

## Editorial

On 16 August 2001 a stamp will be issued jointly by Australia and Sweden. The design is by Melinda Coombs of Melbourne, while the engraving was carried out in Stockholm by Czeslaw Slania. The design is based on the drawings of Cook's ship *Endeavour* and of *Barringtonia calyptata* and *Cochlospermum gillivraei* by Sydney Parkinson, and on the portrait of Solander by William Parry ARA which hangs in our Library. In honour of this special stamp we have decided to provide a brief account of the life of Daniel Carl Solander (1733–82) and the Botany of Cook's Voyages.



Daniel Solander was born in Piteå, Sweden, on 19 February 1733. The name Solander comes from that of a village, Solberget, the birthplace of his forefathers. At 17 he enrolled at Uppsala University, where he studied under Linnaeus. In 1759 Linnaeus sent him to England in response to the entreaties of two prominent naturalists, Peter Collinson and John Ellis. He was initially supposed to stay for two years but, in the end, he remained there for the rest of his life, becoming Assistant Librarian at the B.M. in 1763 and then Keeper of Natural History in 1773. He was befriended by Joseph Banks who, having been given permission to join *Endeavour* on her trip to the South Seas (1768–1771) asked Solander to accompany him as botanist. Besides Solander, Banks was accompanied by two artists, one of whom was Sydney Parkinson (1745–1771) the son of a Quaker brewer who had already been employed by Banks<sup>1</sup> to illustrate natural history material collected on a visit to Newfoundland and Labrador in 1766.

1 Parkinson came to Banks' attention when he first began to exhibit his paintings in London.



Daniel Solander

Banks' income was said to be about £6,000 per annum; in outfitting this collecting trip he spent about £10,000 on stores and equipment. The scale of the expedition can be judged from a letter that John Ellis wrote to Linneaus on 19 August 1768:

"They have got a fine library of Natural History; they have all sorts of machines ..... No people ever went to sea better fitted out for the purpose of Natural History nor more elegantly. They have all sorts of machines for catching and preserving insects; all kinds of nets, trawls, drags and hooks for coral fishing; they have even a curious contrivance of a telescope by which, put into the water, you can see the bottom to a great depth, where it is clear. They have many cases of bottles with ground stoppers, of several sizes, to preserve animals in spirits. They have several sorts of salts to surround the seeds, and wax, both bees wax and that of *Myrica*."

Solander was officially engaged by Banks in 1768 to join him on the *Endeavour* as botanist at a salary of £400 a year and to paper the plants for posterity.

In the event, everywhere that Solander went he helped Banks collect and he prepared the subsequent botanical manuscripts, using the Linnean system. Today a complete set of manuscripts exist in Solander's hand for Tierra del Fuego, Tahiti, New Zealand, Australia, Java, The Cape of Good Hope and St Helena!

Solander also kept a journal while on board which contained a meticulous record of all the plants collected.<sup>1</sup>

Parkinson, meanwhile, made detailed sketches, often coloured, of important parts of each plant; then in the evenings he would complete his drawings in the great cabin. Parkinson would also make colour notes on the reverse of his sketches when in the field (and in the event of him not completing any of his pictures, other artists were able to follow these notes).



Sydney Parkinson

Once a drawing or painting had been completed by Parkinson, Solander made a note on the back of the name of the species while Banks noted the locality. In this manner Parkinson produced over 400 sketches of plants while the ship was in Australian waters alone. All told, Parkinson left some 1,000 finished and unfinished botanical paintings and sketches as well as several hundred zoological illustrations, when he died of malaria at the age of 25 soon after *Endeavour* had left Batavia.

On completion of the voyage and their return to London, Banks appointed Solander to be his Librarian (1771–1782) thereby ensuring some continuity of effort, with

---

<sup>1</sup> Solander and Banks had brought back to London some 30,000 individual specimens estimated by Prof C Humphries to contain more than 1,400 species new at that time.

Solander supervising other artists working from Parkinson's notes. Thus John Miller and his brother James, John Clevely and Thomas Burgis produced 213 completed drawings. Eventually, Clevely and John Miller left and were replaced by Frederick Nodder. Nodder and James Miller and Burgis between them completed a further 271 drawings (mostly by Nodder). In this fashion, by the end of 1784 a total of 748 drawings had been completed including those finished by Parkinson on the voyage.

During the voyage Solander had also kept notes on the animals, particularly fishes, in the form of a Slip Catalogue (now in the NHM). Thus, besides supervising those botanical drawings, he now found time to help describe some of the 222 different species of fish from Parkinson's paintings. Jonas Dryander, another of Linnaeus's pupils, had come to work as an assistant librarian, thereby allowing Solander more time to supervise the 18 master engravers whom Banks had employed to make copper plates from the finished drawings. A total of 743 copper plates was engraved at a cost to Banks of £7,000. Banks had originally planned to publish the botanical results of the voyage in a massive work of over 700 plates to be called the *Florilegium*, but Solander's sudden death from a stroke in 1782, together with the economic recession induced by the American War of Independence, led to a cancellation of the project. Apparently the subsequent loss of the American colony had caused disruption to the wool trade from which Banks derived a substantial part of his income. Most of the plates, however, had already been inked up and black impressions made by the engravers; these proofs of the plates had already been sent by Solander to Haller in Berne, Cavanilles in Paris and the Alstroemers in Stockholm, thus there seems little doubt that his untimely death was the most obvious reason for the project's demise.

Shortly before his death in 1820 Banks bequeathed his entire collection to Robert Brown. Brown subsequently negotiated with the Trustees of the British Museum at Bloomsbury, and in 1823 the *Endeavour* collections were transferred there. In 1827 Brown was appointed the first Keeper of Botany at the British Museum.

The first attempt made to publish Banks' plates came in 1900 and 1905, when Hazell, Watson and Viney printed them from lithographs based on the original engravers' proof pulls. All told, in this manner, 318 Australian plates appeared in a three volume work known as *Illustrations of Australian Plants* edited by James Britton.

The second attempt came between 1963 and 1973 when a sample of the best 30 plates was published in a black and white edition of 100 under the title *Cook's Florilegium*. It was published and printed at the Royal College of Art with a text compiled by William Stearn and Wilfred Blunt, based on Solander's originals. Sad to report, five of the Banks copper plates were subsequently stolen from the RCA.

The third and final attempt came in 1978 through the efforts of Prof Christopher Humphries. In the course of his work on the Banks collection he relocated the original copper plates in the Library of the BM(NH) together with Solander's manuscripts. From Bacstrom's catalogue to the drawings, Chris was able to deduce that of the 743 copper plates originally engraved, 738 still survived (5 having been stolen – see above). Coincidentally, Chris' next door neighbour in Richmond, Nigel Frith, worked for Alecto Historical Editions who publish colour prints of English and American artists such as David Hockney, John Piper, Jim Dine and Claes Oldenburg (as well as the famous Audubon folios of birds). Chris explained (during their jogging excursions





Two engravings from *Banks Florilegium*, based on the drawings of Sydney Parkinson made during Captain Cook's voyage, 1768–1771 and printed "à la poupee" for Alecto Historical Editions and The British Museum (Natural History) at the Edward Egerton-Williams Studio 1980–1989.

Plate 380 *Clerodendrum paniculatum* Linnaeus. Collected in 'Batavia'.

The plate was made by Daniel Mackenzie.



Plate 369 *Peltophorum pterocarpum* (de Candolle) Backer ex K. Heyne. Collected in Java, South of Anger Point. The plate maker is unknown.

together) that there was some evidence that Banks himself had originally intended printing the plates in colour, but that he would first have produced black and white prints. Together they decided that to print the 738 plates of the *Banks' Florilegium* in such a manner as to turn a set of scientific engravings into a work of art it would, by necessity, have to be printed in colour. Eventually, by 1980 they had put forward a scheme for a joint publication between the British Museum (Natural History) and Aleto Historical Editions, with the printing being undertaken by Edward Egerton-Williams, a former employee of Aleto. The plates were printed by a 17th Century technique called "à la poupée", in which a bunched piece of cloth or dolly is used to work each pigment directly into the plate with, in some cases, up to 15 colours. Egerton-Williams eventually employed two Bank of England plate engravers to remake the five missing plates from the contemporary black and white proofs.

The publication of *Banks' Florilegium* was completed in March 1989. Accompanying it was a two volume definitive catalogue edited by Chris Humphries and Judith Diment, while Aleto's researcher Elaine Shaughnessy contributed the index. There are 34 portfolios in all, each containing 22 or 23 prints. The Australian plants, consisting of 337 plates, make up parts 1 through 15. There are then portfolios, in varying numbers, for Brazil, Java, Madiera, New Zealand, the Society Islands and Tierra del Fuego. Thus, in the end, Solander's intellectual effort and industry, and Banks' enormous expenditure, have not been in vain. However, to come to fruition the project conceived by Chris Humphries has taken a decade of devoted effort, by more than 80 printers and artists at the Egerton-Williams Studios, two typographers at IMPRINT and two editors and a researcher at Aleto and the BM(NH). Initially the 34 portfolios were sold by subscription at £40,000, two every six months. Eventually the completed sets were sold in a limited edition for £150,000.

BRIAN GARDINER

---

## Society News

Amongst future meetings planned (see back cover) one is with the British Lichen Society on Friday, 11 January 2002, when the Swinscoe Lecturer will be Professor David Richardson, now Dean of Science, St. Mary's University, Halifax, Nova Scotia, whose talk is entitled *Reflections on lichenology: achievements and challenges over the last forty years*. Other joint meetings include *The molecular ecology and epidemiology of parasites* with the British Society of Parasitology on 14 September 2001, *History of Palaeobotany* with the History of Geology Group of our neighbours, the Geological Society, on 24 October 2001, and *Fossil molluscs* with the Malacological Society of London on 17 January 2002.

During March, Science Week a celebration, *Frontiers of Science*, was held in a school in Canterbury. Some 300 students from sixth forms all over England attended. Most of the time was taken up with a series of presentations by the students themselves, former students now engaged in scientific research, and distinguished speakers from biology, chemistry, engineering and physics. The quality of the presentations by students and their forbears was high, but those of the distinguished guests were

somewhat less coherent – slides and overheads featuring the entire contents of the *Encyclopaedia Britannica* with complex chemical and biological structures to match – “...I want you to look at the bottom right-hand corner...” We are left wondering whether scientific communication is a gift, rather than an acquired talent. One hero to emerge from this fustian hall of fame was the Astronomer Royal, whose presentation on his subject was just comprehensively comprehensible and exciting. Fortunately, for those interested, he is a master of the written word, too, and can be found in **Rees MJ. 2000.** Piecing Together the Biggest Puzzle of All. *Science* **290**: 1919–1925 (8th December 2000). In passing, Sir Martin noted that astronomy was “...simple, compared with biology...” rather reminiscent of Newton’s dictum *Natura enim simplex est*, both of which seem at first reading to be significant understatements. But as the wrappings are taken off the sequence of the human genome – supplement to *Science* **291**, 16th February 2001 – and, more pertinently, comparisons of sequences are made between species, the common patterns which are emerging suggest that wily old Sir Isaac might not have been too wide of the mark. *Plus ça change....*

A further pilgrimage to Canterbury took the Society’s President into the chair of a panel discussion with some 100 sixth form students on the occasion of the Society of Experimental Biology’s Education Day at its Main Annual Conference. The topic *Does Extinction Matter?* produced some provocative questions from the audience – “Can G(enetic) M(odification) reduce extinction?” – which left the panel – Dr. Martin Angel, Professor Stuart Harrop, Dr. Adrian Lister FLS and Dame Ann McLaren FRS – rather gasping for answers. Dr. Angel, with Mrs. Virginia Purchon FLS, had provided a teach-in on biodiversity for the students earlier in the day. The two Societies have agreed to continue to share the costs of this event in 2002 in Swansea.

Leslie Lauste was not a Fellow of the Society for very long, joining in 1989 at the age of eighty-one. He died last year and a memorial service was held for him in Brighton where he had worked as a surgeon since the War. A remarkably active man, in 1989 he set off to Xanadu, where Kubla Khan had built his stately pleasure dome. Leslie got within 20 miles of the legendary site, in northern China, but Xanadu is an important base of the People’s Liberation Army and not accessible to casual visitors. It was probably much the same in Kubla Khan’s day. Those who have reached it report that the once-splendid dome is now a pile of rubble, a fate on which those responsible for the UK’s millennial dome might well ruminate. In the absence of a Coleridge (or a Motion) to pen its praises it might well vanish without trace. Some might say Amen to that.

Nothing loath, Leslie set off for Karakoram, taking a train to Ulan Bator and beyond. Then at the age of 84 he walked round Tibet. He was an assiduous participant in field trips of the Society. As a medical man, one of his early patients was a large lady who needed an operation lasting five hours. In the 1950s, such an operation was problematic, not to say hazardous, particularly the anaesthesia. As the operation progressed the anaesthetist became more and more concerned, repeatedly checking the circulation in the feet and the neck. Leslie, noticing his shuttling to and fro, remarked that whatever the problems at either end, “we’re all right in the middle!” This lady, still alive, produced a fine tribute to Leslie: “people like him should never die”.

