (1787–1866), H. Cuming (1791–1865), J.E. Gray (1800–1875), R. Patterson (1802–1872), G.B. Sowerby (1812–1884), C.W. Peach (1800–1886), and C.G.B. Daubeny (1795–1867). On his first trip to North America, as well as visiting many institutions and seeing important collections of molluscs, he met A.A. Gould (1805–1866), Louis Agassiz (1805–1866), J.G. Anthony (1804–1877) and Joseph Henry (1797–1877) and later became a friend of leading Canadian scientists, Sir John William Dawson (1820–1899) and Sir William Edmond Logan (1798–1875).

In October 1865 he emigrated with his wife and adopted son to Montreal and, with the exception of one return visit to Warrington in 1874, lived the rest of his life in that city. He died in Montreal, as the result of typhoid fever, on 24th May 1877.

Carpenter and Molluscan Shells

Carpenter had an interest in shells from an early age. In his early teenage years he had his own collection and helped to arrange the shell cabinets at the Bristol Institution for the British Association meeting in Bristol in 1836. Here he was helped and influenced by Samuel Stutchbury (1798–1859), the curator of the Institution. Although he had been encouraged by both Stutchbury and Gray, he was still a relative novice in conchology when he discovered a large collection of shells for sale in Liverpool. This was part of the so called Reigen collection of Mazatlan shells from the west coast of North America. The collection had already been divided, one portion went to Le Havre and the other to Liverpool. The collection had been accumulated by a Belgian, Frederick Reigen and

was put up for sale following his death. The Liverpool portion alone weighed 14 tons, each ton occupying 40 cubic feet. According to Dance (1986, p.148) Reigen collected shells "with a determination amounting almost to mania" and what Reigen "had intended to do with… [them] …is likely to remain a mystery". Realising the importance of the collection and with the help of Herbert Thomas, his brother-in-law, Carpenter bought the collection for £50. This discovery and purchase changed his life and he was to become one of the leading authorities on early North American conchology. Gray, who had inspired him earlier, persuaded Carpenter to donate the "first set" of Mazatlan shells to the British Museum and to write the catalogue of the collection (*Catalogue of the Reigen Collection of Mazatlan Mollusca in the British Museum, 1857*). This is a major work extending to 552 pages and an edition was published by the Oberlin Press in Warrington. At the same time he prepared, for the British Association for the Advancement of Science, a *Report on the present state of our knowledge with regard to the Mollusca of the West Coast of North America* for the meeting in 1856 (published in 1857). This was followed some years later by a second *Supplementary report on the present state of our knowledge with regard to the Mollusca of the West Coast of North America*, for the same association and published in 1864.

Carpenter made his first visit to North America in 1858. He sailed from Liverpool in S.S. Kangaroo on 8th December with a cargo of boxes containing more than 6,500 shell specimens, the first duplicate set of Reigen's Mazatlan shells, destined for the New York State Museum at Albany. Here he arranged and mounted the collection. Following this, he arranged and catalogued the shells at the Smithsonian Institution in Washington. One of his main objectives was to examine type specimens and he travelled more than 12,000 miles, visiting museums, giving lectures, examining collections (including those of Charles B. Adams and Thomas Bland) and meeting several leading American conchologists. In 1860 the Regents of the State University of New York awarded him the degree of PhD, the first from that university and a mark of his growing reputation. He returned to England in June 1860, resigned from the chapel in Cairo Street and spent much of his time during the next five years in the Warrington Museum working on shells. He studied specimens from the Smithsonian collections as well as writing and publishing scientific papers, catalogues and lists of Pacific coast molluscs and the Reigen shells and built up the Warrington collections. By now, although his other work continued, his scientific work became the dominant part of his life.

Carpenter was very good at distinguishing small or minute molluscan species but as well as taxonomy, he was also interested in the geographical distribution of species and was an early authority on chitons. Many scientific publications followed. In addition to the reports mentioned, his other principal papers appear in the *Proceedings of the Zoological Society of London* and in the publications of the Smithsonian Institution in Washington.

Sets of shells were deposited in the British Museum and at the New York State Museum and several other museums in England, Canada and the United States hold Carpenter and Reigen material. After his death, Carpenter's remaining collection,

Clue: Medic, naturalist and explorer.

containing 4,000 species and varieties, was put up for sale (*Nature* 1877/8, 17, p.313). A large part of this is now in the Redpath Museum, McGill University, Montreal and referred to as the Carpenter collection. In the United States, Carpenter material can be found at the Smithsonian in Washington, the Chicago Natural History Museum, the Academy of Natural Sciences of Philadelphia, Cornell University and the Museum of Comparative Zoology at Harvard University. In her biography, Palmer (1972) described Carpenter as "an outstanding authority among the conchologists of his day by his careful and persevering habits of analysis and comparison".

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References

CARPENTER, R.L., 1880. *Memoirs of the life and work of Philip Pearsall Carpenter chiefly derived from his letters.* Kegan Paul and Co., London.

DANCE, S.P., 1986. *A history of shell collecting*. E.J.Brill, Leiden.

PALMER, K.V.W., 1972. Carpenter, Philip Pearsall. *Dictionary of Canadian Biography (1871-1880),* **10**: 137-138.

Seaside pleasures: Philip Henry Gosse and the bathing-women

In May 1854, Charles Kingsley, while attending a meeting of the Linnean Society in the company of his friend and fellow-naturalist Philip Henry Gosse, met Charles Darwin for the first time and commented that Darwin had '*such a noble face – as the average of the Linneans, I may say*'[1]!

What Gosse felt about the physiognomic attributes of the other Linneans at that time is not recorded – he had been elected an Associate of the Linnean Society in March 1848, after being proposed by his cousin Thomas Bell, FRS, who was also President of the Society, and John Gould – but as a careful observer of the behaviour and natural history of plants and animals, he was far from oblivious to his own species.

From his early forties, much of his work as a biologist took him to the sea shore, and his books and letters are full of references not only to the animals he found but also to the human stories and encounters. At Tenby, in 1853, 'a rather comic scene was enacted' when three 'middle-aged ladies, two of them somewhat heavy in person' were stranded by the rapidly rising tide on St Catherine's Island; 'A crowd of idlers had gathered round, of course, to witness the dénouement, when a lusty bathing woman came to the rescue, leading the horse of her machine to the foot of the steps..... A brief but earnest whisper ensued, and the admiring throng beheld the stout bathing-wench catch up the fat lady, and bear her portly burden through the billows.' Apparently the other two ladies were content to ride the horse ashore where, 'gravely, and with averted eyes, they received the congratulations of the merry spectators, probably painfully conscious of some features in the scene, which I must leave to your imagination, but which appeared greatly to tickle the fancy of the crowd.'[2]

As biologists ourselves, we are probably most familiar with Gosse because of his beautifully detailed and illustrated treatises on the Rotifera and the actiniae and corals of the British shores; in addition, he wrote many books – we would call them 'popular science' today – about the natural history of Canada, Alabama, Jamaica, and of course, the Devon, Dorset and Pembrokeshire coasts. To non-biologists, Gosse is probably most familiar as the rigid Christian, a preacher to the Brethren, the apparently unsociable and stern father of Edmund ('Willie') Gosse's autobiographical *Father and Son*[3]. What few people will have realised, until the publication of Ann Thwaite's excellent biography, *Glimpses of the Wonderful*, is that Gosse was a man with a great love of life, and capable of great humour and tenderness. When I 'researched' (I use the term in the novelist's rather than the scientist's sense) Gosse's letters and documents for the Victorian aspects of my novel *Seaside Pleasures*, I was moved and astonished by the tone of his letters to his wife, Emily, and Willie and theirs to him.

