Editorial

This issue contains a profile of George Busk who not only made Neanderthal Man known to English readers in 1861, but later described the pithecid priscan man from Gibraltar and showed that the Neanderthalers ranged from North Wales to the Rhine and from there to the Pillars of Hercules. Although the original description of the Neanderthal remains was first published by Schaaffhausen in 1858, it was Busk who made use of a cast of the skull to amplify Schaaffhausen's description in his translation of the paper in 1861. Huxley subsequently used this cast to calculate the cranial capacity of Neanderthal Man which he showed was well within the modern human range\(^1\), while its ape-features, he pointed out, were entirely superficial, the brow ridges being a reversal towards the ape-like ancestor (Huxley, 1863). He further noted that the stout limbs suggested a cold-climate adaptation. However, Huxley considered there were no grounds for separating Neanderthal Man specifically from \(H.\ sapiens\). He also believed that man differed less from the higher apes than these do from the monkeys, while Owen maintained that our brains were so distinct as to separate us from all other primates!

In the same year that Huxley remarked that he could select a series of recent human skulls that:

"lead by insensible gradations from the Neanderthal skull up to the most ordinary forms" (Huxley, 1864).

Wallace published a paper in which he introduced the idea of kin selection to account for man's rapid increase in brain size.

"Tribes in which such mental and moral qualities were predominant, would therefore have an advantage in the struggle for existence over tribes in which they were less well developed, would live and maintain their numbers, while the others would decrease and finally succumb" (Wallace 1864).

"Mr. Wallace, in an admirable paper - - - argues that man, after he had partially acquired those intellectual and moral faculties which distinguish him from the lower animals, would have been little liable to bodily modifications through natural selection or any other means. For man is enabled through his mental faculties "to keep with an unchanged body in harmony with the changing universe" (Darwin 1871).

As for Neanderthal Man, Wallace clearly believed Busk - remarking:

"the skull may have been a specimen of one of the lowest races then existing (at the time of large mammalia now extinct), just as the Australians are the lowest of our modern epoch" (ibid.).

REFERENCES

\(^1\) Classic Neanderthalers had an average brain size of 1450 cc, which is 50 cc more than the average modern European.
Society News

Nominations for Foreign Membership of The Linnean Society

Professor Wilhelm Barthlott (Botanical Institute and Botanic Garden, Bonn, Germany) is a plant scientist with major achievements in a number of fields. He has trained many successful research students. As a lecturer at Heidelberg University he developed a wide reputation in the study of cacti, especially the Rhipsalideae and in the study of the micromorphology of leaf surfaces, using scanning electron microscopy, on which he is a leading authority. From Heidelberg he moved to the Free University, Berlin, then to his present post. His publications include many scientific papers and a beautifully illustrated book on the Cacti, available both in the German original (1977) and in English translation (1979). More recently he has engaged in studies on the distribution of plant diversity and is co-author of a major volume Biodiversity (1988). In more recent years he has extended his SEM studies to describe the leaf surface micromorphology of many plant families, and has been involved in describing, analysing and classifying leaf surface waxes of a vast number of angiosperms. He has also researched the UV reflection properties of numerous angiosperm flowers.

Professor James William Schopf (Centre for the Study of Evolution and the Origin of Life, UCLA, USA) described the earliest fossils (from the 3.4 Gyr Apex Chert of Western Australia) and has done an immense amount to promote understanding of Precambrian biology, especially among young people.

Professor Nikolai Nikolaevich Tzvelev (Komarov Botanical Institute, St. Petersburg, Russia) was born in 1925 in Tambov, 400 km south-east of Moscow. A graduate of Kharkov University, Ukraine in 1951, he obtained his doctorate at the Komarov Botanical Institute in Leningrad (now St. Petersburg) where he subsequently spent the whole of his career, becoming Keeper of the Phanerogamic Herbarium in 1975. He is the author of around 300 publications, and has played a major role as editor in several floras of the Russian Arctic, Central Asia, European Russia and Vietnam. His best known book, Zlaki SSSR, which was translated into English as Grasses of the USSR, obtained the Komarov Prize from the (now) Russian Academy of Sciences.

Nominations for Fellows Honoris causa

Professor Brian George Gardiner retired from King’s College, London, after a distinguished career as a lecturer, PhD supervisor of many students and researcher on fossil fishes. He is a world authority on primitive actinopterygians (ray-finned) fishes. He has served the Linnean Society in many official capacities, including President (1994–97) and has become part of the Society’s fabric. He established The Linnean in January 1984 as one of the most lively scientific society newsletters and has been
its stalwart Editor ever since, encouraging a diversity of contributions, including highly informative writings of people associated with the society.