One of our Fellows, James Clery, obtained his B.Sc. in environmental biology from the University of Reading before gaining his M.Sc. in forensic science at the University



of Strathclyde. Thereafter, he worked at the Medical Examiners Office, Forensic Biology Dept. NYC. James is now a self-funded student at Rhodes University, Grahamstown, South Africa, where he is studying for his Ph.D. in forensic entomology: the first such recognised Ph.D. in the world. In order to continue to do research, and keep food on the table, he offers his time and effort to aid in any overseas research endeavours by being available to personally supply requested animal or plant material (with restrictions on time available, location and season). Situated in the Eastern Cape, he occasionally has the opportunity to go further afield. Please contact James at [g00c3405@campus.ru.ac.za](mailto:g00c3405@campus.ru.ac.za) for any further information, and check out [www.forensicentomology.com](http://www.forensicentomology.com) for more information on forensic entomology.

JOHN MARSDEN

---

## Picture Quiz

The April Picture Quiz 17(2):19, featured Samuel Stevens who was born in London on 11 August 1817. After his initial education he entered art school with the aspiration of becoming an artist. Unfortunately, a severe illness compelled him to abandon his intentions and, around 1840, he entered into partnership with his elder brother John Stevens who ran a well-known auctioneering establishment in Covent Garden. Eight years later, in early 1848, he parted from his brother in order to establish a new natural history agency in nearby Bloomsbury Street (no. 24).

On the death of his brother in 1859 he took charge of the auction house on behalf of his sister-in-law while still continuing to run his own agency. Thus, by the time Bates and Wallace were about to start for the Amazon, Samuel Stevens' agency was already established.

In Spring 1848 Bates and Wallace met in London to study the collections of tropical insects housed in the British Museum. The Keeper not only promised to buy rare insects from them but explained how it might be possible to do so via Samuel Stevens' nearby agency. This association with the reception and distribution of the Bates and Wallace, and other important collections, made Stevens famous as well as bringing considerable financial advantage to the itinerant explorers.

Subsequently, Stevens again acted as Wallace's agent during the latter's travels in the Malay archipelago, storing material that Wallace intended for his private collection and attending to the distribution of material reserved by Wallace for other collectors. In 1867 Stevens sold the business to a Mr Higgins who not only acquired the residues of the many collections that had passed through Stevens' hands but, most importantly, all the then unsold duplicates from Wallace's travels.



On retirement in 1867 Stevens went to live in Upper Norwood where he devoted himself to painting in water-colours, an accomplishment at which it is said he was highly skilled, gardening and fishing.

Stevens was himself a skilled and successful entomologist who formed extensive and important collections of British Coleoptera and Lepidoptera. He was an original member (elected 6 November 1837) and mainstay of the Entomological Society (Treasurer 1853–1873 and Vice-President 1885). He was also for many years a member of the Entomological Club which on a critical occasion he saved from extinction. He was elected a Fellow of the Linnean Society on 3 December 1850.

*Bates, Wallace, Darwin and Stevens*

In 1847, after less than three months collecting in Brazil, Bates and Wallace returned to Pará to dispatch their joint consignment of insects to Stevens in London. It was said to contain 3,635 specimens, including 450 species of beetle and 533 specimens of Lepidoptera. Bates and Wallace then parted company and from that point on sent back individual collections to Stevens.

In 1848, Wallace records the dispatch of 284 saleable specimens of birds and a little later a consignment of monkey skins, together with toucans and jacamars (*Galbula*). Meanwhile, in August of that year Bates and Wallace sent a box of plants to William Hooker at Kew with a note:

“We hope you will find the contents of the box worth £10 and the freight.”

The following year Stevens, on Wallace’s instruction, advanced the latter’s brother, Herbert, the money for his passage to Brazil. Although the Wallace brothers initially collected together, they soon parted company and began collecting and exploring separately. Two years later Wallace re-embarked for home, together with his entire collection which consisted of numerous cases of mounted and labelled insects comprising hundreds of new species, numerous bird skins and a number of live animals such as parrots, parakeets, monkeys and a wild dog! Unfortunately, the *Helen* caught fire and was lost. Wallace escaped with a few drawings of fishes and palm trees and the clothes he stood up in (the coat is now in the NHM while the palm trees are in the Linnean Society). On his arrival in London at the end of 1852, Stevens took him to the nearest ready-made clothes shop, and then to his own personal tailor to be measured for a new suit. Finally he took him to his own mother’s house in Kennington where he apparently was well provided for and restored to health and vigour!

Over the intervening five years Stevens sold his small bird collection to private collectors and disposed of the initial collection made by himself and Bates. The amount of money made by Stevens can be deduced from an entry in Bates’ diary for 1850:

“I have taken 7,553 specimens of insect which at 4d each will bring £125-17-8d and my expenses have been £67-10s. Stevens’ commission is 20% and for remitting money with freight of boxes etc about 5% thus leaving the produce of my collections £94-9s. I then gain only £26-19s in one year eight months!”

In Wallace’s case, in addition to the sale of the collection from Pará and the small bird collection, Stevens arranged for Wallace to receive £150 from the insurance on the collections that had been lost in the shipwreck. Stevens also exhibited some specimens

at the Entomological Society. Moreover, he had arranged with the Zoological Society for Wallace's paper on the Umbrella Bird to be read in 1850. It is said that this paper did much to establish Wallace as a competent collector/ traveller – an image later enhanced by Wallace himself when he read a further paper to the Zoological Society: "On the monkeys of the Amazon" 1852 and by two further papers to the Entomological Society on "The butterflies of the Amazon Valley" (1852–53) and "On the Insects used as food by the Indians of the Amazon" (1853). He also had a paper published in the *Zoologist* in 1853 "On the habit of the Hesperidae". Nevertheless, it was the paper to the Royal Geographical Society in 1853 "On the Rio Negro" which finally established his credentials as an investigator of Natural History. His subsequent application to that society for a Government travel grant to visit the Malayan Archipelago had the backing of Sir Roderick Murchison and was endorsed "on 23rd July 1853 for the Earl of Clarendon" – the then Foreign Secretary.

Thus, in March 1854 Wallace and his 16-year old assistant Charles Allen finally left England for the Malay Archipelago after several weeks delay due to the outbreak of the Crimean War. They went by the overland route to Suez where they embarked again on the *Bengal*, which took them via Aden to Singapore, where they arrived on 20 April 1854. His subsequent expedition to the Malayan Archipelago between 1854 and 1861 is recorded in a notebook that he opened from either end, now in the possession of the Linnean Society. Included at one end is a record of the consignments he made to Stevens which extends to just 56 pages.

Wallace's collecting was devoted primarily to insects, of which he obtained some 110,000 specimens, and birds – around 8,050 specimens. He also collected mammals and other vertebrates (410 specimens), marine and land shells (7,500 specimens) and plants, including living orchids which he dispatched in casks. He formed extensive personal collections of Coleoptera, Lepidoptera and birds, distinguishing between these and specimens intended for sale. Indeed, his private collections were intended to provide material for working out the geographical distribution of animals and to throw light on variation.

Stevens, of course, did not sell only to those who could inspect his stock at 24 Bloomsbury Street, but offered material as it became available to his wide circle of collectors in Europe. For example, he was asking 40/- a pair for *Ornithoptera aruana* and 50/- for a pair of *Batocera wallacei*, while the nearby BM purchased 7,758 insects, or about 7% of Wallace's collection. The museum also purchased 985 bird specimens (approximately 12% of those collected).

Meanwhile, Darwin, in order to obtain information on domestication, had sent a memorandum to various people including Stevens whom he knew to be Wallace's and Bates' agent. Stevens dutifully communicated his memorandum to both collectors.

C.D. Memorandum Dec. 1855

"Skins. Any domestic breed or race, of Poultry, Pigeons, Rabbits, Cats and even dogs, if not too large, which has been bred for many generations in any little visited region, would be of great value, or even if recently imported from any unfrequented region. It w<sup>d</sup>. be necessary to notice & select a characteristic specimen of adult animal of any breed. In Poultry – both cock & hen & especially the cock sh<sup>d</sup>. be procured. The whole humerus and femur, & as much as possible of the cranium sh<sup>d</sup>. be left in the skins. – Each specimen sh<sup>d</sup>.

be ticketed with native name, habitat & any procurable information. Specimens not bred for many generations in domestication of no value –”

In 1856 Wallace visited the islands of Bali and Lombok on his way to the Celebes. From there he sent a letter to Stevens informing him that his latest shipment included items for Darwin.

“The domestic duck var is for Mr. Darwin & he would perhaps like the jungle cock which is often domesticated here & is doubtless one of the originals of the domestic breed of poultry”

In 1862 Wallace visited Timor from whence he sent Darwin:

“a wild honeycomb – not quite perfect but the best I could get”  
(Wallace to Darwin 7 April 1862)

During this period (1854–1861) whilst Wallace was in the Malayan Archipelago, his line of communication was through Stevens who not only arranged for his letters to be published in the *Zoologist* and *Cottage Gardener*, but also arranged for material to be exhibited at the Entomological and Zoological Societies. Much more importantly, he sent on Wallace’s first great essay, written in February 1855, in Sarawak, entitled “On the Law which has regulated the Introduction of New Species” to the editor of the *Annals and Magazine of Natural History* who published it in September 1855.

Although Stevens wrote to Wallace after this article had appeared saying that he had heard several naturalists expressing their regrets that he was theorising instead of collecting more facts, Darwin told him that not only had his paper been noticed but that his (Darwin’s) attention had been specially called to it by both Lyell and Blyth!

This intimate contact between Stevens the agent and Wallace the naturalist was clearly understood by Darwin, who on 21 December 1859, in a letter to Hooker wrote:

“I think the copy of your Introduction for Wallace had better go to Stevens.”

The Introduction referred to was Hooker’s 1859 paper “On the flora of Australia, its origin, affinities and distribution; being an introductory essay on the Flora of Tasmania”.

When *The Origin* was published earlier in the year, naturally Darwin sent Wallace’s copy to Stevens who forwarded it to Ternate where Wallace received it in December 1860. The following year saw Wallace send his final consignment of material to Stevens from Macassar. Included among the thousands of insects were several skins of Birds of Paradise. Wallace records that for the more exotic butterflies and skins, Stevens secured over £1000!

On 20 January 1862 Wallace finally left Singapore for England, taking with him his remaining collections, which included two live Birds of Paradise and three live lorries.

Wallace recounts that the total proceeds of his Malayan collections far exceeded his expectations and that they had been wisely invested by Stevens in Indian Railways and were yielding over £300 per annum. Furthermore, he noted, if the need arose he still had his reserve or private collection which he estimated if sold would bring him a further £200–300 per year.





Clue: Like Linneaus he classified minerals as well as plants and animals.

Bates and Wallace had brought fame to Stevens who, in return, had successfully sold their collections and invested the proceeds, making them, for the time being, financially secure.

#### ACKNOWLEDGEMENTS

I am extremely grateful to Dr Donald Baker for allowing me to read his paper entitled "Alfred Wallace's record of his consignments to Samuel Stevens 1854–1861." (To be published in *Zool. Meded.*). This contained a potted biography of Stevens, on which I have drawn heavily.

B.G. GARDINER

#### REFERENCES

- STEVENS, S. 1850. On the Umbrella bird (*Cephalopterus ornatus*), "Ueramimbe", L.G. by Alfred R. Wallace. COMMUNICATED by Mr S. Stevens. *Proc. Zool. Soc. Lond.* 206-207.
- STEVENS, S. 1857. A box of Lepidoptera taken at Sarawak by Mr Wallace. *Trans. R. Ent. Soc. Lond.* 38.
- STEVENS, S. 1859. Exhibition of two beautiful new butterflies collected by Mr Wallace in the island of Batrachian. *Proc. Zool. Soc. Lond.* 351.
- STEVENS, S. 1860. Exhibition of a series of birds and lepidopterous insects contained in Mr Wallace's recent collections from the island of Batrachian. *Proc. Zool. Soc. Lond.* 1.
- STEVENS, S. 1861. Exhibition of birds forwarded by Mr Wallace from Mysol and Waigion. *Proc. Zool. Soc. Lond.* 306.

## Correspondence

2.5.2001

Orchard House, Dorchester

Dear Editor

The portrait on p 19 of *The Linnean* 17(2) is, I believe, Samuel Stevens (1817–1899). He was an original member of the Entomological Society (now Royal) and Treasurer from 1853 to 1873, as well as being FLS. Stevens was a considerable benefactor to entomology in the latter half of the 19th century, though his own contribution to science was modest.

Stevens studied to be an artist, but illness forced him to abandon his intention and he became an auctioneer before he established, in 1848, the natural history agency which provides the *Linnean's* clue. As well as Wallace he acted for Bates and many other collectors.

H.T. Stainton described Stevens in the *Entomologist's Weekly Intelligencer* in one of his imaginary scenes at a meeting of the Entomological Society, also set out in Michael Salmon's entertaining *The Aurelian Legacy* (2000) p. 42 '..... on the other side of the President you will see a gentleman very bald and with a careworn expression of countenance, who every now and then has some money handed to him, and he sends a slip of paper across the table in exchange; that is Mr. Stevens, the Treasurer; it is a very anxious post that of Treasurer to a learned body.' A sentiment Gren Lucas may agree with!

In the *Linnean's* portrait Stevens holds one of the Stag beetles (Lucanidae) (another clue?), doubtless one of the species represented in the important world-wide collection recently acquired by The Natural History Museum.

Yours sincerely

M.G. MORRIS

2.5.2001

Datchet, Slough, Berks

Dear Professor Gardiner

Surely if the photograph on p 19 of *The Linnean* is of Wallace's agent in London it has to be Samuel Stevens who acted as agent for both Bates and Wallace. Stephens was active in the Entomological Society being treasurer from 1853-72, and vice president in 1885.