From the start of the 'seaside' days, on the south Devon coast in 1852, when 'the luggage was sent off to the Torquay station and we all (wife, self, and little naturalist in petticoats) followed by easy stages'[4], Gosse seems to delight in sneaking his family and

friends into his books. At Tenby, 'Willie .. intent on making a pool with his wooden spade for the reception of a colony of *Purpurea* … related very gravely his apprehensions of being drowned, when he had to wade through the water, which was actually over the soles of his shoes!'[2]; and in a lane near Weymouth, 'my little boy interrupts me with "Give me some of those shells!" .. I find he means the young shoots of the Male Shield Fern .. curled like the shell of *Trochus magus*, which my little urchin supposed them to be.'[5] 'My wife and myself had been taking a walk …'; or they had all had a trip in the dredger then disembarked so that Gosse could leave 'the ladies in the shadow of a great rock' and investigate some pools; or, of a huge cavern, 'Arthur (Emily's brother) and I determined to explore it, taking with us candle, lucifers and a ball of twine'. And there were picnics where champagne corks popped and after which, on a balmy summer night, glow-worms lit their way as they went back to their lodgings, 'going round by Gumfreston with our kind friends, and picking up little Willie, who had been kindly entertained there.'[2]

Although Gosse was becoming part of the scientific establishment of the time by the mid-1850s (he was an ALS, FRMS, and elected FRS in 1856) and was consequently well-known amongst that extraordinary group which included Huxley, Lyell, Harkness, Darwin and Owen, he initially became known amongst the general public through his 'invention' of the marine aquarium: indeed, it was he who coined the word for this vivarium that contained sea water, in which both algae and animals could survive, grow and even breed, over long periods of time. Soon, there were elegant aquaria in the drawing-rooms of houses all over Britain – in the Gosses' household also, although many of the organisms were held temporarily in whatever containers were to hand. At Gosse's instigation, the Zoological Gardens in Regent's Park set up their own aquarium, which he helped to keep supplied with animals and which became an extremely popular attraction. In this, he was helped by the Rev Charles Kingsley, who had written to him to make his acquaintance at the end of 1853 and who was soon collecting on the shores near Bideford and dredging in Weymouth Bay, for specimens to send up to Gosse in London.

On 29th January 1854, Kingsley wrote from Livermead, 'I must add my thanks to you for giving not *me* only, but Mrs Kingsley and my children, this occupation – we are as busy as bees about the animals all day, and the little ones full of desire to find something worth sending you ... My little boy, 6 years old, found another (pycnogonid) yesterday – a hopeful young naturalist'[6]. And Gosse replied on February 2nd 'Please to express my thanks to your dear little boy for the specimen he has found for me, and for the zeal with which all the family have engaged in the search. … It is a grand gala day for Mrs Gosse as well as myself when we get an opportunity of examining a consignment from the sea; such an array of pans and bowls, of vases and tubs comes out, and the whole house is on the tiptoe of expectation.'[6]

Kingsley's consignments also occasionally caused great merriment – and sometimes supplements to the family diet. The Gosses were disturbed from their evening reading when several cockles, *Cardium tuberculatum*, so leapt and clattered within their metal pan that Gosse was obliged to make notes upon the extensibility and force exerted by

the feet of 'Signor Tuberculato'. But the cockles were then 'eaten to save their lives'[4]! Even sea-anemones had to be tested for their palatability, to check the assertions of the Abbe Dicquemare: *Actinia crassicornis*, cooked by Gosse himself, was served up to his wife and son, but although Emily could not swallow the morsel, Willie 'declared that " 'Tinny was good!" and asked for more.[5] (Later, George Lewes and George Eliot were to make the same culinary experiment[7]; they spent several days at Ilfracombe, on the recommendation of T.H. Huxley who had spent his honeymoon there, and Lewes performed experiments on various actiniae, some of the results of which were entitled *Seaside Studies*[8] presumably in snide contrast to Gosse's *Sea-side Pleasures*[9], which was also written about the marine and other life of the Ilfracombe area).

In *Tenby*, in 1856, an advertisement appears asking for help with Gosse's next project, a cataloguing of the sea-anemones and corals of the British coast, a series which would finally be published in book form as *Actinologia Britannica*[10]. Emily had died, tragically and horribly from breast cancer, in February 1857, and Willie now helped his father with the sorting of specimens that arrived in the post and in collecting new ones. From all over Britain, amateur collectors sent their parcels and notes: *Actinologia* is a treasure-chest of snippets of information about these people, two of whom, Miss Anne B. Church and D. Robertson, I 'borrowed' and fictionalised in my novel. Anne Church, in real life, found an unusual anemone in Loch Long, and sent drawings and description to Gosse, who named it *Stomphia churchiae* in her honour, quoting her own words in *Actinologia*. I was thrilled to discover recently that the Dresden glass-blowers, the Blaschkes (who made the glass flowers held at Harvard, and the exquisite marine organisms – several based on Gosse's own drawings – that have recently been displayed at the Design Centre and at the Wellcome Trust's Two-Ten Gallery) had made a glass model of this very anemone[11].

Many of the species described in *Actinologia* (and in his monograph on the Rotifera) were classified and named by Gosse. The importance and thrill of taxonomy, the necessity for 'naming of names', is not something which needs explaining to readers of this journal! From the novelist's point of view, there is also something very intriguing about the idea that 'until an object is seen and described, it is unknown'. One of the main contemporary characters in my novel, *Seaside Pleasures*, is a malacologist and taxonomist, whose research has concentrated on the speciation of *Bulinus*, the African freshwater snail host of schistosomes. In this I was enormously helped by Dr David Brown from the Natural History Museum and indeed, one of the unusual thick-shelled Thiarid snails from L. Tanganyika, *Tiphobia*, which David describes in his own seminal monograph[12], plays an important rôle in the story – a role which links into the Victorian side of the novel, through little Willie Gosse's own attempts at collecting shells.

Gosse must have felt the power of this naming of names, although in his case it would be for the further glorification of the works of the Lord. His fervent enthusiasm for the natural world, and for understanding the behaviour of the organisms he studied, shines out from all his books, and he was a true example of a 'communicator' in his use of words and particularly of metaphor. These days we, as scientists, are taught how to

'engage' the public, how to make our research more 'accessible' (admittedly, in Victorian times science was a much simpler affair, partly because knowledge was so much more limited) but to Gosse this apparently came naturally. He toured the country lecturing and, even more unusually, he ran 'marine shore classes' at Ilfracombe.

'And thus we came to Barricane':[9] When I helped run Cambridge University 'marine shore classes' at Bideford we visited the shell beach at Barricane; Gosse, too, had gone there, riding across from Ilfracombe on a donkey. There 'a group of women may always be seen, raking with their fingers among the fragments … they usually lie at length upon the beach to work with greater ease: but when a visitor comes down, they throng around him like bees.' And they showed him 'the elegant wentletrap, the elephant's tusk or horn-shell, the cylindrical dipper, and the beaded nerite .. to which the local women have given the euphonious appellation of "guggy".'[9]

On our Cambridge University course the students (and their lecturers) sat and lay upon the beach and raked with their fingers; we found at least 35 species of shells, and I still have my prized wentletrap, now known as *Clathrus* not *Scalaria.* Round the corner, along the pale sands of Woollacombe Bay, 'little boys and girls were scampering hither and thither, picking up shells and sea-weeds, throwing pebbles into the sea and flying with affected fear from the advancing wave.' How easy it was to imagine Philip Henry Gosse striding by in his dark hat and coat, with his staff and collecting basket[3] and pretending not to watch 'the busy bathing-women – uncouth, uncorsetted figures – in blue serge gowns with a fringe of rags below', merely 'catching a glimpse of one of these brawny priestesses of Neptune offering a sacrifice to her divinity, in the shape of a slender figure with long sable robe and dishevelled hair'.[2]

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References

1. THWAITE, ANN, 2002. *Glimpses of the Wonderful*.
2. GOSSE, P.H., 1856. *Tenby*.
3. GOSSE, EDMUND. *Father and Son*.
4. GOSSE, P.H., 1853. *A Naturalist's Rambles on the Devonshire Coast*.
5. GOSSE, P.H., 1854. *The Aquarium*.
6. Kingsley-Gosse correspondence in the Brotherton Library, University of Leeds.
7. *New facts and old fancies about sea-anemones*, in Blackwood's Edinburgh Magazine 1857.
8. *Seaside Studies*, in Blackwood's Edinburgh Magazine 1856.
9. GOSSE, P.H., 1853. *Sea-side Pleasures*.
10. GOSSE, P.H., 1860. *Actinologia Britannica.*
11. Thanks to Chris Meechan, Curator, at the NMGW, Cardiff, for information and the photograph.
12. BROWN, DAVID, *Freshwater Snails of Africa*.