Professor Vernon Hilton Heywood is Emeritus Professor in the University of Reading and a world authority on the classification and evolution of plants; he is the author of 60 books and 600 papers on plant taxonomy and systematics, chemosystematics, medicinal plant conservation, scanning electron microscopy, ecology, conservation, botanic gardens and plant genetic resources. Winner of the Linnean Medal of the Society in 1987, he has been a Council member and Vice-President of the Society, as well as the secretary and editor of the five-volume Flora Europaea for 25 years.

Council recommendations for Medals and Awards

Botany Medal: Prof. Philip Barry Tomlinson FLS
Zoological Medal: Dr. Quentin Bone FRS
Bicentenary Medal: Dr. Paul Kenrick FLS
HH Bloomer Award: Mr. Richard Henry Roberts
Jill Smythies Prize: Ms. Pandora Sellars
Irene Manton Prize: Dr. Melissa Spielman

Council recommendations for Council and Office

President-Elect: Sir David Cecil Smith FRS
Botanical Secretary: Dr. John Richard Edmondson
Council:
Dr. John Charles David (B)
Dr. Madeline Margaret Harley (B)
Dr. Quentin Charles Bargrave Cronk (B)
Dr. Philip Stephen Rainbow (Z)

Professor David Ingram, lately Keeper of the Royal Botanic Garden, Edinburgh, was awarded an OBE in the New Year’s Honours List. Mr. Ross McKinnon, Curator of the Brisbane Botanic Gardens, was appointed a Member in the General Division of the Order of Australia (equivalent to the UK OBE and styled AM) on Australia Day (26th January) 1999. The World’s most prestigious award for plant exploration, the David Fairchild Medal, has gone this year to Dr. John Dransfield, of the Royal Botanic Gardens, Kew. It was presented by another Fellow, Professor Paul Cox.

The Society gratefully acknowledges the donation of £1250 from the Golden Bottle Trust and a bequest of £1000 under the will of the late Professor Robert (Bob) Savage FLS. When the former President, Professor Brian Gardiner, and the Executive Secretary visited Bob Savage shortly before he died, they were presented with a portrait of Dr. Martin Alister Campbell Hinton FRS (by his stepson, Wayland Dobson), which now hangs in the Executive Secretary’s office. As one of Martin Hinton’s executors (Hinton died in 1961) Bob was able to provide Brian with valuable information which led to Brian fingering Hinton as the perpetrator of the Piltdown hoax. A review of this still contentious topic is promised in the Society’s Zoological Journal shortly. Hinton lived
to see the structure of DNA revealed, but not to see restriction enzymes which might have made his alleged misdeed more difficult. On that theme, one of the Society's Fellows, Dr. Richard Spearman, has proposed that the Society mark the 50th year of the publication of the structure of DNA in 2003. Maybe we shall be in a position then to say just whose skull was used in the hoax (hox?) and whence in SE Asia the orang utang jaw came.

On 13th January, the Society's Officers were delighted to receive, on behalf of the Society, a bronze bust of Darwin, taken originally from a mould at Down House, as a result of the generosity of a Fellow, Stuart Baldwin. This is on display in the Society's rooms.

Following the Presidential address on Alfred Russel Wallace in the last issue, it was interesting to note in The Daily Telegraph of 9th January, under the headline “Aborigines are blamed for wiping out a race of tortoises as big as cars” (the car, Haldane would have rejoiced to know, was a VW Beetle), that Alfred Russell (sic) Wallace remarked that “we live in a zoologically impoverished world from which all the hugest and fiercest and strangest forms have recently disappeared”. Sophisticated dating techniques now suggest that in Australia (and in all probability in the Americas and on a number of oceanic islands) the disappearances coincided with Man’s arrival. The Society is in the throes of considering with the Wallace family and others the best way in which Wallace’s grave, at Broadstone Cemetery in Poole, Dorset can be preserved.

In a previous issue we mentioned A.O.Walker, a noted amateur marine biologist in the Liverpool area in the late nineteenth and early twentieth centuries. We noted that his archives were believed to be in the hands of the University of Liverpool and, indeed, they were. No less than 53 diaries, in somewhat less than immaculate copperplate, have been generously loaned to the Society from that source and Anthony Walker FLS, of the family, is perusing them in our Library at the present time.