Regarding Wallace, some years ago I bought a book\* in a secondhand bookshop which was written by an author who briefly mentions meeting Wallace when the latter was about 84, and the author was a small boy. I enclose a photocopy of this scintilla of Wallace's lore in case of interest. It may be well known to scholars like Peter Raby. If not, you might consider it worth quoting a brief extract in *The Linnean*. Unfortunately it looks as if I shall not be able to attend the Raby meeting on May 9th.

With best wishes

Yours sincerely

C.E. DYTE

\* The book in question is *Pilgrim's Pleasure* by Alan Ivimey, 1959: Garden City Press. I shall quote from it in a future *Linnean* Ed.

7.5.2001

"Gwylfa", Flintshire CH8 8NQ

Dear Prof. Gardiner

It was with a sense of gratitude, tinged with nostalgia that I read Laurence Cook's obituary of Cyril Astley Clarke in the April 2001 issue of *The Linnean*.

I first met Cyril Clarke in 1961 when I was a young biology teacher at Holywell Grammar School in Flintshire. He and Dr. (Prof.) P.M. Sheppard were starting their investigations on the relative frequencies of the two forms of the Peppered Moth *Biston betularia*, and wanted someone to collect samples in our part of North Wales, for comparison with Liverpool and the Wirral.

We collaborated for four years and several of the senior pupils became enthusiastically involved in the project. At the time we had a flourishing Natural History Society in the school and Drs Clarke and Sheppard visited us on more than one occasion to share their expertise and enthusiasm.

We used two ways of catching the moths, firstly with a light (UV) trap and secondly with an 'assembly trap' in which live, unmated female moths were placed to attract the males. Cyril Clarke used to send these live moths to us by post, and I still treasure one letter received in May 1963. After mentioning some minor details, he goes on:

"Could you let me have a list of addresses of boys who want virgin females for their traps as they are just starting to emerge here. Will you want females as well, and if so would you rather I sent them to your home or to the school?"

All that was in the 1960's. Some 20 years later we repeated the exercise, and I did some more sampling in Flintshire. The results made interesting reading.

It was a measure of Cyril Clarke's friendly personality that in 1985 he kindly invited me to be a co-author of one of his many papers in the *Biological Journal of the Linnean Society*. It was a privilege to have known him.

Yours sincerely

GORONWY WYNNE

---

Science and Technology Studies,  
University College London,  
E-mail: J.Cain@ucl.ac.uk

Dear Professor Gardiner

### **New evidence on Dobzhansky's 1936 'Jesup' lectures**

Who says nothing exciting ever happens in historical research? This letter reports a recent important find regarding the population geneticist, Theodosius Dobzhansky, and his ground-breaking 1937 book, *Genetics and the Origin of Species*.

Most historians assume (a) that Dobzhansky (1937) began as a series of 'Jesup lectures,' sponsored by the Department of Zoology at Columbia University, in 1936, and (b) that from the start of this project, Dobzhansky had been told he could produce a book for the Columbia Biological Series (CBS) (e.g. Provine, 1994). In a forthcoming essay on the CBS and Jesup lectures, I claim these connections to the CBS and Jesup

lectures came *after, not before*, Dobzhansky delivered his famous Columbia lectures in October and November 1936 (Cain, in press). My thesis is that Dobzhansky gave his lectures and signed a book contract thinking this was to be a one-off text in evolutionary genetics. Afterward, his Columbia sponsors had the idea of reviving the CBS and Jesup lectures; they then back-dated this revival to include Dobzhansky's work.

My evidence is rather thin: a letter dated 18 May 1937 from Leslie Clarence Dunn (Department of Zoology at Columbia University) to Dobzhansky. Written *six months after* Dobzhansky's Columbia lectures – as Dunn was undertaking a final editorial check of Dobzhansky's book manuscript – this letter shows Dunn presenting a plan as newly devised:

“At a department staff meeting recently we discussed whether this [book manuscript] would not be a good beginning for the new Columbia Biological Series. This was a rather famous series in the old days, ... It has been in abeyance for some twenty years or more, and I think it would be a good plan to revive it and put it on a modern basis. The Press will probably accept this. We hope also to get an annual lectureship established and to publish the lectures in this series each year. As Number One man in the series, whom would you suggest for future lecturers?”<sup>1</sup>

This thesis about back-dating contradicts a series of oral histories by participants, some institutional records at Columbia, and a great many statements by historians (myself included).<sup>2</sup> Cautious in setting this evidence against what seemed a solid conclusion to the contrary, I initially qualified my claim and suggested more evidence was needed to decide the issue one way or another.

I can now report that additional archival research verifies this back-dating thesis and substantially clarifies the relevant chronology.

In May 1937, Dunn was reading Dobzhansky's book manuscript before sending it to Columbia University Press (Dobzhansky signed a contract with the Press in December 1936). It was at this time that he had the idea to revive the CBS book series and to link it with a revival of the Jesup lectures. Both had been extant several decades before, but had not been produced since 1910. Dunn wrote to Dobzhansky expressing this idea on 18 May 1937 in the letter excerpted above. A week later – probably after Dobzhansky agreed – Dunn wrote to Columbia University president Nicholas Butler seeking permission to initiate his plan. To capture his rationale, this letter is here quoted nearly in full:

“The present members of the Department of Zoology are anxious to preserve and extend the notable tradition established by their predecessors in this department. The lectures given by Osborn, Wilson and Morgan and the leaders of biological thought who were invited to lecture at the University influenced not only those who heard them but, when published in the [CBS], they helped establish the reputation of the department and greatly extend the influence of the University. The series of books, ... became famous not only because they described the actions on the advancing front of biological knowledge of the

1 Dunn to Dobzhansky, 18 May 1937, in Dunn Papers, folder: “Dobzhansky 1936–1937.” Dunn Papers are deposited in the American Philosophical Society Library, Philadelphia, PA, USA.

2 Oral histories from Dobzhansky and Dunn were produced by the Columbia Oral History Project. These are excerpted in Provine (1994). Institutional records (e.g. press releases for the Jesup lectures by Columbia University) are available in the Columbia University Archives, New York, NY, USA.



time, but also because they laid a sound scientific and philosophical basis for future work and thereby gained a longer life.

Biology has changed greatly since this series of books and lectures on which they were based were discontinued, and we feel that it is time to take stock of this progress and to begin a new series of lectures and books which will summarize the newer knowledge and its bearing on the fundamental problems of biology. We made a beginning in this direction last year when Professor Dobzhansky gave us a series of eight lectures on "Genetics and the Origin of Species." These were very successful and attracted biologists from the American Museum, the Botanic Gardens and many neighboring institutions. The University Press is to publish this book, and we feel it would be very fitting to initiate with it a new Columbia Biological Series. It happens that the first book in the old series, by Osborn [1894], dealt with the historical aspects of evolution, then the dominant method of approach. The new book considers the same problems from the modern viewpoint of experimental analysis.

We propose, therefore, that a new series of lectureships be established, or that the Jessup [sic] Lectureship be reconstituted. The incumbent would be chosen from among those who have made significant contributions to modern biology. He should, however, also be able to summarize the status of some general problem in such a way as to be intelligible to students of biology generally. We propose that he be invited to give about six lectures, preferably in the autumn; that a fee be given which would be sufficient to cover his travel expenses, his expenses here and during preparation of the lectures, and that this be in lieu of royalties accruing to the Press after publication of the book. We should estimate that the amount required would average about eight hundred to one thousand dollars a year. The University would then own the manuscript, and royalties above cost of publication would accrue to the lectureship fund.

Although the proposed lectureship would, it is hoped, embrace a wider field than zoology alone, administration would be simplified if nominations were to be made by the Department of Zoology after consultation with other interested departments in the Division of Biology. If this Division should gain some corporate unity, then nomination might come from the Division instead of from the Department."<sup>1</sup>

This letter demonstrates conclusively that the CBS and Jesup lectures revivals were not in place until well after Dobzhansky's Columbia lectures in October and November 1936. Rather than a one-off title, *Genetics and the origin of species* was set to become CBS volume 11 only in May 1937. First copies appeared in middle October 1937, and there is no reference to the Jesup lectures in the text. On seeing the first copies, Dobzhansky expressed his thanks to Dunn. "Frankly, I am greatly pleased with having this book out, and since it is due to you alone that it has been written and published, I feel that I owe you a large debt of gratitude."<sup>2</sup>

- 
- 1 26 May 1937, Dunn to President Nicholas Murray Butler and reply 27 May 1937. Butler to Dunn in Dunn Papers, folder "Columbia University. Fakenenthal, F.D. 1929-1945". The language of this letter parallels Dunn's preface to Dobzhansky (1937).
  - 2 15 Oct 1937, Dobzhansky to Dunn in Dunn Papers, folder: "Dobzhansky 1936-1937". Though pleased with the book, reportedly Dobzhansky was furious with the designer's error on the spine. In this stylised depiction of the mitotic spindle, the designer reversed the orientation of the chromosomes (Cain, in press).

This process of back-dating may seem a trivial point. In fact, it forces historians to shift their understanding of the immediate origins of the CBS revival away from the American proponents of a synthetic theory of evolution and toward manoeuvres within the zoology department at Columbia University to assert its importance as managers and promoters of cutting edges in the life sciences. In other words, these revivals tell us far more about Dunn and his colleagues than they do about Dobzhansky and other evolutionists. By implication, this new evidence provides another nail in the coffin of standard narratives about the synthesis period in evolutionary studies. In an extended discussion of this new data, now under review, I propose a detailed chronology and interpretative context for this important point.

This research was undertaken with support of the Royal Society. Thanks to the American Philosophical Society for permission to reproduce extracts of these letters.

Sincerely,  
JOE CAIN

## REFERENCES

- CAIN J. in press. The Columbia Biological Series, 1894–1974: a bibliographic note. *Archives of Natural History*.
- DOBZHANSKY T.G. 1937. *Genetics and the origin of species*. New York: Columbia University Press.
- OSBORN H.F. 1894. *From the Greeks to Darwin: an outline of the development of the evolution idea*. New York and London: Macmillan and Co.
- PROVINE W. 1994. The origin of Dobzhansky's *Genetics and the origin of species*. In: Adams, M. eds. *The evolution of Theodosius Dobzhansky*. Princeton, NJ: Princeton University Press. 99–114.

---

## From the Archives

### *Kaempferia*, the painting by G.D. Ehret in the Linnean Society

Hanging in the main reading-room of the library, there is a painting of the small herbaceous plant, *Kaempferia* [Fig. 1], by the great botanical artist George Dionysius Ehret (1708–1770). It was donated to the Society in the 1970s by the medieval historian, Dame Joan Evans (1893–1977), D.Litt. FSA. The painting, dated 1740, is in body-colour on vellum. It has recently undergone conservation and has been reframed. In comparison with his better known, later, paintings, this is not one of Ehret's more spectacular works and may even strike the viewer as rather dull. None the less, the subject and the painting have singularly interesting histories.

A portrait of Ehret [Fig. 2] by the artist, George James (c. 1735–1795), hangs in our hall. It was bequeathed to the Society in 1941 by Dame Joan's half-brother, Sir Arthur Evans (1851–1941) FRS, FSA, the archaeologist of Knossos, Crete. He was a direct descendant of Ehret's, his great grand-mother being Ehret's grand-daughter. The portrait shows Ehret, aged 59, balding, but in robust health, studying a *Cestrum diurnum* (Day Jessamine), the flower he is about to draw.

Ehret was born in Heidelberg, Germany, the son of a gardener. He also began life as a gardener, drawing flowers only as a hobby. For several years, he travelled around

Germany, earning a living as he went. In 1733, he met Christoph Jacob Trew (1695–1769), a physician and botanist of Nuremberg. Trew showed Ehret how to dissect flowers and taught him the importance, in botanical painting as opposed to flower painting, of including the details of the sexual parts (pistil, stamens, etc.). This feature distinguishes his work as foremost in the field of botanical art at that period. In 1736, Ehret published an engraving of a 'Tabella' showing Linneaus's system of plant classification based on these characteristics. Ehret's splendid and accurate paintings are still much admired, both for their beauty as well as for their botanical accuracy. He generally added the full name of the subject and signed and dated his work. For the rest of his life, he would send Trew paintings of unusual plants. Many of these were engraved to illustrate Trew's books, such as *Plantae Selectae*, 1750–1773, 10 dec., and *Hortus Nitidissimus*, 1758–1786, 3 vols.



Figure 1. *Kaempferia*, by G.D. Ehret, 1740;  
body-colour on vellum.

In 1735, Ehret came to London and settled near the Chelsea Physic Garden, where Philip Miller (1691–1771) was Curator. Three years later, Ehret married Susanna Kennet, the sister of Miller's wife. To help him to establish himself as a botanical artist and teacher, Miller introduced him to many influential personages as potential patrons, the first of whom was Sir Hans Sloane, the owner of the Manor of Chelsea, in which the Physic Garden was situated.

Sir Hans Sloane (1660–1751) MD, FRS, physician and botanist, had bought the manor in 1712. This included the Garden, where the Apothecaries of London had been growing their samples since 1673. He ensured its continued use and the research into new medicinal plants under Miller. It is fitting that both their monuments are near by, in the churchyard of Chelsea Old Church. There is a large urn under an ornamental canopy for Sloane; a slender obelisk surmounted by a smaller urn for Miller. This monument was erected in 1815, jointly by the Linnean Society and the Royal Horticultural Society. Ehret was buried in the churchyard, but his grave cannot now be found, having been destroyed by bombing in World War II.