Ann Lingard is also Dr Ann Lackie, formerly a lecturer in zoology and parasitology at Glasgow University (see *www.annlingard.com*). Of her fourth novel, *Seaside Pleasures*, published by Littoralis Press (*www.littoralispress.co.uk*), Matt Ridley says 'uniquely among modern novels, (it) makes real use of science rather than simply wearing science on its sleeve', and Ann Thwaite has called it 'immensely readable and extremely clever.'

Sir Joseph Banks – a personal hero

Many of us have some kind of personal hero to whom we look up – often a historical figure whose personality and achievements we most admire. In my case, it is Sir Joseph Banks, the first Honorary Fellow of the Linnean Society who, incidentally, played a crucial role in the eventual acquisition of the plant and other collections of Linnaeus which are now housed in the Society's basement.

But it is only in the last 15 years that Banks has come to occupy this position in my thoughts. Before 1987, my view of him was entirely different. It was coloured by his reputation as the domineering President of the Royal Society who did little to improve its antiquated and sometimes chaotic administration throughout his 42 years in office.

Figure 1. Portrait of Banks which hangs behind the President's chair in the Council Room of the Royal Society. From the painting by Thomas Phillips RA, 1809; engraved by N. Schiavonetti, 1812.

Behind the President's chair in the Council Room of the Royal Society hangs an imposing portrait of Banks (Figure 1, an engraving based on the portrait by Thomas Phillips) which is perhaps not inconsistent with the received opinion in that Society of a man whose autocratic behaviour was such that after he died in office, it was immediately ruled that no President should in future serve for more than five years.

For example, there was an episode early in his Presidency when he contrived the unwilling resignation of the Society's rather incompetent Foreign Secretary, Charles Hutton. At the Council Meeting when Hutton's resignation was accepted, it is alleged that Banks refused to support the formal vote of thanks for services rendered, on the uncharitable grounds that there was nothing to thank him for. No wonder, then, that pamphlets full of robust hostility to Banks were published. One of them was entitled "An history of the Instances of Exclusion from the Royal Society . . . and other Instances of the despotism of Sir J. Banks . . and of his incapacity for High Office". It contains many abusive passages such as: ". . . the President is incurably sick with the lust of domination, he imagines himself born to rule . . . . , and cannot perceive he has neither the intellectual nor the moral qualities of a ruler".

So how did I come to take a quite different view of this remarkable man? In the mid-1980s, I was one of the Officers of the Royal Society when we received an invitation from the Royal Society of Tasmania for someone to deliver a Sir Joseph Banks lecture in Australia during the bicentennial in 1988. As the then Biological Secretary, it fell to me to do this. The original idea was that the lecture should be primarily about my own work, but with a few minutes at the beginning about Joseph Banks. So I began to read up about him. The more I read, the deeper grew my admiration for this remarkable man, and in the end my lecture was largely about Banks and only a little about my own work. The image I then preferred of him is the portrait by Joshua Reynolds, painted when he was much younger. (Figure 2).

A brief outline of the life of Banks up until his return from the voyage to Australia with Captain Cook

Banks was born in 1743 into a family of wealthy Lincolnshire landowners, and when he was about fifteen years old he developed a passionate interest in flowers. He first learnt about them from the local peasant women who collected the kinds of plants which were used as medicines. Then he found a book in his mother's bedroom about British plants and their identification, Gerard's Herbal, and he mastered this so successfully that he ended up teaching the peasant women himself.

After school at both Eton and Harrow, he went up to Christ Church College, Oxford to study Botany. There he found that the Professor of Botany, Humphrey Sibthorp, had given only one lecture in 30 years, and had made no other arrangements for the instruction of students in his subject (such was the standard of lethargy in 18th century Oxford!). So Banks hired a tutor, Israel Lyon, at his own expense and brought him to Oxford where he gave a hugely popular course of lectures.

Figure 2. Portrait of Banks by Sir Joshua Reynolds PRA, 1773.

After leaving Oxford (without bothering to take his degree, as was common in those days) most young men of his social class made a leisurely grand tour around Europe, visiting all the great cities and enjoying themselves. But not Joseph Banks. An Oxford friend, Constantine Phipps, had become a naval officer on a small fishery protection vessel and through him Banks got himself taken on board as a naturalist, sailing across the Atlantic to Canada, to the remoter shores of Labrador and Newfoundland. There he made extensive collections of plants and animals, so gaining experience of carrying out botanical and zoological exploration in unknown lands under tough conditions. This would prove invaluable to him in the future. After returning to London, he commissioned a couple of artists to paint some of the plants and animals which he had collected. One of these was Sydney Parkinson, a poor young Scottish shop assistant who had developed a passion for drawing flowers, and who had moved to London to further his career as an artist.

Meanwhile, Banks' burgeoning reputation as a naturalist, together with his position in the upper levels of society, had led him to be elected a Fellow of the Royal Society. It was there that he first learnt about that Society's plans for an astronomical expedition to the newly discovered island of Tahiti to observe the transit of Venus across the face of the sun. These observations were considered important because they would enable the distance of the sun from the Earth's surface to be calculated He persuaded the Royal Society to let him join the expedition at his own expense, paying not just for himself but for a team of eight people to go with him. One of these was the artist Sydney Parkinson, and another was the young Swedish botanist Daniel Solander, a star pupil of Linnaeus whom Banks had first met at the British Museum. The ship which the navy purchased for the expedition, *The Earl of Pembroke*, was renamed *Endeavour.* It was to be commanded by a Warrant Officer, Mr James Cook R.N., later to be commissioned as Lieutenant and who had already acquired an outstanding reputation in the Admiralty as a seaman, navigator and cartographer in the operations under Wolfe in Canada and in the survey of the coast of Newfoundland.

This was the first occasion in the history of world exploration that a whole team of properly equipped naturalists and artists went on a major voyage. Banks had learned much from his trip to Newfoundland, and he contributed £10,000 to the costs of the voyage – more than twice the King's contribution of £4,000. After the *Endeavour* set sail, it called at Madeira, Rio de Janeiro and Tierra del Fuego, and then rounded Cape Horn to arrive at Tahiti in April 1769. Over the next three months the astronomical observations were completed with total success.

The stay on Tahiti was notable for two other reasons. First, it revealed Banks' omnivorous curiosity in that he made detailed notes not just about the natural history but about every aspect of the lives of the natives – their language, music, games, dress, clothes, houses, how they made their calendar, and the taste of native food like cooked dogs. Second, it cemented Banks' lifelong friendship with Cook who learned to rely heavily on Banks' good judgement when crew behaviour got out of hand on Tahiti, and later on when the *Endeavour* ran aground on the Great Barrier Reef.

But how and why did this straightforward astronomical expedition to Tahiti then continue and become the famous voyage of exploration to Australia, with Banks and Cook landing at Botany Bay in May 1770? It was because there was a political as well as a scientific objective, contained in the secret orders from the Admiralty and handed to Cook at the start of the voyage. At that time many were convinced there must be some large undiscovered continent somewhere in the huge expanse of the Pacific Ocean. Without such a continent, the planet Earth seemed very unbalanced. The northern hemisphere was already known to have the extensive land masses of Europe, Asia and North America, far larger than the few land masses then known in the southern hemisphere. If such a southern continent existed, it was important for Britain to get there first, especially before the French and the Spanish. The secret orders instructed Cook that after the stay on Tahiti he was to sail southwards until latitude 40º in search of

this unknown continent. If no land was found, he was to go West to the piece of coastline that a Dutch explorer had observed 130 years earlier, and to see if that was the northern extremity of the unknown continent. Cook was then to return to England by such route as he thought proper.

Seven weeks after leaving Tahiti, they had their first sight of this piece of coastline, which we now know as New Zealand. Having shown it was just a couple of islands and not part of Terra Incognita, there was some debate about which course to take back to England. They could return the way they had come by rounding Cape Horn, or go directly to the Cape of Good Hope. Neither of these options seemed attractive since it was winter and the ship was in poor condition. It was therefore decided to go by way of the East Indies, looking at another piece of coastline that earlier voyagers had glimpsed and had called 'New Holland'. Banks was firmly convinced of the existence of the southern continent, but Cook was not.

So it was in May the following year that they made their historic first landing in Australia at Botany Bay, then sailing all the way up the eastern coast to show it must be the unknown Southern Continent. As is well known, the voyage was an outstanding botanical as well as geographic success: 1400 new species of flowering plant were discovered – and that at a time when only 6,000 sp. were previously listed by Linnaeus. They had increased the known flora of the world by 25%.

Banks and Cook returned to England to acquire the same kind of fame as if they had been the first men to land on Mars, and it was the start of a lifelong friendship between Banks and the King, George III. But Banks never forgot that he owed his fame to the chance series of events that led to his voyage with Cook. Some 30 years later, in 1813, when trying to persuade the botanist W.J. Hooker to carry out a botanical exploration of Java, he wrote:

> ". . . .I was about 23 when I began my peregrinations. You are somewhat older but you may be assured that if I had listened to the multitude of voices that were raised to dissuade me from my enterprise, I should now have been a quiet country gentleman ignorant of a number of matters I am now acquainted with, and probably have attained no higher rank in life than that of a country Justice of the Peace."

But from the time of his return from Australia onwards, Banks used his fame, his wealth and his friendship with the King entirely for the benefit of other people.

Banks as 'The Father of Australia'

Banks' most enduring achievement is his reputation as the Father of Australia – and this was not simply because he landed there with Cook in 1770. Some years after he had returned to England, the American War of Independence broke out, and this closed off America as a destination for transporting convicts. An acute crisis developed in Britain because the prisons were running out of space. Various places were considered by the government as alternative destinations, and these included Senegal, the Gambia and even

Gibraltar. However, it was Banks whose well argued proposal persuaded the Government to select Botany Bay in Australia as the site of the first penal colony. He emphasised the good climate, the fertility of the soil and the abundance of fish and fresh water.

He then continued to exert a vitally important influence to ensure that the resulting colonisation of Australia would eventually be very successful. Banks had shrewdly judged from his voyage with Cook that the climate would be similar to that in the South of France, and he specified in great detail the kinds of food crops, vegetables, fruits and domestic animals that should be taken out on the first ships to ensure that agriculture was established. Many of these did not survive the first voyage, so he insisted that further vessels were sent out with better facilities for ensuring the plants and animals would stay alive.

While existence was tough and difficult for the first four years of the new penal colony, the situation then improved dramatically. For example, when the colony was first established in 1788, the initial population was about 1,000 persons, and the total livestock consisted of only 7 cattle, 29 sheep, 19 goats and 74 pigs, with no land under cultivation. Eleven years later the population had risen to 6,000, but now there were: 700 cattle, 5,000 sheep, 2,700 goats and 23,000 pigs. About 4,000 hectares of land were under cultivation and the colony was so successfully self-sufficient for food that infant mortality was lower than in Britain. Within 17 years, the average income per head was above that in Britain, and a French visitor was astonished at how the immense but useless Eucalyptus forests had all been cleared, with over 100,000 peach trees now growing as well as ever-extending farmland.

A key feature of the strength of the early Australian economy and which persists today was the success of its sheep farming. An important part of that success was Banks' influence in getting merino sheep introduced to the young colony. These sheep originally came from Spain, but in the 18th century, their export from that country was prohibited. George III was keen to get hold of some for his own farms, and it was Banks who organised the successful smuggling of them out of Spain, and the later establishment of them in Australia.

Even after the colony was successfully established, Banks continued a close interest in it. He participated in the detailed planning of the first circumnavigation of the continent of Australia by Matthew Flinders, paying not only for much of the expedition's equipment but also for the talented naturalist Robert Brown and the outstanding artist Ferdinand Bauer to take part. Just before setting out from England, Flinders secretly got his newly married wife on board to take her on the expedition. Banks is often accused of stopping this romantic plan and making him leave his wife behind. However, the Australian writer and historian Thea Stanley Hughes claims that Flinders' scheme was actually discovered by two Admiralty officials who noticed a lady on board not wearing a hat – a sure sign she was not just a visitor.

Banks as an influential scientist in Britain

During his lifetime, Banks was best known not for his Australian connections, but for being the most influential man of science in Britain. His own scientific activity lay in promoting the study of flowering plants, as can be illustrated by his role in the development of Kew Gardens. These had originally come into the possession of the British royal family in 1730 simply as some pleasure gardens with assorted pavilions, grottos, temples and gothic towers. They then entered a period of decay until George III asked Banks to take over and supervise their improvement. This gave him the golden opportunity for the first serious attempt anywhere to gather together plants from all over the world on a large scale and where they could be studied scientifically. He arranged for plant collectors to go out to all the major British colonies and other parts of the world – often with Banks himself paying their salaries, and later their pensions after they retired. In this way, over 7,000 different species of exotic plants were imported into Kew Gardens, and it was reshaped and re-landscaped into the broad layout we know today.

He arranged for work to continue on his own enormous collections of 30,000 or more specimens from Australia and elsewhere, employing a number of people who were later to become famous botanists and Fellows of the Royal Society in their own right, such as Daniel Solander and Francis Bauer. Banks expended considerable effort on the magnificent illustrations which the artist Sydney Parkinson had made of plants and animals during the voyage with Cook. He employed 10 engravers and spent large sums of money but sadly, they were not published in his lifetime, and it was only during the Australian bicentennial of 1988 that the whole collection was finally published.

Banks was no ivory tower scientist. The farmer in him believed strongly in using scientific knowledge to improve agriculture and horticulture. Just as he used his instincts so successfully about the right crops to grow in Botany Bay, so he also persuaded the East India Company to start growing tea in Assam and similar regions of India, and this was the start of the tea-growing industry that thrives so strongly in India today. But he also had his failures. It was his idea to have breadfruit from Tahiti transported to the West Indies for cultivation, since he believed it would be the ideal crop to feed the increasing number of slaves working in the plantations. This led to the famous voyage of Captain Bligh in the *Bounty* – and while a second voyage by Bligh successfully transported the breadfruit, it never caught on as a crop and it scarcely features today in the West Indies. In Britain, he fostered many innovations in horticulture, especially in growing fruits and berries, and he founded the first horticultural society in the world, the London Horticultural Society which today is the Royal Horticultural Society of Britain.

Because the Royal Society then occupied very cramped accommodation in Somerset House, Banks' large house in the middle of London became the major informal centre of science in the country. He held frequent receptions on Sunday evenings where the latest scientific correspondence and treasures would be on display in his magnificent library. Every foreign scientist of note who came to England visited Banks' house, and his breakfasts were famous occasions for meeting guests informally. It was at one such

breakfast with James Edward Smith, later to be the first President of the Linnean Society, that Banks gave him the letter he had just received from Linnaeus' family offering to sell the collections which now reside in our basement.