Ehret spent the spring of 1736 in Holland. At Hartecamp, near Haarlem, he met Linnaeus, at that time superintendent of the gardens of exotic plants belonging to George Clifford (1685–1760), a rich banker of English extraction and director of the Dutch East India Company. Ehret was always especially interested in rare and newly-introduced plants and, with this collection, he was able to indulge his passion. Many of the drawings done at this time were engraved to illustrate Linnaeus's *Hortus Cliffortianus*, 1737 [1738], although the *Kaempferia* (Tab. III) in this volume is by another artist. It depicts a young plant; older specimens have round leaves.

The *Kaempferia* in the library is signed 'G.D. Ehret' and dated 1740 [see Fig. 1]. It is a small specimen growing in a large terracotta pot, across which the name 'KAEMPFERIA' is spelt out; below is the reference, 'Hort. Cliff. p.2. sp.1'. It has two white flowers with purple centres, set in the middle of a circle of dark-green, ribbed leaves. These stemless plants are easy to grow in a rich loam, needing only frequent watering in the summer and the heat of a greenhouse in the winter, when they lose their leaves. The flowers have a scent similar to green ginger. They do not set seed in this country, but the plant can be propagated by root cuttings. The name honours a German physician, Engelbert Kaempfer (1651–1716). During the years 1683 to 1689, he made an incredible journey through Russia and Persia to India and the Dutch East Indies. In 1690, he went on to Japan, undaunted by the fact that, at that time, Japan was closed to all foreigners, with the exception of a few Chinese and Dutch traders.

Kaempfer was born in Lemgo, in the principality of Lippe, Westphalia, north-west Germany. His father, Johannes Kemper, was the Lutheran pastor there. The family name was 'Kemper', but Engelbert spelt his surname 'Kempfer', or 'Kampffer', as well as 'Kaempfer', the form now universally adopted. His Japanese *han* (signature seal) is transliterated as *Ken-pe-ru*, very aptly meaning: 'for the courageous, there is nothing impossible', the same as his Latin motto: '*Virtute nihil invium*'.

Kaempfer began his career by travelling extensively in northern Europe, studying a wide variety of subjects, including medicine and languages. In 1683, he became Secretary to a Swedish legation sent by the court to explore overland trade routes, going first to the Russian Court in Moscow and then on to the Persian Court at Isfahan. From the outset, Kaempfer kept detailed diaries of his journeys, meticulously recording everything about each place – trade, industry, religion, government, food, clothing, medicine, plants and animals, etc. He was an excellent draughtsman, sketching people going about their business, their tools, the flora and the landscape. He made detailed maps of the towns and plans of the chief buildings. He also collected such things as implements, manuscripts, clothing and plants.



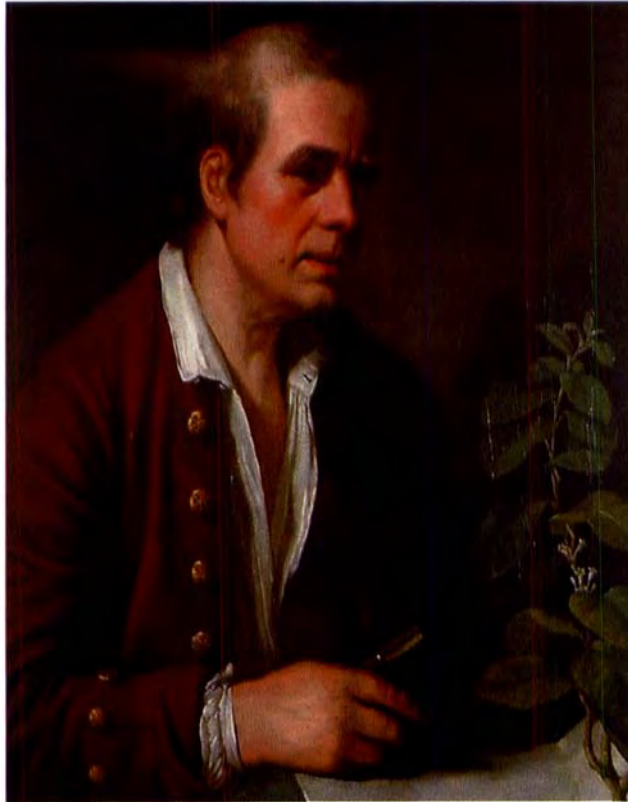


Figure 2. George Dionysius Ehret, portrait by George James, 1767; oil.

Because of the continued political unrest at home, instead of returning with the Swedes, Kaempfer obtained the appointment of senior surgeon with the Dutch East India Company. The following year, he travelled with their trade mission to the port of Gombrun [Bandar Abbas] on the Persian Gulf. On the way, the caravan stopped at the imposing ruins of Persepolis, burnt down by Alexander the Great in the 4th century BC. Kaempfer took the opportunity to survey the town and make sketches and plans; they were published in his *Amoenitates* and have proved of great historical value.

The climate at Gombrun, one of the hottest places on earth, was very debilitating and, after six months Kaempfer became so ill that he was finally given leave to recover in the cool mountains to the north. Nevertheless, it was nearly two years of further endurance before he was permitted to join a Dutch ship bound for India. To visit that country had been a long-standing ambition of his, but when he did arrive there, he was disappointed to find that he was only rarely able to go ashore, being obliged to remain on board, while the ship sailed slowly round the tip of India and circled Ceylon. It took over a year to make this voyage.

Still not wanting to return to war-torn Europe, Kaempfer decided to travel on with the Company to its administrative centre, Batavia [Djakarta]. After nearly a year there

without advancement, he heard that a vacancy had occurred in Japan, so he signed on as physician to the Dutch factory (trading-post), which had been set up in 1641 on the artificial island of Deshima in the Bay of Nagasaki. Here, he was to find himself confined for nearly three years. Thirty years earlier, all the Jesuit priests and the Portuguese traders had been expelled. The Japanese retained the Dutch traders, but kept them virtually imprisoned on the island. The country was not to be opened up again to Europeans until 1868, two hundred years into the future.

No information concerning Japan was allowed out on pain of death, yet Kaempfer continued to write his extensive notes, sketch and add to his collections, risking his own life and that of anyone who helped him. He only left the restrictions of Deshima twice. Every year, the Dutch Ambassador was obliged to undertake a diplomatic mission to the Japanese Court at Edo [Tokyo] and Kaempfer, as physician, accompanied him [Fig. 3], taking full advantage of these opportunities. Before he finally left for Amsterdam (via the Cape of Good Hope), in the autumn of 1692, this remarkable doctor was successful in smuggling out all his papers, plants and Japanese curiosities, a notable achievement in itself. After his death, many of these collections were purchased by Sir Hans Sloane. He had Kaempfer's account of Japan translated and published under the title: *The History of Japan* (1727–1728, 2 vols). When Sloane died, his personal books and collections became the nucleus of the British Library and Museum; Kaempfer's herbarium is now in the Natural History Museum.

On his return to Europe, after 26 years of travel, Kaempfer finally took his medical degree, in 1694, at Leiden. He then returned to Lemgo, where he became the personal physician to Friedrich Adolf, Count of Lippe (reigned 1694–1716). After 1700, Kaempfer experienced financial difficulties and lost his three children to smallpox. Between his domestic problems and his professional duties, Kaempfer found little time to sort through his accumulated material, only managing to publish one work: *Amoenitates Exoticae*, (1712, 5 parts). Part Five contains descriptions and illustrations of over 400 plants, including *Kaempferia*. It is a mature specimen and appears under its Japanese name, *Wanhom* [pp.901–903; tab. 902]. He notes that the plant was cultivated as a spice and aperient. This work was the first to bring Japanese flora to the notice of the Western world.

In the summer of 1740, Ehret chose a *Kaempferia* as one of 200 rare plants to be painted on vellum, plus four engravings, a commission from Sir Richard Mead (1675–1754) physician to the Royal family and patron of the arts and sciences [Fig.4]. Ehret noted that he was paid one guinea apiece for them and acknowledged that Mead would show the paintings to his influential friends with a view to obtaining more patrons for him. Ehret worked on this commission over the next ten years. At Mead's death, the whole collection of vellums (204 in total) and prints, made up into two volumes, was sold at auction.

In the archives of the Wellcome Institute for the History of Medicine, there is an alphabetical, numbered, catalogue of these works. It is hand-written and lists the plant names exactly as they appear on the paintings or prints. In addition, the English name is given and, occasionally, further notes, from which it can be inferred that these were made expressly for Mead, when the commission was complete [c.1752]. In any case, this list enables 'Mead' works to be identified as such today by the exact name, date and, sometimes number, still visible on the back.



Figure 3. 'Keh-pe-ru' travelling with his servant in Japan, 1691; engraving after Kaempfer's sketch; *The History of Japan*, 1728, v2, p430, tXXII.

It is possible that the Linnean Society's *Kaempferia* is a 'Mead' vellum. In the catalogue, it is no. 104 but when the vellum was removed from the old frame, the number was not there. What was there, however, was a sentence in ink, which reads: "By Dr. Kempfer, it is [called (illeg.)] Wanbon". This is taken from the citation added to item 104 in the Mead list. After giving the name and reference, as they appear on the terracotta pot [see Fig.1], it states:

"By Miller so called in honour to Dr. Kempfer a German Physician.. he says there's no English Name applied to this Plant. It is by some called Aro-Orchis; by others it is ranged with the Colchicum. In the Hortus Malabaricus it is intitled Katzjula-Kulengu, & by Dr. Kempfer it is called Wanbon".

This is written apparently in the same hand as the Mead list and includes the same spelling error – 'Wanbon' for 'Wanhom', sufficient evidence that this is, indeed, a 'Mead' vellum. Each of Ehret's paintings is a unique work and, although he may have painted the same subject more than once, he did not make copies. There is, in fact, another Ehret *Kaempferia*, dated 1756, in the collection of Lord Derby at Knowsley



Figure 4. Sir Richard Mead.  
Etching by J. Romney after a portrait by A. Ramsay.

Hall, although this is not a 'Mead' vellum. In that painting, Ehret shows the plant dwarfed by a great Atlas moth, hovering over it. These huge insects can attain a wing-span of 12 inches. They come from India, where the *Kaempferia* is also native.

*Kaempferia* belongs to the same family as ginger and turmeric. The genus was established by Linnaeus in *Genera Plantarum*, 1737, no.827, and is described and depicted in *Hortus Cliffortianus*, 1737 [1738], p.2, sp.1 [see p.00]. Johannes Burmann, (*Thesaurus Zeylanicum* 1737, p.33, t.13, f.1) termed it 'Aro-Orchis', which neatly describes the appearance of the plant – orchid-like flowers with arum-like leaves. It had mistakenly been considered to be *Colchicum indicum* by Paul Hermann, (*Musaeum Zeylanicum*, 1726, p.54), although that was later found to be a different genus altogether.



The specific name 'galenga' derives from the Malayan name, 'Katsjula-Kelengu', itemised, along with other names in various languages, by the Dutch nobleman, Hendrik Adriaan van Rheede tot Draakenstein (1639–1691), soldier and plant collector. He had joined the service of the Dutch East India Company in 1656. He became Commander of Malabar [SW Madras] (1670–1677) when he was stationed on the Coromandel coast as Inspector for the Company (1687–1689), it is possible that he met Kaempfer. In any event, in 1688, Kaempfer sent him his treatise on the Persian date palm. The treatise, *de Palma dactylifera*, was published as Part Four in his *Amoenitates* [pp.659–764], and it became the standard work on this plant and its culture.

In his multi-volume work: *Hortus Indicus Malabaricus* (1678–1703, 12 vols) van Rheede depicts a fine, mature, *Kaempferia*, giving a detailed description and also adding some of its many uses [vol.XI, p.81, t.41]. He asserts that the fleshy root tastes like cucumber, but sharper, and reports that the juice can be mixed with other ingredients and employed as a sweating agent to cool the blood. It relieves stomach-ache and flatulence. It serves as a salve for the eyes and is good as a hairwash. It seems that it was also used by Malayan and Javanese women to bring about abortions. In England, this panacea, known only in its dried form, was sold in the apothecaries' shops as a sudorific and carminative. As the 18th and 19th centuries advanced and more effective medicines became available, *Kaempferia*, as a drug, fell out of use, remaining only as an indoor, foliage, plant in Victorian conservatories. It can still be bought as a pot-plant from specialised nurseries for about £10.

The first species to come to this country was *K. galenga*, introduced in 1728 by Charles Du Bois (1656/57–1740) FRS, a Quaker clothing merchant of French descent, Treasurer of the English East India Company. Like his Dutch counterpart, he collected exotic plants to grow in his garden at Mitcham, Surrey. He supplied plants and seeds to botanists, gardeners and the nobility, both in this country and on the Continent. He was acquainted with both Sloane and Miller, so it seems likely that the Physic Garden would soon have acquired a specimen.

The specimen in the Linnean Society painting is quite unlike the young plant in Clifford's garden. Since Du Bois died in 1740, the year of Ehret's painting, it is unlikely that he would have visited the Mitcham garden at that time. It seems, therefore, that the plant was most probably growing in the Chelsea Physic Garden. Ehret seldom painted his subject in a pot and he usually added the dissections of the sexual parts. The reason for these anomalies appearing in this painting could be because this specimen was too precious to uproot or cut up. It may well be that this was the first time that this new introduction had flowered. Ehret always liked to record these occasions and Philip Miller, the Garden's Curator, would be hoping that the flowers would seed. Indeed, he delayed including this genus in his *Gardeners Dictionary* until the 6th edition of 1752, the source of the remarks quoted in the Mead list.