And yet, for all of Banks' great contributions, he merits just a single footnote in Sachs' two volume *History of Botany.* One reason for this may be that Banks himself published very few scientific papers, and the one really important discovery he made was at first universally disbelieved. This was contained in a paper he published in 1805 on the diseases of wheat which suggested that the fungus which causes rust disease may be the same as a fungus which also occurs on barberry plants. Today, it is of course well known that the rust fungus has a complex life cycle, alternating between barberry and wheat as hosts, and forms the basis of the classical method of controlling the disease by eliminating all barberry plants near wheat fields. But when Banks published his paper it was attacked by many, and an anonymous reviewer in the *Farmers Magazine* of 1805 said: ". . . if the author were not a man of high rank and at the head of the Royal Society, his publication would be disregarded by every farmer in Great Britain". It would be another 60 years before the German botanist Anton de Bary was to carry out the first experiments to demonstrate that Banks was right.

Kindness to others

As a person, Banks was exceptionally kind, helping very many people from all walks of life. One illustration of this was the astronomer William Herschel, who discovered the planet Uranus. When Banks first met him, he was the wretchedly poor son of a Hanover bandsman who had come to England to make a very meagre living as a musician. Fascinated by stars, Herschel and his sister had made their own telescope because they were too poor to buy one. They ground hundreds of mirrors, so that by 1781 he possessed his own telescope with a 2m reflector and a 15cm aperture. It was with this home-made telescope that he discovered the planet Uranus, which he actually wanted to name after the King. Banks was very impressed by this poor young musician, and he went to George III to persuade him to appoint Herschel as his own astronomer, after which he made a series of further important astronomical discoveries. There is in existence a letter from Herschel to Banks thanking him for the gift of a particularly large pair of shoes – large enough for Herschel to be able to wear the 7 pairs of socks he needed to keep his feet warm when he was observing the sky on frosty nights.

Another example concerns Joseph Priestley, the scientist who discovered oxygen. Priestley was a difficult man with unorthodox religious views and who picked quarrels with many people. There was an occasion when Priestley wrote a bitter and angry letter to Banks, complaining that the Royal Society had rejected a candidate whom Priestley had proposed for election to the Society. In reality, this candidate was an obnoxious man with negligible scientific achievements but who, like Priestley, had rebellious political and religious views. Banks replied to this bitter attack with graciousness. The following year an angry mob, intent on destroying radicals and revolutionaries, burnt down

Priestley's house and laboratories – but it was Banks who quietly paid for all of Priestley's laboratory equipment to be replaced.

His kindness was not just restricted to people in Britain. The distinguished French geologist Dolomieu (after whom the rock dolomite is named) was captured and wrongly imprisoned by the Kingdom of Naples. Banks made exceptionally strenuous efforts to get Dolomieu set free, securing the support of a range of influential people who bombarded Naples with requests for his release.

Personal qualities

Banks had an unusual human foible. He liked to measure the weights of visitors to his house and record them in a large leather bound volume which still exists today. It is filled with the innumerable records of the weights of his friends, set out in alphabetical order. It begins with Lord Athlone, 13st 8½lb – a lightweight compared to his wife Lady Athlone at 15st 10½lb. In 1781, Banks at the age of 38 weighed 15st. Twenty five years later at age 63 he weighed 16st 3lb, and by 66 it had risen to 17st 2lb – although he added an incredulous question mark to this weight in his notebook. His wife put on weight even more quickly. In 1781 she was a mere 9st 6lb, but 13 years later this had risen to 13st 12lb. On the other hand his friend Solander remained constant at about 13st, and his companion on the original voyage to Labrador, Constantine Phipps, remained a steady16st over many years.

But the personal quality I admire most is that he was never keen on attaching his own name to anything. As we have seen and unlike the modern scientist, Banks wrote hardly any papers himself and instead, he nurtured and employed at his own expense a series of talented young scientists who later themselves became internationally well known as naturalists, and their names are still recognised today. We are not even too sure precisely where Banks is buried, since he directed in his will that after he died he was to be buried in an unmarked grave. Again, in a letter to a friend who wished to present his portrait to his old Oxford college, Christ Church, Banks replied that he was ". . .not much addicted to posthumous fame".

Banks and the Royal Society

Why did this kind, compassionate and generous man gain the reputation in the Royal Society of being an insensitive, domineering autocrat? At the time he was elected President, it was a very different body from today. Although essentially a scientific academy, it had no income of its own or government grants, and so it elected to its Fellowship not only scientists, but wealthy persons of high social standing. At the time of Banks' election as President, nearly two thirds of the Fellows were noblemen, and only one third were scientists. Furthermore, the noblemen were suspicious of the scientists, and prevented them from becoming the majority on the Society's Council.

The reason why Banks was elected President in 1778 was that the Royal Society had fallen out with the King in a ridiculous but heated argument over the shape of lightning

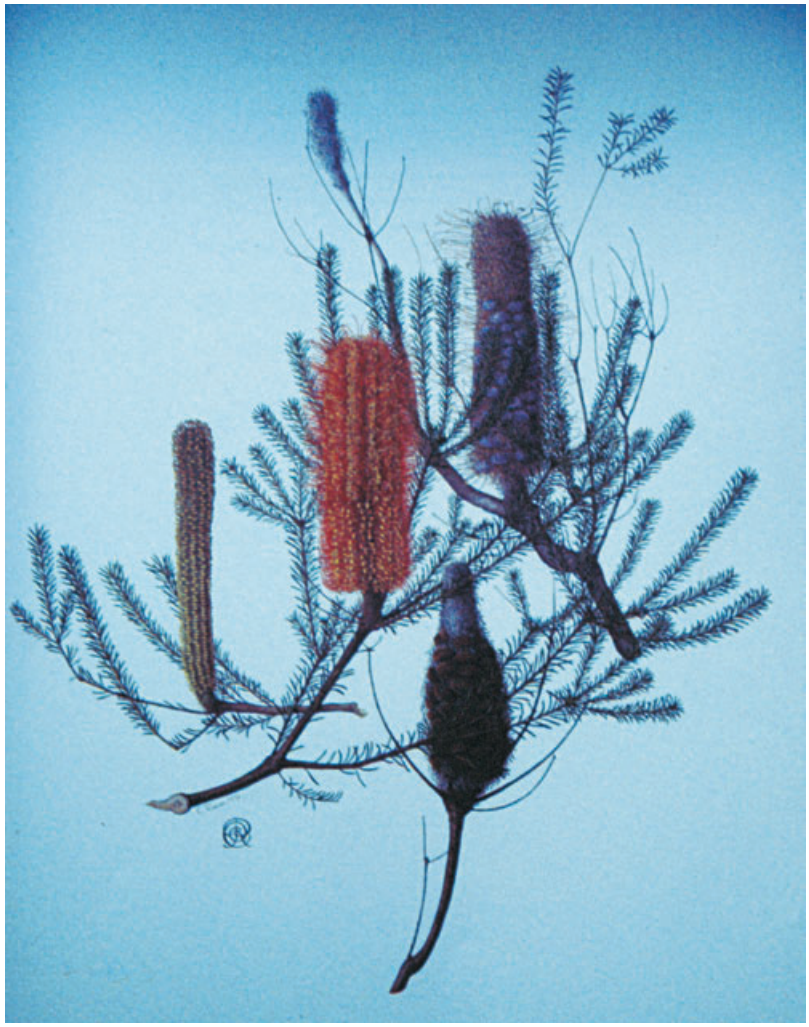


Figure 3. Painting of *Banksia ericifolia* by Celia Rosser.

conductors. The Society had recommended to the King that ammunition stores should be protected by conductors which were pointed since one of its Fellows, Benjamin Franklin, had discovered that this was the best shape to conduct electricity. Shortly after pointed conductors had been fitted to such a store at Purfleet, it unfortunately blew up. The King asked the Society to rescind its recommendation, but the then President refused, saying he could not ". . .reverse the laws and operations of nature". By that time, Benjamin Franklin had become prominent as a rebel in the American colonies, and was therefore perceived as a traitor. An angry King then had all the newly fitted pointed conductors removed from his palace and replaced by the knobbed and rounded conductors advocated by scientific opponents of Franklin. The President, Sir John Pringle, then resigned.

Deeply worried by this serious breach with the throne, the Society unanimously elected Banks as President because he was a known very close friend of the King.

However, this was a time in British history of widespread institutional decay, despite the immense achievements of individuals. The House of Commons was corrupt, the Church and Universities in deep lethargy, and the City Corporations in decay. Nevertheless for the British governing classes, the state of society in which they enjoyed so many privileges hardly seemed capable of improvement. Their deep, conservative opposition to change was reinforced by the horrors of the French Revolution. Indeed, it was the worst possible time for a President to try to reform the antiquated and chaotic way in which the Royal Society operated, especially given the majority of noblemen amongst its Fellows. They had elected Banks because they also thought of him as one of them – instead he turned out to be a passionate supporter of science, and it was his attempts to use his position to improve the Society which got him the reputation of an autocrat.

Remembering Banks

For me, Banks is best epitomised by what he said when selecting his personal seal or emblem, which was the lizard

> "I have taken the lizard, an animal said to be endowed by nature with an instinctive love of mankind, as my seal, as a perpetual remembrance that a man is not so well employ'd as when he is laboring for the advantage of the public; without the Expectation, the Hope, or even a wish to derive advantage of any kind from the results of his exertions."

It is particularly appropriate that his name should be forever perpetuated by the very attractive genus of Australian plants, *Banksia*, first collected on that epic voyage with James Cook (Figure 3, *Banksia ericifolia).*

SIR DAVID SMITH

On Linnaeus' Obscure Norwegian Ancestry

In biographies of Linnaeus information on his father,who was interested in plants, and his family dominates. His mother Christina (Fig.1) is mentioned as belonging to a family of vicars during several generations, not revealing their ancestral origin any further than to her grandfather, Jørgen Simonsson Schee. Fries (1903), though, indicates his Norwegian origin , "born by citizens of Stavanger", but does not record their names. There is, however, reason to look more closely at this part of his ancestry.The previous silence may not have originated from difficulties in finding the data abroad. In reality, the maternal grandfather's mother, Johanne Pedersdotter (1584–1622) was famous, or rather notorious, because she was burnt as a witch in Stavanger on the 29th or 30th of September 1622. The case is well documented (Erichsen 1917), and the court records still exist, and have been made available to me. It makes most interesting, but horrifying reading.

Figure. 1. Linné's mother Christina as painted in festive costume (Painting at Hammarby).

It is sufficient here to mention that the initial charges against her related to the death of the wife of the chaplain of Stavanger Cathedral, Nils Olufsen, rumoured to be "unnatural". The case was taken up in "Rådstueretten" (Fig. 2) by the mayor on the first of July 1622 (Fig. 3), and a woman named Karen Nilsdatter (Stabo), a renowned clairvoyante, testified that she had seen a white apparition in the porch of the chaplain's house, and outside her windows, recognizing Johanne Pedersdotter. A multitude of other women, and a few men, throughout the trial which lasted all summer, stood up and told of suspicious incidents and disease related to her, and on the tenth of September she was convicted and sentenced to death by fire. To me this appears as a collection of slanders from envious women, including the deceased, whom the sharp-tongued Johanne had outsmarted and offended. Even the Bishop's wife witnessed against Johanne, by citing accusations brought forward on her deathbed by the chaplain's wife, who had not been on good terms with the accused. It is difficult to understand that the men of law and the King's

representative,"Lensherre" (The Bailiff) Hendrik Bille, regarded this as conclusive evidence and sent her to the fire. The King had, however, issued a very strict law relating to witchcraft, a matter which was taken very seriously in the early days of the reformed protestant Kingdom of Denmark-Norway (Alver 2000). Likewise it is hard to comprehend that *after* the verdict she was tortured to confess, and she did not do that easily. The reason was, at least officially, that she should leave this world with a clean conscience, in order to save her soul.

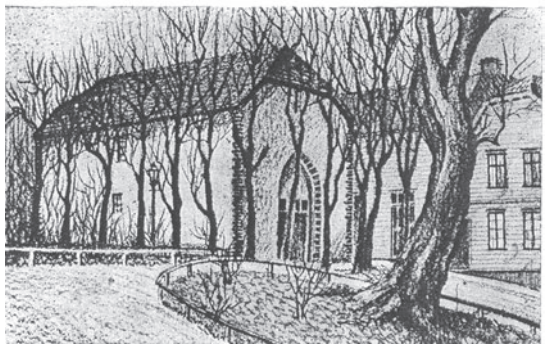
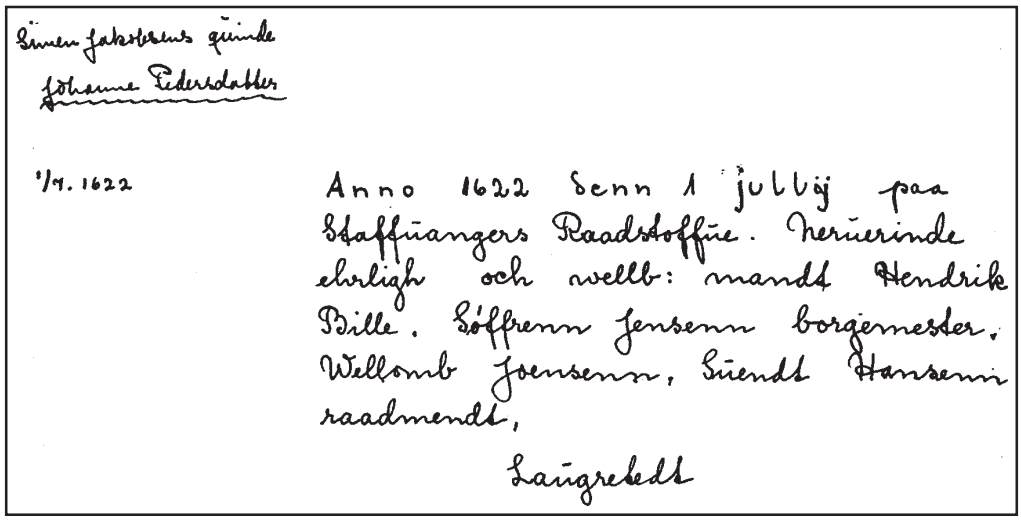


Figure. 2. Rådstuen in Stavanger where the trial was held (from an old pencil drawing).

Her husband Simon Jakobsen stood by her all the time. (They appear from the records to have had a close and warm relationship.) Otherwise we know little about him. He is, however, mentioned in the court records as "Guds ords tjener"– the servant of God's word. This is a surprising statement as he was not a vicar, but probably had some appointment from the Bishop, according to Erichsen (1917). As a matter of fact, he was a rich landowner and merchant, as evident from other parts of the court records. He must have been older than her, Johanne being his second wife, married him in 1601. They had four children, of whom we only know about one, the son Jørgen Simonsen (1612–1692), who later brought the family to Skåne. He was only ten when his mother


Simen Jakobsens qvinde
Johanne Pedersdatter

1/4. 1622

Anno 1622 denn 1 julij paa Stadtzuangers Raadstoffue. Nerwerinde ehrligh och wellb: mandt Hendrik Bille. Tolffuenn Jensenn borgemester. Wellomb Joensenn, Suendt Hansenn raadmendt,

Saugrebdt

Figure. 3. The first page of the records in the trial of Johanne Pedersdatter (State-archives, Stavanger).