Although *Kaempferia* is no longer sold as a medicine, or a spice, and is now only rarely seen as a decorative indoor plant, one of the first specimens to flower in this country can still be seen on the walls of the Library. Its appearance was caught for all time by the greatest botanical artist of his age and the name celebrates a great physician and traveller.

## REFERENCES

- CALMANN, GERTA, 1977. *Ehret, Flower Painter Extraordinary*.  
EHRET, GEORGE DIONYSIUS, A Memoir... translated by E.S. Barton. *Proc. Linn. Soc.*, 1894-95: 41-58.  
HABERLAND, DETLEF, 1996. *Englebert Kaempfer, 1651-1717*.  
LE ROUGETEL, HAZEL, 1990. *The Chelsea Gardener, Philip Miller, 1691-1771*.  
SLATTER, ENID, 1985 (unpublished). Dr Richard Mead's Commission.
- 

## **Alphonse Laveran, discoverer of the malarial parasite and pioneer protozoologist**

This year, 2001, will see the 100th anniversary of the award of the first Nobel Prizes.

Alfred Nobel (1833-1896) was a Swedish chemist chiefly remembered for the prizes he founded. His personal fortune was based on his invention of dynamite which overcame the dangerous instability of nitroglycerine by absorbing it in kieselguhr, thereby releasing its great potential as an industrial explosive. Assessment of the Prize in Physiology or Medicine was carried out by a panel of experts at the Caroline Institute (Karolinska Institutet) in Stockholm.

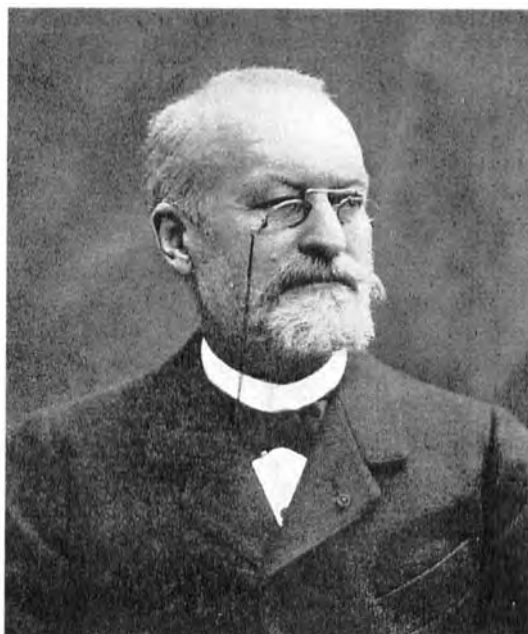
It was not unusual for candidates to be nominated several times after which they might, or might not, receive the accolade. Thus in 1901 there was a significant number of living, eminent scientists who shared the stature needed to make them worthy contenders, among them Robert Koch, Ivan Pavlov, Camillo Golgi, Ramón y Cajal, Ronald Ross and Alphonse Laveran.

The name of Laveran stands out on at least three counts; he was the first French national to win the Medicine Prize, largely on the basis of his discovery of the malarial parasite in 1880 (Laveran, 1880). Laveran's name was put forward in 1901 but the Prize was awarded to Professor Emil von Behring for his work on acquired immunity to bacterial toxins. At that time Laveran was working at the Pasteur Institute in Paris and his name was already widely known. In the unpublished minutes of the Nobel Committee one of its members, Professor Carl Sundberg (1907), recorded the discovery of the malarial parasite was certainly worthy of a Prize by virtue of its importance but that the work was "well known" by the end of the 1880s.

From the standpoint of zoological systematics, Laveran was a key figure in stimulating the study of parasites in man and other animals which led, as a matter of course, to the understanding of systematic relationships, particularly of the blood-borne parasites, such as the Sporozoa, and of others, such as the *Leishmania* species where a systemic infection but no blood-borne phase was known. The study of such species naturally had to address the questions of alternative vertebrate hosts and also the role of invertebrate vectors in the understanding of the life histories of such parasites.

It was almost an irony of fate that Ronald Ross won the Nobel Prize for his work on the transmission of the malarial parasite of birds 18 years after Laveran's discovery of the human malarial parasite. At the time the Nobel committee was constrained by the conditions of Nobel's will that the Prize should be awarded for work done in the previous year so that Laveran's discovery was deemed "old" by 1900. As time went on

the Committee increasingly accepted the need to recognise work that had led to the development of whole new areas of research, even though carried out well before the previous year.



Charles Louis Alphonse Laveran  
From: *Memoirs* by Ronald Ross, John Murray, London, 1923.

In fact Ronald Ross may well have provided the stimulus to a new view of the significance of Laveran's work when, in accepting the 1902 Prize he was generous enough to say in his Nobel speech ... "I will begin with the great name of Laveran who more than twenty years ago discovered the cause of malaria and created a new branch of science – Laveran, that true man of science who has honoured me by permitting me to call him my master..." (Ross, 1923).

Once again, in 1903, we find Laveran being nominated for the Prize but this time it was awarded to Professor Niels Finsen, the Danish dermatologist, for his work on the treatment of cutaneous tuberculosis. In 1904 Ivan Pavlov, also previously nominated in 1902 for his work on digestion, received the Prize. He had previously been passed over because, it was argued, his work was "already old" but clearly the Committee was now beginning to appreciate the importance of the founding of new, and productive, areas of research that were the stimulus to whole new areas of enquiry and understanding.

By 1905 the Nobel Committee was rearranging its perspectives and Robert Koch the great German bacteriologist was honoured for his work, although, it might be argued, he was really developing the fields already put in place by Louis Pasteur 40 years previously. In 1905 Laveran was still an "also-ran".

By 1906 Laveran was still being nominated and, from reading the minutes of the Committee, it was clear that he was now receiving the powerful advocacy of Professor

Carl Sundberg, an eminent Swedish bacteriologist. The name of Ronald Ross now crops up again since, as a Nobel Laureate himself, he was clearly canvassed for a nomination and the Committee wrote to him in September of 1905 for a suggestion. Ross did not reply until 4 months later but there is no obvious reason for the delay as Ross does not seem to have been away on one of his many consultations at the time. However it was a time when he was beginning to think of leaving his post at the Liverpool School of Tropical Medicine so he possibly had other things on his mind (Nye & Gibson, 1997). His promise to forward supporting material, "...writings of Dr Laveran made for his candidature for the Institute of France..." (Nobel Committee minutes, 1906), were probably scarcely necessary but Ross naturally was not to know that Laveran's name had been before the Committee for the preceding 5 years. However Ross expressed himself quite forcibly and his linking of Laveran's name with those of Pasteur, Koch and Lister could be interpreted as a reproach to the Committee for not having considered Laveran earlier. Sundberg picked up the point in his 12 pages of typed submission favouring Laveran for the 1906 Prize. In addition to reviewing extensively Laveran's malaria work, he emphasized the broader significance of his work as a pioneer in the whole area of protozoa as pathogenic organisms. Revealingly the submission was titled, "Work touching on the significance of protozoa as disease causing organisms". This subtle shift, which now took account of Laveran's extensive and more recent, research into, for example, trypanosomes and Leishmaniasis, got over the difficulty of basing the award purely on the 1880 discovery.

In the event, the 1906 award went jointly to Camillo Golgi and Santiago Ramón y Cajal for their work on neuroanatomy, although, interestingly enough Golgi had also done important work on malaria.

The year 1907 finally saw Laveran win the Nobel Prize. Sundberg was again a vigorous advocate but one detects also the support of the Chairman of the Committee, Count Mörner. At the risk of reading too much between the lines there is an impression of informal discussions between Committee members before the official and recorded their deliberations. There were four votes cast for Laveran and only one in favour of Christian Bohr's work on the physiology of respiration.

Laveran was a worthy winner. He was no one-shot discoverer who stumbled on a great discovery. His career was marked by steady industry, as a military doctor until the age of 50, and then as an energetic researcher and teacher until his final years in the Pasteur Institute and his death in 1922. When Ross linked Laveran's name with that of Pasteur it was a tribute to both of them.

#### ACKNOWLEDGEMENTS

My thanks to the office of the Nobel Committee, Karolinska Institutet, Stockholm, Sweden, and to Ann-Margreth Gustavsson for access to the Nobel Archives.

EDWIN R. NYE  
Hon Research Fellow, Dunedin School of Medicine  
University of Otago, New Zealand  
ted.nye@stonebow.otago.ac.nz

## REFERENCES

- LAVERAN A. Deuxième note relative à un nouveau parasite trouvé dans le sang des malades atteints de fièvres palustres: origine parasitaire des accidents de l'impaludisme. *Bulletin de l'Académie de Médecine*, v9 1880 Nobel archives, unpublished, 1901–1907.
- NYE E.R. & GIBSON M.E. 1997. *Ronald Ross, malariologist and polymath; a biography*, Macmillan, London.
- ROSS R. 1923. *Memoirs*, John Murray, London.

---

## The Best Laid Schemes Gang aft A'Gley: Retirement and other Plans of a Regius Professor of Botany, 1919–1925

### Part 2

#### Introduction

The Glasgow University Magazine, a weekly periodical published by students, on 3rd February 1909 included an article on W.H. Lang's appointment to the Chair of Cryptogamic Botany at Manchester University. It praised his prowess as a Lecturer, and his long service as Treasurer of the University Athletic Club. It described him by background and education to be 'a thorough Glasgow man .... we may firmly claim him as an out and out Gilmorehiller' (Gilmorehill is the locality of the University). The article concluded 'We congratulate Manchester University, not only because they have obtained a good man, but on the excellent sense they have shown in coming to where the good men grow – Glasgow ... Congratulations, from the students, professor, the GUM, on this occasion at least, voices the sentiments of the University'. Lang's own feelings on leaving the Botany Department were expressed in a note he sent to F.O. Bower when returning the Departmental keys later in the year – 'Thanks for all your kindness this fifteen years – I shall never have as good a slice of life again'. He confessed to being 'sick at heart to go out into a rude world which I do not know'.

Part 1 has described the pressures he was under as a protégé when professorial vacancies arose at Aberdeen, Oxford and Edinburgh. He always knew that the pending vacancy in the Glasgow Chair would be the 'last temptation'. He would after all be going home.

#### 4. The 'Last temptation': 1923–24

With all the interplay of events behind the scenes with the Aberdeen, Oxford and Edinburgh vacancies, there remained a common accord between Bower and Lang over the Glasgow Chair. As stated earlier, in December 1918 Lang had been reassured by the knowledge that any preliminary decisions on Bower's future lay some 2–3 years on. In July 1921 Lang wrote in reply to a letter from Bower '...Your hypothetical question is more difficult to answer – I trust the need for a decision will pass off and you will long control the fortunes of the Glasgow dept.' (47) He also stressed that any move from Manchester would have to be carefully considered... 'I should not of course wish to go elsewhere unless it was clear that I was wanted there, and that means my candidature would be formal rather than active'.

Matters seem to have quietened down following Lang's withdrawal from the Edinburgh selection process. In October 1922 it is evident that Bower was returning to the all important topic, as indicated in Lang's letter – 'Thanks for letting me know of the continuation of your sketch plans as to the future that are on the lines you talked to me about in Glasgow. I simply regard them as sketch plans for I shall be sorry for Glasgow when I hear that the date has been fixed' (48). However by the summer of 1923 the hints were fast becoming more concrete plans. These centred on retirement in 1924, when he would have completed 39 years of service. The date remained to be settled – whether it would be March 31st or September 30th. Lang, on hearing of the possibility of the earlier date being chosen, expressed his views in June 1923 – 'I decline to think of next Wednesday being your last end of summer session – but when the end comes what a splendid record of keen classes you will have to look back on & being as G-V used to say "merry and bright and throwing yourself about", galvanizing the class on dead days' (49). In the following August Lang again returned to the topic after visiting Glasgow as External Examiner – 'Yours was a private interrogation on an eventuality which has not yet arisen and I would prefer to have the question repeated when it actually arises and I should be able to indicate my position to Weiss. So far as I can judge nothing would arise here to affect this note but it is not fair to make it final till the matter is practical politics & various subsidiary questions can be inquired into. So I have underlined at present in this sense. What you wanted was the broad indication I have given. Meanwhile I cry "Long live and reign the present King"' (50). An attached note is in Bower's handwriting:

'so far as at present able to judge would accept if definitely invited or nominated: does not wish to run a candidature – but if this appears necessary might enter a formal application. Would wish to stipulate for an early supply of necessary research rooms to be added to the Dept. – or at least with such understanding'.

Lang's somewhat retiring nature and diffidence about his capacity for running a 'bigger show' has been seen in earlier applications. Glasgow, besides being his *alma mater*, probably came closer to his ideal of a Chair with some attendant administrative responsibilities. It was only with botanical controversies that he attained a forceful and more confident presentation by word and deed. However, Bower now began to apply more pressure, as can be seen in Lang's letter of May 1924 – 'I am sorry to hear that the question of your resignation is written so definitely, with a date'. His letter continued with the assurance that he had not disclosed Bower's plans to anyone else – 'but rumours seem to be in the air a little – anyway you know without my saying it at length how unthinkable the Glasgow department seems to be without your presence. So till it happens I shall play the affectionate ostrich – is there is any such combination!!' (51).