was burnt, and was sent abroad, to Denmark, by his father. He must have been a bright boy, since he eventually got a scholarship at the Viborg Cathedral School from where he graduated in the 1630-ies with honours. He is recorded to have been teaching the vicar's children and to have been a member of the 'Davidicos' (choir boys). For a short time thereafter he served as assistant teacher ("hører") at the Cathedral School in Stavanger, a remarkable fact so soon after his mother's conviction as a witch. He continued his studies (of theology) at the University of Copenhagen, where he registered as a student in 1636, and after finishing he was offered a position as teacher at his old school in Viborg; an offer he declined, instead taking up positions as 'informator' (private teacher) at different vicarages near Kristianstad in Skåne, then part of Denmark. At midsummer 1640 he was called to nearby Visseltoft to take over as vicar. Here he married Anna Pedersdotter Bigh (1622–1703), the daughter of the recently deceased vicar. She belonged to a dynasty of vicars who had been resident at Visseltoft since about 1540 (her great grandfather was Laurentius Bigh). The marriage was successful , and they had eight children. Jørgen took the family name of Schee (most probably after his father's farm Skeie near Stavanger), and was known to be a good and learned vicar. In the annals of vicars in Lund diocese, he is recorded as one unusually well versed in the Bible. They had not seen any better at this time, for he knew the Bible by heart and could recite any part of it, when needed. However, the Bishop once complained about him because he

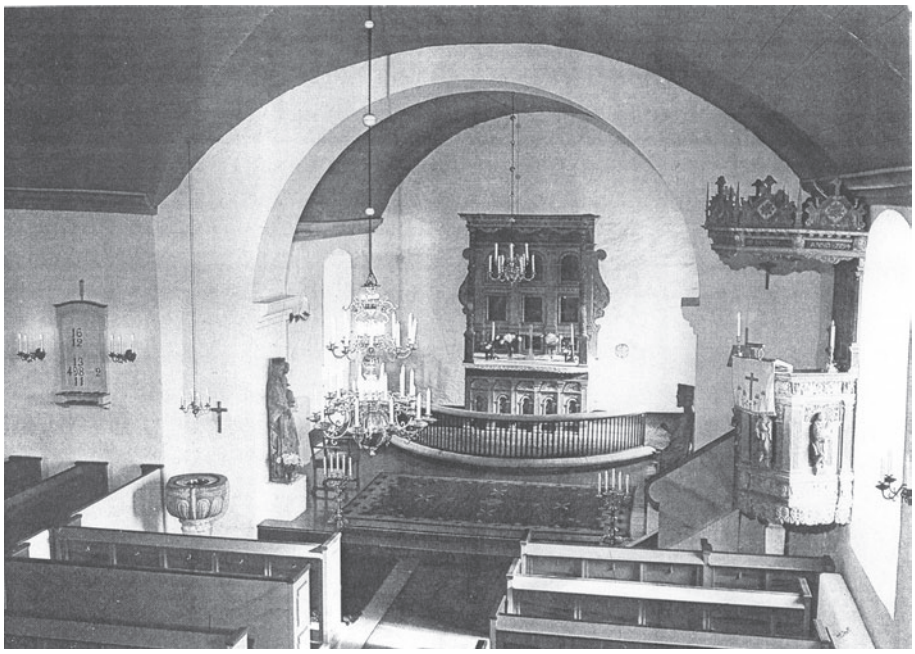


Figure. 4. The altar near which Linnaeus' grandfather is buried.
None of the locals, including the vicar, had any knowledge of the tomb
which was built over during a re-building of the church in 1939.

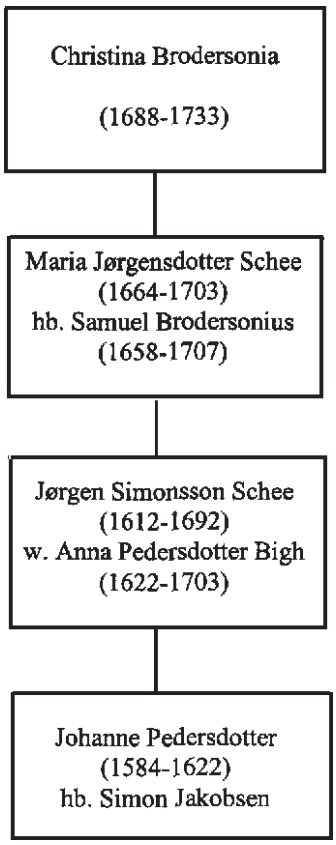


Figure 5. Linné's mother's family-tree back to Johanne Pedersdatter.

allowed candles in the church at weddings and other celebrations, a practice which was wasteful, dangerous and Catholic. In 1674 the vicarage burnt down, and after that he did not regain his former strength, but was fortunate "to see fifty descendants before leaving this world". The daughter Cecilia married his successor, Lars Nilsson Opman, who was assigned to him as an assistant from 1684.

The son Simon Jørgensen (1660–1740) took the family-name of Wesseltoft, and his son, Simon Wesseltoft (1706–1782), continued the family tradition as a vicar, and through his descendants the family was reintroduced to Norway via Denmark. When one of them, Marthe Marie Jensen, in 1859 married the vicar Ole Bergesen, serving in Stavanger Cathedral from 1882, the circle was completed.

However, Jørgen's youngest daughter Maria (or Marna?) Jørgensdotter Schee (1664–1703) is of more interest to us. She married the "slow and silent" vicar Samuel Brodersonius (1658–1707) in Stenbrohult, a familiar placename for most Linnaeans. Indeed their daughter (Fig. 5), Christina Brodersonia (1688–1733) (named after her

aunt Christina Jørgensdotter Maglowius, née Schee) in 1706 married the young assistant of her father, Nils Ingemarsson Linné (1674–1748). In the spring next year they had their first child, a son Carl.

It is uncertain whether Carl knew about this dark spot in his ancestry. This was not something that a family of the church would talk about, but it might have been one of those things that "everybody" knew about, but never mentioned. It does not appear openly in any of the Linnean works as far as I have found, not even in the many autobiographical notes ("vitae") he left, one with a family-tree (according to Fries). His reservations about digging too deep into the family roots, cited in the beginning of Fries' biography (1903), do suggest that he knew there might be something unpleasant far back somewhere. His dislike for Norway and Norwegians may also have its origin here. Though this was a general tendency, with political roots, among Swedes, it is unusually strongly expressed in his work. In the itinerary of the Lappland Journey we find the following passage: "As soon as I came into Norway, there was a multitude of flies in the houses." Likewise, in his itinerary on the travel to Røros (the only other time he personally visited the country), he complains about the uncivilized behaviour of the Norwegians, their bad manners and untidiness. He also named the brown rat as *Rattus norvegicus*, though it was in no way special to Norway and was known to have invaded from the East, not long before he named it. (It probably arrived in Scandinavia first in Copenhagen from a Russian ship, about 1735). It should be noted, though, that he accepted eleven Norwegian pupils (Dahl, 1907), one of whom, Martin Vahl, is said to have been one of his dearest students (Jørgensen, 1999), so his antipathy was not so deeply rooted.

Acknowledgements

I am above all indebted to Ms.Vibeke Eeg Henriksen who put me on the trail of this story and to my colleague Prof. Bente Alver who provided me with data on witchcraft in Norway. My thanks are also conveyed to the many librarians and archivists who have searched for and provided me with copies of books and documents in their possession, particularly Ms. Gina Douglas of the Linnean Society, London, who also kindly gave linguistic advice.