Lang's ostrich act was to be short-lived, as seen in a letter to Bower in early June 1924 – 'Just a line to say how sorry I am to learn from your note that crossed mine that the die is actually cast. Well anyway it has been a splendid long run and the University owes you a debt of gratitude for all that has resulted materially and scientifically for Botany at Glasgow. Your letter is marked private and you will perhaps let me know when the resignation is supposed to be known' (52). The 'die had been cast' on 4th June 1924 when Bower informed the Secretary of State for Scotland of his impending resignation, to take effect from 30th September next. He also sent a formal note to the



*William H. Lang*

Secretary of the University Court, who duly informed Bower that this was accepted as a formal intention of resignation upon which the Court could act. The Court could now itself inform the Secretary of State of the impending vacancy. These formalities had to be completed before the retirement could be made public and the post advertised. The Senate of the University acknowledged the announcement at its meeting on 19th June 1924 (53):

'The Senate heard with great regret that Professor Bower intended to retire at the end of the present Academical Year. The Principal stated that a fitting tribute to Professor Bower's Services would be submitted at a future meeting of the Senate'.

Whilst Lang had been circumspect regarding his discussions with Bower, he was aware of 'rumours in the air' These rumours seem to have crossed the Irish Sea where another senior botanist had become interested, H.H. Dixon at Trinity College Dublin. He wrote to Bower on 7th June 1924 thanking him for the explanation (in confidence) of the situation at Glasgow, and expressing his regret that Bower would be giving up teaching – '.. there were so few in teaching with important research programmes – Botany was at risk of being sidetracked, with limited and narrowing fields of study.' (54). Dixon was strongly attracted to the Glasgow Chair, not least because of the unsettled political climate in Ireland at the time. He was also well aware of Lang's interest in the vacancy. For both of them, however, the situation changed dramatically with a few days.



### 5. Matters now go 'In the Soup'.

On 10th June 1924 Lang wrote a hurried letter to Bower, in a very different vein from his previous one (55):

'As you say the terms of the new appointment seem to be "in the soup". You realised I know that what I said to you earlier was very explicitly based on no change in conditions. So it all goes "in the soup". I don't think I shall write and ask anything until the vacancy is clearly in the public press, if then. These problems are very disturbing'.

Bower had obtained some advance information on changes to be introduced into the conditions of employment of newly appointed professors. His was not the only impending resignation of a Regius Professor at Glasgow. Sir William MacEwen, Professor of Surgery, had also given notice of retirement after 32 years of service. A meeting of the University Court on 3rd July 1924 gave consideration to drafts of commissions received from the Scottish Office which were to be issued to the newly appointed Professors of Botany and Surgery, namely, that it would be compulsory for the professors to retire 'at the end of the academical year in which they became 65'. Henceforth for all such new appointments the '*ad vitas aut culpam*' ruling would no longer apply; it would remain in force for those professors in post who had been appointed under the older regime. Besides the ruling on the age of retirement, another decision was pending from the Privy Council and would be similarly instituted. The pension arrangements for the new appointees would be changed, and would henceforth involve contributions from both the professor and the University. These were the changes which Lang had described as leading to matters going 'in the soup'. As he stated to Bower in a letter dated 17 June 1924 – 'It looks as if this is the moment when the distinctive advantages of the Scottish Chairs are going' (56). Within 7 days his decision was made, as he explained to Bower (25th June). He had been involved in 'a prolonged and difficult balancing act'. The balance was a fine one – the attractions of returning to Glasgow against the material difficulties which would arise with the changed financial arrangements. Once again the Council of Manchester University had helped his decision making by improving his salary so that any such move was unnecessary, and there would be a positive financial gain in remaining Barker Professor. 'I can only come to the conclusion that I shall not apply for the Glasgow Chair but continue my work here... I do not feel that I am merely indulging a personal preference for compensated security but am making a reasonable decision on the factors that affect the remainder of my life and my botanical work. I hope that this decision will have your approval which you know I value highly. It ends a dream which we have both shared with varying intensities at different times, of my returning to Glasgow which bred me and to which I owe so much... On the general grounds of the interests of science I feel that there is much to be said for holding and possibly justifying a Research Chair such as this' (57).

Bower's disappointment can be imagined. Their discussions had included the possibility of Lang purchasing Bower's house at 1, St. John's Terrace, Hillhead, at the time an area which was more of an 'urban village' and within a short walking distance of the University campus. For all his disappointment, he did appreciate the essential point. Lang was a dedicated research man, still deep in his joint researches with Robert Kidston of Stirling (although the latter was to die suddenly within three weeks of

Lang's letter above whilst on a short visit to Wales). Whilst Lang was less keen on subjecting himself to the competitive candidature which would have been involved, had the employment conditions been satisfactory he would have been prepared to pursue such a course.

The official publication of Bower's retirement and the announcement of the vacancy brought the expected flood of letters of enquiry. H.H. Dixon soon learned of Lang's withdrawal and on 3rd July 1924 informed Bower that his application was ready. As with Lang, he was aware of the impending changes and equally concerned at their implications. Understandably so; in 1924 he was 55 years of age, and Lang 50. With any new pension arrangements he would have a shorter period of employment than Lang and his reduced pension contributions would ultimately lead to a much reduced pension when compared with the existing arrangements at Trinity College. He wrote to Bower on 5th July with the news that the Secretary of the University Court at Glasgow had sent a letter with the information that it was 'unlikely that Ordinance 32 on retirement would be superseded by Ordinance 33 before the appointment was made (58). Ordinance 33 was the one incorporating the new retirement age and the pension arrangements. Seemingly on this understanding his application was sent in and in due course he was appointed to the Regius Chair at Glasgow with all the formalities associated with a 'Crown Chair', excluding the Latin Essay which appointees to Chairs up to the beginning of the century had been required to read before the Senate. Bower's essay, '*De Somno Plantarum*' (On the Sleep of Plants) had been read and duly 'sustained' at the Senate meeting held on 12th May 1885. Bower would be satisfied that his successor was a distinguished scientist. There was difficulty over when Dixon could take up the appointment, and Bower agreed to 'stand in' during the 'interregnum'. But by early October 1924 the situation had undergone a dramatic change.

On 9th October 1924 Dixon wrote to Bower thanking him for agreeing to be a 'stand-in' during the 'interregnum' period. At the same time he expressed continued concern about the uncertainty surrounding the imposition of the new Ordinance. To attain a suitable pension would require a sizeable deduction from his salary, and he had written to the Principal seeking confirmation that his appointment would be under the Conditions of the earlier Ordinance (59). Within 24 hours all had changed. Dixon again wrote to Bower with the reply to hand from the Principal stating that the 65 retirement age ruling would be enforced on the new Regius Professor, and that he would be subject to 'any Ordinances which have been or may be made' with regard to pension arrangements (60). Dixon's letter also referred to a telegram he had sent to the Principal informing him that the conditions set on retirement presented 'insuperable difficulties', and with an offer from the Trinity College authorities to 'improve' his Chair he had decided not to leave Dublin. Bower had also received a similar telegram to that sent to the Principal. On receipt of the telegram the Principal, Sir Donald MacAlister, despatched a short note to Bower stating that surely the conditions had been known to Dixon before he applied, and ending 'What do we do now?' (61). But did Dixon know the conditions fully in the light of the letter he had received from the Secretary of the University Court? The letter stated that it was unlikely that the new Ordinance would be instituted before the appointment was made, but gave no hint of the possibility of retrospective enforcement. The ruling 'any Ordinances which have been or may be

made' came to the Principal directly from the Under Secretary of State, and clearly implied such a retrospective application. Dixon was unfortunately caught up in an ongoing state of affairs in which the momentum was being enforced by Governmental pressures. Our sympathy must surely lie with Dixon, involved in a series of events beyond the control of the University which was appointing him.

As was to be expected, Bower was shocked and saddened by the sudden turn of events. These effects found expression in a letter he wrote to Dixon (11th October), of which a rough draft remains (62). In this he immediately pointed out that Dixon, being professor designate, would have to formally resign via the Scottish Office and the University. Bower's concern was obvious – who now would be his successor. Senior candidates would have been deterred from proceeding farther with the appointment seemingly verified. With a possible restricted field the Secretary of State might act without reference to the University and choose from the list of unsuccessful candidates. His draft concludes:

'Painful to me – crumbling Dept. People congratulate me when I know the thing has gone wrong. Must be kept quiet until the resignation is accepted ... There will be some heated criticism when decision known – I not responsible'.

Bower, as with the Principal, did not fully appreciate Dixon's assumption based on the Secretary of the Court's letter although Dixon had told him of its contents. Both Bower and the Principal were deeply concerned that matters might be decided by the Secretary of State without them having any control over the situation. The official notification of the vacancy was announced on 6th November 1924 in a press release from the Scottish Office:

'The Scottish Office announces that Professor H.H. Dixon Sc.D., F.R.S. has intimated that for personal reasons he is unable to accept the appointment to the Regius Chair of Botany in the University of Glasgow. Steps will be taken in due course to make an appointment to the Chair.'

Bower was essentially a fair-minded person where personal problems of colleagues were concerned. Here he was struggling to maintain a balanced judgement. Agreeing to serve on during an 'interregnum' was one thing, but now it seemed likely that his actual retirement would be further postponed – and for how long? The University had agreed to pay him the difference between his pension and the salary he would have received in post.

In passing, there is one notable comment in his letter to Dixon of 11th November, namely, 'Compare 1884–85 – trouble in both cases from Dublin'. Here he was referring to the delay between Balfour's resignation from the Glasgow Chair in 1884 and his own appointment in 1885. In his autobiographical sketch published in 1938 he refers to the background events of the time as being 'by force of unusual circumstances never officially explained to me' (63). The 1884–5 Dublin problem was an attempt by Governmental sources to force Glasgow to accept the unpopular (in Dublin) J. McNab for the Botany Chair. McNab was then Professor of Botany in the Royal College of Science in Dublin. The Glasgow Senate had resisted the pressure aided by Sir Joseph Hooker and W.T. Thiselton-Dyer (2 *ibid.*). Bower had been too discreet to give the reason in his 1938 book although, as seen in the 1924 draft, he knew the details.

Meantime Lang had been kept fully informed of progress. In July 1924 he had written and whilst not commenting on the candidates for the Glasgow Chair, stated ‘..but Dixon is in class by himself and is I understand a candidate’ (64). In mid-October he wrote to Bower without knowledge of the true situation (65):

‘I know you will be relieved at having the appointment to the Chair made and hope that Dixon will be able to take up duties at no distant date to enable you to attend to your own affairs. I am afraid that I sadly and somewhat grimly echo your “sic transit gloria morphologie Glasguensis”. I know it will be welcomed by modern extremists on the other side’.

Whilst recognizing that Dixon was an appointee of considerable scientific standing there was mutual regret at the passing of the Glasgow morphological tradition.

Lang was quickly apprised of the changed situation; being a discreet individual he kept the news to himself. However, rumours were already ‘in the air’. As Lang commented to Bower (24th October) the supposedly concealed matter was already under discussion in Cambridge. His letter ended ‘there will clearly be a further delay. It is most trying for you with your general plans made’ (66).

#### 6. The Final Solution

A salient point had been made by Lang over the vacancy and the impending revised Ordinance in his correspondence with Bower, namely, the newly appointed professor would have to be relatively young in order to be able to balance pension contributions and income – someone close to 40 year of age (64 *ibid*). He then questioned who of the men in this age group would combine a sufficient scientific standing with the teaching experience up to the demand of the Glasgow classes, notably the sizeable annual intakes of first year medical students (Bower used to describe these lectures as ‘sporting events’). Lang listed some potential candidates, of which the first on the list was J.M.F. Drummond, who also happened to be one of Bower’s proteges.

Drummond, a Cambridge graduate, had joined the Glasgow department in 1909 on Lang’s appointment to the Barker Chair. Drummond came to Glasgow from lecturing at Armstrong College, Newcastle-upon-Tyne. At Glasgow he was to develop the teaching and research on plant physiology. Bower’s opinion of him was expressed in a testimonial when Drummond was contemplating applying for the Chair of Biology in the University of Western Australia, Perth (67):

‘A botanist of wide knowledge, a skilled experimenter, an expert in the field of plant physiology, a stimulating teacher and well versed in the fungi’.

In the event Drummond, not too happy with the concept of ‘Biology’, did not contest the vacancy. In 1915 he was commissioned in the Highland Light Infantry and thence saw active service in the Middle East and in France. He was demobilized in February 1919, returning to the Glasgow staff in the following April. In 1921 he was appointed Director of the Plant Breeding Station for Scotland at Corstorphine in Edinburgh. In 1924 he kept a close watch on the Glasgow succession. As he informed Bower (28th June 1924) he had had a long talk with Lang after the latter’s withdrawal. Lang had advised him to ‘put in’ for the Chair, and to be ready should there be a ‘hitch’ arising, seemingly a prescient observation. Lang was well familiar with the likely problems arising from the new Ordinance, and how they might affect Dixon. Whilst Drummond had thought any

such 'hitch' would be most unlikely, both he and Lang had agreed that in such an event, 'some by no means desirable candidate may slip in, with possibly unfortunate results for the Department' (a viewpoint which was at one with Bower's). Whilst Drummond did not consider his chances as being particularly strong – 'they have at least the negative merit of not being a bigotted [sic] specialist' (68). Drummond was determined to retain the morphological tradition and to develop new branches as opportunities permitted without unduly exaggerating any particular one. He was also keen to keep touch between the academic and applied sides of Botany, at least to try and prevent any further divergence between the two. His one big advantage would be that he 'knew the ropes in Glasgow fairly well'. His one concern – 'A feeble research record'.