PER M. JØRGENSEN

References

ALVER, B.G., 2000. Når fanden er løs i Bergen by!
CAVALLIN, S., 1854-58. *Lunds Stift herdaminne*. Gleerups, Lund.
DAHL, O., 1907. *Carl von Linnés forbindelser med Norge.* Trondhjem.
ERICHSEN, A.E., 1917. *Heksen Johanne Pedersdatters Historie samt en stamtavle over en Del av hendes Efterkommere.* (utgitt av Sigval Bergesen) Dreyer, Stavanger.
FRIES, T. M., 1903. *Linné. Lefnadsteckning.* Fahlcrantz, Stockholm.
JØRGENSEN, P. M., 1999. Martin Vahl, Norges første botanikkprofessor. *Blyttia* 57: 53-60.
LINNŽ, C., 1732. *Iter lapponicum.* In Ungdomsskrifter, Stockholm.
LINNŽ, C. 1734. *Iter dalecarlicum*. In Ungdomsskrifter, Stockholm

Obituary

Mohammad Salar Khan (1924–2002) died on 30th September 2002. He was born in Kakinada, Andhra Pradesh, India on 2nd March 1924 and obtained an M.Sc. Degree in Botany from the Aligarh Muslim University in 1947. He joined Dhaka University as a Lecturer in the then Department of Biology in 1950, serving the department up to 1991 as a Senior Lecturer, Reader, Associate Professor, Professor and Supernumerary Teacher. In 1962, he obtained a Ph.D. degree in plant taxonomy of angiosperms from the University of Edinburgh during which time he took part in the Oxford University Expedition to study and collect plants from the mountainous parts of western Turkey.

Returning to Dhaka University, Dr. Khan devoted himself to studying and exploring extensively the flora of Bangladesh where he described 19 new angiosperm species and was instrumental in establishing the Bangladesh National Herbarium, resulting in the publication of the *Flora of Bangladesh* in a series (now No. 53), *Aquatic Plants of Bangladesh, Red Data Book on Bangladesh*. Professor Khan served as National Co-ordinator, the Biological Diversity and Genetic Resources Project, Commonwealth Science Council, and as a member of the Species Survival Commissions of the IUCN. He was an Honorary Fellow of the Bangladesh Botanical Society, and was elected a Fellow of the Linnean Society in 1988.

THE SINO-HIMALAYAN PLANT ASSOCIATION

THE KOHLI MEMORIAL GOLD MEDAL

The Sino-Himalayan Plant Association has created a new award, to be called '**The Kohli Memorial Gold Medal**'. This medal is to be conferred on persons who have made a significant contribution in the field of Himalayan horticulture and botany.

A certificate of appreciation and a gold medal is to be presented to Mrs Urvashi Suri, proprietor of P. Kohli and Co., and daughter of the late Mr Prem Nath Kohli, at the commemorative event in India.

The P.N.Kohli Memorial Lecture at the India Habitat Centre, New Delhi on October 12th 2003 is entitled "Flowers fit for a Maharajah". The keynote speaker will be Christopher Chadwell, a freelance botanist specialising in the Himalaya. Christopher is the founder and Chairman of the Sino-Himalayan Plant Society, and also curator of the Kohli Memorial Himalayan Garden - a small private botanic garden in Slough, Berkshire.

Guests of honour in Delhi will be Mr Peter Higgs and his wife Paula from Chobham in Surrey. Peter's grandfather, Bernard Okes Coventry was conservator of forests in Kashmir between the two world wars. Coventry was author of "Wild Flowers of Kashmir" a series of popular guides utilising early colour photography. Peter is currently establishing a small arboretum of North-west Himalayan trees and shrubs in his garden in Chobham to honour his grandfather.

Kohli worked for the Kashmir Forest Service around the same time as B.O. Coventry. It was as a result of a request from Colonel Wigram, Private Secretary to King George V, through the Maharajah of Kashmir, that Kohli, a knowledgeable plantsman was delegated the task of searching for garden worthy seeds and bulbs to supply the Royal parks and gardens. He was so successful that Thomas Hay, superintendent of the Royal parks and gardens, proposed a gold medal from the Royal Horticultural Society. Some of Kolhi's introductions are described in Hay's "Plants for the Connoisseur".

The citation on the Certificate of Appreciation reads:

"In recognition of Prem Nath Kohli's outstanding contribution to the cultivation, study and conservation of the flora of Kashmir (his services having been previously honoured by the Royal Horticultural Society's Floral Committee in 1932 in the form of their highest honour - a Gold Medal). This society is pleased to announce the commencement of a new award."

For further information please contact:

Mr Christopher Chadwell B.Sc., 81 Parlaunt Road, Slough Berks, SL3 8BE
Tel/fax 01753 542823
Or e-mail bentapex@aol.com

Bat-Plant Relationships
The Conservation of Threatened Species

A one-day symposium organised by Fauna & Flora International, The Linnean Society of London and The Bat Conservation Trust. To be held at The Linnean Society of London, Burlington House, Piccadilly, London W1J 0BF on Friday 28th November 2003

Provisional Programme

10.30 Registration and coffee
11.00 Opening Address by Dr John Edmondson, Vice President of The Linnean Society of London

First session: Chair Professor Paul Racey
11.10 Professor Ted Fleming, University of Miami – Population biology of a migratory nectar-feeding bat, *Leptonycteris curasoae*
11.55 Njikoha Ebigbo, University of Ulm – Flying foxes and vegetation dynamics in savannah-forest mosaic in Cote d'Ivoire

12.40 – 14.00 Lunch

Second session: Chair to be decided
14.00 Professor Paul Racey, University of Aberdeen – Fruit bats as pollinators and seed dispersers in the forests of southern Madagascar
14.20 An Bollen, University of Antwerp – Fruit diet and food selection of flying foxes (*Pteropus rufus*) in littoral forest fragments in south-east Madagascar
14.40 Dr Robert J. Whittaker, University of Oxford – Role of bats in plant succession on Krakatau

15.25 – 15.45 Tea

Third session: Chair to be decided
15.45 Simon Mickleburgh, Fauna & Flora International – The economic importance of bat-plant relationships
16.30 Speaker to be decided
17.10 Concluding discussion

17.30 End of meeting
Booking form can be found at www.linnean.org, or by contacting Janet Ashdown at the Society.

The Linnean Society
Programme

2003

9th Oct.	6pm	IN THE BLINK OF AN EYE: THE CAUSE OF THE MOST DRAMATIC EVENT IN THE HISTORY OF LIFE Andrew Parker, Dept. of Zoology, University of Oxford
16th Oct.*	6 pm	NATURALIZED SPECIES: THE ECOLOGY OF SUCCESSFULLY INTRODUCED SPECIES **Book Sale**** Sir Christopher Lever FLS
23rd–24th Oct.		LONG TERM DATABASES AND ECOLOGICAL CHANGE † Terence Langford FLS, University of Southampton
8th Nov.		THE MYSTERIOUS ORIGINS OF THE ENGLISH APPLE The Brogdale Lecture Barrie Juniper, Plant Sciences, University of Oxford
21st–22nd Nov.		COLOUR AND DESIGN (with Inst. Mech. Eng. and others) † Michael Collins, University of the South Bank and † David Cutler FLS, RBG, Kew
28th Nov.		BAT-PLANT RELATIONSHIPS: THE CONSERVATION OF THREATENED SPECIES (with Flora and Fauna International and the Bat Conservation Trust) *see overleaf for details.*
11th–12th Dec.		ALEXANDER VON HUMBOLDT † Walter Lack FMLS, Botanischer Garten u Botanisches Museum Berlin-Dahlem
13th Dec.	2 pm	Conversazione

2004

22nd Jan.	6 pm	SEASIDE PLEASURES: PHILIP HENRY GOSSE AND THE BATHING WOMEN (*see pages 27–30 this issue*) Dr Ann Lackie Lingard
11th Feb.		LYELL MEETING 2004: DINOSAUR PALAEOBIOLOGY at the Geological Society; *see p. 47, this issue for details.*
13th Feb.		DARWIN'S BARNACLES † Prof. Phil Rainbow FLS, Natural History Museum

Unless stated otherwise, all meetings are held in the Society's Rooms.
For further details please contact the Society office or consult the website – address inside the front cover. * Election of Fellows † Organisers
** All books gratefully received, preferably before the day of sale please.

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