In October 1924 with Dixon's withdrawal now public the 'hitch' had arrived after all. In reply to a letter from Bower, Drummond agreed to 'leave things alone' except in the improbable event of a public advertisement of the vacancy – 'I think I can count on you putting me first, and hope that some of the backers, who were naturally mostly Dixonians in the first instance, will take the same view!' (69)

It would seem that much had been going on behind the scenes, no doubt effectively managed by the combined efforts of Bower and the Principal, so ensuring some control over the situation. The strategy was clearly successful. On 8th January 1925 the minutes of the Senate Meeting recorded that the Secretary of State for Scotland had submitted the name of James Montague Frank Drummond B.A. 'to His Majesty regarding the vacant Professorship of Botany', and that the King had signified his approval. The minutes of the meeting on 29th January recorded that Drummond's Commission of Appointment had been read, that he had subscribed to the formal requirements, and then taken his seat as a member of the Senate. However the University Court minutes of 12th February 1925, whilst confirming the receipt of Drummond's Commission also recorded that his conditions of employment with the Scottish Society for Plant Breeding called for a three months' notice of leaving and so he would not be able to take up his appointment until 1st April 1925. Drummond was not taking any chances. Until the Glasgow appointment was confirmed he was not giving in his notice at Corstorphine – presumably he would meantime have got leave of absence from his Chair. The upshot was that Bower's retirement would now be delayed until 31st March 1925.

At the same Court meeting on 12th February permission was given for Bower to hold an 'At Home' in the Botany Department on 13th March 1925, a farewell party for staff and students. On the occasion the 16 students of the Senior Honours Class presented him with an illuminated address signed by each one of them (70). Both the Senate and Court duly recorded their appreciations of his long service, the former on 2nd October 1924 and the latter seven days later. As stated in the concluding sentences of the Court's appreciation:

'The University parts from Professor Bower with great regret, and trusts that, retiring as he does in good health and strength, he will find occasion to add still more to the valuable contributions he has already made to scientific knowledge, and to manifest his fruitful interest in the University and its welfare'.

More tangible expressions of appreciation were to follow. In 1925 the University awarded him an honorary LL.D., and in 1926 it commissioned his portrait to be painted by his cousin, the famous artist Sir William Orpen. The portrait now hangs in the Botany Library of the Bower Building.

With Drummond at last established in post, Lang expressed his views to Bower on 7th June 1925 (71):

'He has the great advantage of knowing the machine & being known in the University and Department. The doubtful question is obvious, Is it a stop on Glasgow being an active pioneer research centre or not? Here one is hopeful as to the effect of a changed environment but not so hopeful because of Drummond's temperament. I am very glad that it is a young man appointment, and if Glasgow was not going to give the weight to all round research with advertisement that was Robinson's case. I had sooner see Drummond's appointment than any other of the field that I surmise but do not know... Anyhow the Chair is really filled this time and in my opinion better than with the last choice because the interests of the Department will be the premier consideration with Drummond. You will be relieved to get it settled.'

Lang's reservations were over what Drummond himself called his 'feeble research record'. The Robinson mentioned was Lang's own Manchester protege who had a more extensive research output. A.W. Hill, now established as Director at Kew, expressed his view to Bower in a somewhat more barbed fashion on 3rd June 1925 (72);

'But you have raised the Glasgow Chair to such a pinnacle of eminence that the filling of it by a lesser light is a matter for regret'.

It had been a long haul but now at last actual retirement was imminent. His last day in the Glasgow Department was spent with C.W. Wardlaw, a young colleague and the last Assistant he had appointed. Wardlaw was to long remember the final leaving of the Botany Building Bower '...was in a musing but I would not say sad or exceptionally pensive frame of mind. He had the whole thing arranged and levelled in his mind; for he said something to the effect that he would take the train down to Ripon the next day and should be just in time to hear a fugue played in the Minster. It was all arranged with his usual order and competent good nature' (73). Ripon was his 'home' town in which his two unmarried elder sisters lived and his brother Herbert with his family. Herbert had twice served as Mayor of the town. Bower set up home with his two sisters at 2, The Crescent, in which he had a spacious study. Lang had commented (25th May 1925) 'I am sure that you will make the study at Ripon as fruitful as the 'one at St. John's Terrace' (74). His nephew Rodger, then a young Army Officer, remembered well his uncle's arrival, and whilst he was not surprised at the load of accompanying books, he was impressed by the large number of memoirs and reprints. (75)

Bower's last official duty for the University was to prepare, now as Emeritus Professor, a report for the Court on the Botany Department, 'its origin and contents, its present state and its future needs'. This was dated 12th July 1925 at Ripon. It runs to 12 sides of paper, 8 by 13 inches. The history of Botany at Glasgow up to and including his own time takes up about three quarters of the report. His feelings and the difficulties experienced on entering the University in 1885 are graphically described. John Buchan, who went up in 1892, described in his autobiography *Memory Hold the Door*

how its general aura then 'still smacked of the Middle Ages', a feeling echoed by Bower in his comments on the 'farmed Chair' principle on which he was appointed. As expected the struggle to obtain his Botany Building, a protracted business extending over some 15 years, is fully described (2 *ibid.*). Regarding 'future needs' he specified that there was need for more rooms for staff and visitors, and especially for laboratory accommodation for practical plant physiology, and suitable facilities for 'practical fungology'. The need for a Lectureship in this discipline was also stressed, '...for this is a branch which must certainly be developed in order to meet the demand for skilled fungologists both at home and in the dependencies of the Empire'. Increasing student numbers would also present problems for general laboratory usage.' He suggested the building of an annexe on vacant land nearby, to be joined to the main building by a bridge. (A laboratory for plant physiology was eventually built as an annexe in 1935.) His report concluded that, despite the deficiencies he had exposed, the Department was 'in a reasonably creditable position compared with anything of the same nature'.

It was to be a long and active retirement. Volume 1 of *The Ferns*, his magnum opus, had been published in 1923. Volume 2 followed in 1926 and Volume 3 in 1928, with most of the preparation of this last volume having been carried out at Ripon. *Plants and Man*, based on a series of articles which had appeared in the *Glasgow Herald*, was published in 1925. His textbook *Botany of the Living Plant* (1919) went through three further editions. *Size and Form in Plants* was published in 1930, and was the culmination of an interest which has its origins in the 1918–20 period. It is the one book over which he felt considerable disappointment at the somewhat negative reception it received. His last major work, *Primitive Land Plants* emerged in 1935 in his eightieth year. It contained his final views on the origins and evolution of the dominant sporophytic phase. It was not regarded solely as a revision of his 1908 *Origin of a Land Flora* but as a new work, as he explained in a letter to Lang – 'It is and was intended to be an Essay rather than a Textbook or Treatise and that sort of work allows a certain latitude of speculative morphology'. It must surely stand as a remarkable achievement for one so advanced in years. *Sixty Years of Botany in Britain* (1938) was his last book. As the name implies, it was a compendium of reminiscences, and may have been written at the suggestion of S. Williams of the Glasgow Department, who had been one of his last appointments to a Lectureship.

Activities continued in other fields. His Presidency of the Royal Society of Edinburgh (1919–1924) coincided with his last years at Glasgow. 1925–1927 saw his second term on the Council of the Royal Society of London. He served as President of Section K (Botany) at the Oxford meeting of the British Association for the Advancement of Science in 1926, and as overall President for the Association's meeting at Bristol in 1930, where his Presidential Address was on the theme of size and form in plants. In 1938 he was awarded the Darwin Medal of the Royal Society, having been awarded the Royal Medal in 1910.

There was to be one more titled function within the University. In 1929 he was elected Dean of Faculties by the Senate. In title the post dates from the medieval origins of the University following its foundation in 1451. The pre-Reformation Deans were elected annually and were responsible for the general superintendence of studies. Post-Reformation Deans, still elected annually, were required to audit the accounts and



to act as Visitor when occasion demanded. By the time of Bower's election the position had become an honorary one, with the main function being attendance at University Ceremonies. Bower served as Dean of Faculties until 1940.

Throughout his working life Bower had been blessed with good health – a tribute, he once claimed, to a 'sound country upbringing'. He did suffer attacks of gout on occasions. Following one such occurrence in April 1915 he had received an amused sympathetic response from W.G. Barlow at Harvard – gout was 'an aristocratic disease, unknown in America'; Bower could hence 'take pride in descent from overfed and drunken ancestors' (76). As his nephew Rodger observed, however, whilst Bower enjoyed good food and wine, these were always taken in moderation (75 *ibid.*). In November 1944 after his 90th birthday, he could inform C.W. Wardlaw, who was now Barker Professor at Manchester, having succeeded Lang in 1940, that he was 'deeply grateful for continued good health notwithstanding certain disabilities which are to be expected'.

His last major involvement was with the 4th Edition of *Botany of the Living Plant*. The first moves were made in the autumn of 1943 when the publishers, Macmillan & Co., estimated that stocks of the 3rd Edition would last 2–3 years. Wardlaw agreed to cooperate in December 1943. The rewriting and updating took them through 1944 and 1945 and by January 1946 work was well in hand on the page proofs. Progressively however the work became more burdensome for Bower. In April 1945 he complained to Wardlaw of feeling bogged down by '*anno domini*'. In February 1946 he admitted to being 'less efficient' as a proof reader and in the following March it was mutually agreed that Wardlaw should become 'Editor-in-Chief'. As Bower commented in a letter to Mrs. Wardlaw in May 1946, her husband's assistance was proving essential – 'In my 91st year I am distinctly more dependent on him than I was a year ago'. Proof checking was completed in November 1946 and publication followed in 1947. As Wardlaw told Lang when supplying him with information for Bower's obituary for the Royal Society, and describing the 1944–46 revision:

'Of course by this time his memory was patchy and I had eventually to make sure that everything was as it should be before the Chapters went to the publisher. But it was quite wonderful the way he followed up the work throughout'.

With his advancing years there were changes in domestic arrangements. The year 1940 saw the deaths of his remaining sister and his brother Herbert. Herbert's widow moved into 2, The Crescent 'for the duration' to oversee its running. There were the occasional complaints through the war years of coal shortages, fluctuations in gas pressures, and trouble with servants. There was a continuing anxiety about his nephew Rodger, now a Brigadier, and on active service. The house was sold after the war and Bower moved into rooms in the Old Deanery Hotel opposite the Minster. Here he had a study which enabled him to cope with the last stages of his contribution to the 4th Edition. The accommodation proved to be unsuitable for someone in their 91st year and in the autumn of 1946 he moved to the Winchester Nursing Home, close to The Crescent, where the necessary all-round care and warmth were guaranteed. Here he died on 11th April 1948 after a short illness.

A.D. BONEY

## REFERENCES

GUA – Glasgow University Archives plus reference number.

1. GUA C 47
2. Boney, A.D., 1998. The Establishment of a Botanical Institute, 1879 – 1901. *The Linnean*, Vol. 13 (4), pp. 15 – 37. –
3. Anon., 1944. Sir D'Arcy Wentworth Thompson, C.B., F.R.S.: a Professional Record. *Nature, Lond.*, Vol. 154, p. 761.
4. Boney, A.D., 1994. David Thomas Gwynns-Vaughan, 1871 – 1915. *The Linnean*, Vol. 10 (1), pp. 27 – 57.
5. GUA C 220
6. GUA C 278
7. GUA E 191
8. GUA E 192
9. GUA E 182
10. GUA E 54E
11. Boney, A.D., 1991. The 'Tansley Manifesto' Affair. *New Phytologist*, Vol. 118, pp.3–21.
12. GUA C 49
13. GUA E 169
14. GUA E 87A
15. GUA E 54F
16. GUA C 188
17. GUA E 76A
18. GUA E 194
19. GUA E 87B
20. GUA E 57H
21. GUA E 87C
22. GUA E 87D
23. GUA E 87E
24. GUA E 87F
25. GUA E 87G
26. GUA E 54K
27. GUA E 87M
28. GUA E 54Q
29. GUA E 76B
30. GUA E 54M
31. GUA E 178
32. GUA E 54N
33. GUA E 87K
34. GUA E 87L
35. GUA E 87J
36. GUA C 195
37. GUA C 53
38. GUA C 50
39. GUA C 56
40. GUA C 513
41. GUA C 316
42. Fletcher, H.R. & Brown, W.H , 1970. *The Royal Botanic Garden, Edinburgh 1670 – 1970*. H.M.S.O. Edinburgh, pp. 233 – 234.
43. GUA C 60
44. GUA C 432
45. GUA C 146
46. Bower, F.O., 1923. Obituary Notice: Sir Isaac Bayley Balfour. *Proceedings of the Royal Society of Edinburgh*, Vol. 43, pp. 230 – 236.
47. GUA C 307
48. GUA D 159
49. GUA D 154
50. GUA D 155
51. GUA D 165
52. GUA D 166
53. *Glasgow University Senate Minutes*, No. 58476, p. 123.
54. GUA D 67
55. GUA D 167
56. GUA D 169
57. GUA D 171
58. GUA D 71
59. GUA D 71A
60. GUA D 71B
61. GUA D 198
62. GUA D 321
63. Bower, F.O., 1938. *Sixty Years of Botany in Britain (1875 – 1935)* Macmillan & Co., London, p.36.

- |  |               |
|--|---------------|
| 64. GUA D 172  | 65. GUA D 173 |
| 66. GUA D 174  | 67. GUA A 85  |
| 68. GUA D 80   | 69. GUA D 81  |
| 70. Personal Communication from the late Professor C.G.C. Chesters   |               |
| 71. GUA D 179  | 72. GUA A 119 |
| 73. Boney, A.D., 1993. 'Doing his botany in the intervals of fiddling'. <i>The Linnean</i> , Vol. 9(2), pp. 29 – 36. |               |
| 74. GUA D 178  |               |
| 75. Personal Communication from the late Lieutenant General Sir Rodger Bower, K.C.B., K.B.E.                         |               |
| 76. GUA B 86   |               |

---

## Library

Visitors to the Library will have noticed that the heaps of incoming material in the Library Annexe do not appear to have diminished during the past few months. There has in fact been a steady progression of books from the “working end” to display in the Reading Room or onto the shelves and most of the upper parts of the current piles of books and boxes are “new” ones, brought in as a result of deaths, house moves, retirement and other upheavals. The death of Dr Ann Duncan has brought in a lot of “gap-filling” material, especially in Eastern European publications on freshwater fauna, and we are now gradually sorting through this to identify items to retain, to go into the next book sale and material to dispose of through specialist dealers or other institutions. We have also take in three full “car loads” of material from Richard Fitter, most of which will fill gaps in our UK Natural History journal holding, but which are temporarily boxed. Max Nicholson has also presented us with a number of ornithological and UK natural history books as well as environmental journals which will supplement those already received from him. Lastly, John Burton and Bernard Mercer have passed onto us some more recent material, courtesy of the World Land Trust. Most of these donations are not listed separately here due either to limits on space or because the books and boxes are still being sorted.

The Reading Room will be transformed during the summer months from mid July to the end of August by the usual teams of student helpers engaged in cleaning, shifting and re-shelving the book stock. They will occupy one set of library tables and much of the other working space will be taken up by books removed from the shelves. Although we ask them to remember to be considerate of other Library users, there will inevitably be noise, dust and moving of ladders etc. We try and keep space available for readers in the Library Annexe but space will be limited so if you need to come and have a full day in the Library please check beforehand. Some stock will also be even slower to find if it is temporarily housed on a trolley or has been moved for the third time. A “wants” list beforehand can reduce waiting time. We will also be sorting and cleaning up the East Basement book stores which have suffered from recent building work. New water mains and paving in the entrance to the courtyard have now been completed and new ventilation panels installed in the roadway These should provide a better air flow to this basement area while screening dust and litter.

The donations received from January to the end of April follow, and include some items received earlier but which missed the copy date for the previous issue. We have also received 6 manuscript diaries from the estate of L.C.Beadle FLS. These cover his time in South America (1926–27), East Africa (1930/31), Algeria (1936) and his war time experience in North Africa and Italy (1943–45).

*Library Donations from 1 January – 30 April 2001*

- |                            |   |
|----------------------------|---|
| C. Almaça                  | Almaça, C., <i>O homem medieval e a biodiversidade</i> . 196 pp., illustr. Lisbon, Museu Bocage, 2000.  |
| N. Barrington              | Hasan, Syed Azhar, <i>Butterflies of Islamabad and the Murree Hills</i> . 68 pp., col. illustr., Islamabad, Asian Study Group, 1991.  |
| Brooklyn Bot. Gdn.         | Appell, Scott D. (guest editor) <i>Landscaping indoors, bringing the garden inside</i> . 111 pp. col. illustr. Brooklyn, NY., Brooklyn Botanic Garden, 2000.  |
| R. Cleavelly,              | LIVERPOOL, Museums and Galleries on Merseyside, <i>Catalogue of the osteological specimens in the collection of the Zoology department of Liverpool Museum</i> , by Clemency Thorne Fisher, Anthony Parker and Anthony Preston Roberts, 194 pp., Liverpool, NMGM, 1999.<br>SYMPOSIUM, <i>Proceeding of the International Symposium on Plant Introductions</i> , ed. F. de Sola, 169 pp., Escuela Agricola Panamericana, 1967. |
| W.G. Chaloner              | Van Griensven, L.J.L.D. ed., <i>Science and cultivation of edible fungi</i> . 2 vols., 964 pp., figs, illustr., (proceedings 15 <sup>th</sup> Int. Congress, Maastricht, May 2000). Rotterdam, Balkema, 2000.   |
| N. Chambers                | Chambers, Neil (ed.) <i>The letters of Sir Joseph Banks, a selection 1768–1820</i> . 420 pp., illustr., maps, London, Imperial College Press, 2000.   |
| J.L. Cloudsley-Thompson    | Batanouny, Kamal H., <i>Plants in the deserts of the Middle East</i> . 193 pp., illustr., figs. maps, Berlin, Springer, 2001.   |
| D.T. Donovan               | McGowan, Chris, <i>Diatoms to dinosaurs, the size and scale of living things</i> . 288 pp., illustr., Washington D.C., Island Press, 1994.  |
| L. Dorr                    | Dorr, L. (and others), <i>Catalogue of the vascular plants of the Guaramacal N.P. Portuguesa and Trujillo States, Venezuela</i> . 155 pp., maps, Washington DC, Smithsonian Institution (Contrib. U.S. National Herbarium 40), 2000.  |
| Geneva, Cons. & Jard. Bot. | Jeanmonod, D. (ed.) <i>Complements au Prodrôme de la flore Corse: Rubiaceae</i> . 203 pp., illustr., maps, Geneva, Conservatoire & Jardin Botanique, 2000.  |
| F.R. Goodenough            | Halcrow, M. & Halcrow M.R., <i>Orchids of Belize</i> . 151 pp., illustr., map, Belize, Government Printer, 1968.  |

- O. Hagelin Hagelin, Ove, *Georg Dionysius Ehret and his plate on the sexual system of plants in Linnaeus's own copy of Systema Naturae*. 29 pp., illustr., Sweden, Hagström biblioteket, 2000.
- F.N. Hepper Fischer, E & Hinkel, H., *Natur Ruandas, la nature du Rwanda*. 452 pp., col. illustr., Maintz, J. Gutenberg Univ., 1992.
- Hepper, Nigel, *Flora of Egypt, family 159 Solanaceae*. 168 pp., illustr. maps, Taekholmia Add. Ser. No 6, 1998.
- Saunders, Harold N., *A handbook of W. African flowers*. 124 pp., illustr., London, OUP, 1958.
- J. Howells Howells, J., *Choosing your clematis*. 143 pp., col. illustr., Woodbridge, Antique Collectors Club, 2000.
- P-M. Jørgensen Moe, Dag, Salvesen, Per Harald & Øvstedal, Dag Olav, *Historiske hager*. 183 pp., illustr. some col., Bergen, Bergens Museum skrifter, 5, 2000.
- S.L. Jury Washington DC, National Research Council, *Lost crops of Africa, Vol.1 Grains*. 383 pp., illustr., Washington DC, National Academy Press, 1996.
- Wigginton, M.J. & Graham, G.G., *Critical species, subspecies and varieties in the Durham flora*. 80 pp., spiral bound typescript, April 1976.
- Keynes, R. Keynes, Randal, *Annie's box, Charles Darwin, his daughter and human evolution*. 331 pp., illustr., col. frontisp., London, Fourth Estate, 2001.
- Kew, R.B.G. Herendeen, Patrick S. & Bruneau, Anne (eds) *Advances in legume systematics pt. 9* (XVI International Botanical Congress, St Louis, 1999), 363 pp., illustr., Kew, Royal Botanic Gardens, 2000.
- Radcliffe-Smith, Alan, *Genera Euphorbiacearum*, 455 pp., illustr. by Camilla Speight, Kew, Royal Botanic Gardens, 2001.
- H. Kinnell Keay, R.W.J., *Inter-specific competition in Nigerian rain forest and its bearing on silviculture*. D.Phil Thesis., 80 pp. illustr., maps, 1963.
- T. Littlewood Littlewood, D.J.T. & Bury, R.A. (eds) *Interrelationships of Platyhelminths*. 356 pp., illustr., London, Taylor & Francis for Systematics Association, 2001 (Systematics Association Special Volume 60).
- G. Mapstone Cayley, Neville W. *What bird is that? A guide to the birds of Australia*. 325 pp., col. illustr., Sydney, Angus & Robertson, 1973.
- Slater, Peter, *A field guide to Australian birds: Non-passerines*. 428 pp., illustr. some col., maps, Adelaide, Rigby, 1970.

- Slater, Peter, *A field guide to Australian birds: Passerines*. 309 pp., illustr. some col., maps, Adelaide, Rigby, 1974.
- P. Morris Balčiauskas, Linas (& others), *Lietuvos žinduolių varliagyvių ir roplių atlasas (Atlas of Lithuanian mammals, amphibians and reptiles)*, 2<sup>nd</sup> ed., 120 pp., maps, Vilnius, Akstis publ., 1999.
- Kryštufek, Boris, *Sesalci Slovenije (Mammals of Slovenia)*, 294 pp., illustr. some col., maps, Ljubljana, Prirodoslovni muzej Slovenije, 1991.
- Pucek, Zdzisław & Raczyński, Jan, *Atlas of Polish Mammals* (parallel text Polish/ English), 2 vols, 188, 183 pp., maps, Warsaw, PWN, 1983.
- E.C. Nelson Johansson, Marianne, *Ericoid mycorrhizal and saprophytic fungi in heathland soil...* PhD thesis, Univ. of Copenhagen, 158 pp., illustr. some col., 1995.
- Manganelli, Guiseppe & Spadini, Valeriano, *I molluschi marini Pliocene del ditorno di Siena... Carlo di Stefano e Danta Pantinelli*. 366 pp., Siena, 2001.
- Marchiori, Silvano, Medagli, Piero & Ruggiero, Livio, *Guide botanica del Salento*, 237 pp., col. illustr., maps, Galatine, Mario Congedo (ed.), 1998.
- Nelson, E.C., *A heritage of beauty, the garden plants of Ireland, an illustrated encyclopaedia*. 348 pp., illustr. some col., Dublin, Irish Garden Plant Society, 2000.
- Nelson, E.C., compiler and editor, *An annotated topographical check list of the flowering plants... of the Burren region*. 122 pp., map, Outwell, privately, 2000.
- J. Feltwell Feltwell, John, *Geraniums and pelargoniums*, 128 pp., col. illustr., London, Collins & Brown, 2001.
- Norsk Polar Inst. Troms, Norsk Polarinsittutt, *The status of marine birds breeding in the Brent sea region* by T. Anker-Nilssen (and others) eds., 213 pp., illustr., col. maps, figs, Troms, Norsk Polarinstitut, 2000 (Rapport no. 113).
- B. Nordenstam Nordenstam, Bertil, El Ghazaly, G & Kassas, M. (eds) *Plant systematics for the 21 century*. 366 pp., illustr., Stockholm, Wenner Gren foundation, 2000.
- Oman Bird Record Committee Eriksen, Jens & Sargeant, Dave E.. *Oman bird list*, ed. 5, 166 pp., map, figs, Muscat, Oman Bird Record Committee, 2000.
- J. Packham Packham, J.R., Randall, R.E. & Barnes, R.S.K. (eds.) *Ecology and geomorphology of coastal shingle* (EUCC-UK Conference proceedings, Wye, April 1999), 459 pp., illustr. some col., maps, Otley, Westbury, 2001.

- H. Prendergast Kew, Royal Botanic Gardens, *Plants+People, an exhibition... Economic Botany collection*. 23 pp., col. illustr. Kew, RBG, [1998?].
- PROSEA Foundation Boer, E. & Ellen, A.B. (eds) *Plant resources of South-East Asia No. 18: plants producing exudates*, 189 pp., illustr., maps. Leiden, Backhuys, 2000.
- F.M. Raimondo Raimondo, F.M. & Mazzola, P. (eds) *Le reliquie Tineane, Florae siculae icons ineditae di Vincenzo Tineo*, 213pp., illustr., Palermo, Edizione Naturama, 2000.  
Russian Acad. of Sci. Alimov, A.F., *Elements of aquatic ecosystem function theory*, edited by M.B. Ivanova (in Russian) , 147 pp., figs, St Petersburg, Nauka, 2000.
- Smithsonian Inst. Bobrov, E.G. & Tzevelev, N.N. eds. *Flora of the USSR Vol. XXIX Compositae, tribe Chicorieae*, translated into English... 795 pp., illustr., Washington DC., Smithsonian Institution Libraries, 2000.  
Schischkin, B.K. (ed.) *Flora of the USSR Vol. XXIII Bignoniaceae - Valerianaceae*, translated into English... 733 pp., illustr., Washington DC., Smithsonian Institution Libraries, 2000.
- P. Stroud Stroud, Patricia Tyson, *The emperor of nature: Charles-Lucien Bonaparte and his world*. 371 pp., illustr. Philadelphia, University of Pennsylvania Press, 2000.
- Hugh Synge Yunus, Mohammad, Pathure, Uday & Mohanty, Prasanna (eds) *Probing photosynthesis, mechanisms, regulation and adaptation*, 558 pp., London Taylor & Francis, 2000.
- Systematics Assoc. Bateman, Richard & Saunders, Lynn M. (eds) *Developmental genetics and plant evolution ...* (Conference abstracts 20–22 Sept. 2000) 56 pp., spiral bound, [London, 2000].  
SYSTEMATICS ASSOCIATION, *Major events in early vertebrate evolution*, edited by Per Erik Ahlberg, 418 pp., illustr., (Special Vol. 61) London, Taylor & Francis, 2001.
- P. Tuley SYMPOSIUM, Nigerian Field Society UK Branch, *Wildlife conservation in West Africa, II*. 71 pp., illustr., maps, Guildford, N.F.S. (UK branch) [2001].
- C. Violani PAVIA, Pavia University, *Poeti, Scienziati, Cittadini nell'ateno Pavese tra riforme e rivoluzione*. 463 pp., illustr., Pavia. University of Pavia, 2000.
-