It has to be said that presentations to departing staff are a rarity at the Linnean Society. In the public sector, it seems an almost monthly event. At the December 1998 meeting we bade a formal farewell to Maria Polius, who left in July after 12 years' service. It seemed worthwhile casting our minds back to the days when Maria joined the Society. There was but one computer, a thing called a Victor, which contained the membership records, maintained at that time by the redoubtable Sue Dwell-Brown. In 1984, the set-up cost nearly £5000. Its only virtue was an attached Qume printer, a Rolls Royce amongst so much dross. Otherwise it was steam typewriters, and, although the Society did possess a elderly xerox photocopier, there was in 1989 an old spirit duplicator in the basement. Age shall not weary them nor the years condemn! In 1989 a fax machine was installed in the Society for the first time, to the great suspicion of Members. “It’ll never catch on,” they said. Much the the same sort of thing continues to be said about gene sequencing as a basis for classification. In 1990, the Society acquired two more secondhand Victor machines for less than £500 the pair. Sadly, these machines were already obselete and pretty tired; they spent most of their time in bits on the office floor. The service contract was £6000 per year.

So dire was the situation that, late that year, the then Treasurer, Ronald Keay,
decided to go ahead without the authority of Council to purchase a more modern set-up of 5 machines with associated accessories at a cost of £28 000. The records of members were transferred from the old idiosyncratic system to the new IBM clones relatively smoothly. Five years ago, we purchased a photocopier for a similar sum, with which a plain paper fax machine was thrown in. Now our computers themselves can be used as fax machines, although they seldom are since few can remember from the last time how to do it. And a couple of years ago, another generation of computers took the stage, this time for a mere £14 000. Now we are thinking of the next one.

It was decided that in 1998 the Society’s rooms should come in for a spot of maintenance. Would that it were so simple! Redecoration of the gentlemen’s toilet on the second landing disclosed that some time in the distant past the walls of the toilet had been very wet and as a result, the plaster came off with the paper. A small, but highly coloured, leak in a basement pipe revealed that the main boiler feed was almost blocked by corrosion, necessitating replacement of the pipe through virtually the entire height of the building. Installation of a sump pump in the boilerhouse (the lowest point in the building), which will pump out water from any flooding of the boilerhouse, has been delayed because a pump which will also switch off all the electrics in the boilerhouse when it is activated to minimise damage to the boilers cannot be found. Finally, ventilation of the basement toilets led to a somewhat unsocial atmosphere in the gentlemen’s toilet, the result, we believe, of eons of absorption of unpleasant odours in the plaster being reversed. We are attempting to expedite this process. The double doors in the basement now close easily and retain the warmth there. The floor in the basement, essentially Thames mud above the Piccadilly line, had risen slightly to foul the doors. This gave rise to some debate as to whether the water table in London has risen with the decline of manufacturing industry. Apparently it has and some are making good use of it with boreholes to save on water bills. Meanwhile, the Society’s rooms sport discreet health and safety notices (we enjoyed excellent advice, generously given, from Mr. Glenn Benson FLS at the V & A) and we are contemplating how to make the upper gallery in the Library Reading Room less of a suicide opportunity. Apparently the linoleum there is past its tread-by date.

Planning for the 1999–2000 session is well advanced. On 9/10th September Under the Microscope: Plant Anatomy and Systematics marks the official retirement from Kew of the Editorial Secretary, Dr. David Cutler. The following week (15th, am), sees David again stepping forward, but not we hope back, with fellow woodsmen, Professor Pieter Baas FLS and Dr. John Barnett FLS at our annual BAAS appearance (at Sheffield) Wood for the people: modern research on old problems. The theme of this year’s BAAS meeting is science and industry. Other major meetings of the Society before the millennium include, on 15–17th October, a field trip to the Welsh Marches at Kington to the Nash Rocks Quarries, the Hergest Croft Gardens and to the Banks Archive at Hergest Croft, courtesy of Mr. WL Banks FLS; on 25th November, Species 2000 in Europe; and on 15–16th December, Remote sensing (not as Wallace would have understood it). For this last meeting the areas under consideration will be coral reefs, where the air/water interface limits observation of what is generally recognised as a fast disappearing ecosystem.

The following other meetings and courses are noted: Linder Memorial Lecture –
Beatrix Potter’s fossils and her interest in Geology, 19th May 1999. CAB Lectures: Biochemical and Molecular Characterisation of Bacteria and Fungi 28th June – 9th July 1999, Identification of Fungi of Agricultural and Environmental Significance 12th July – 13th August 1999, Entomology Foundation Course 23rd August – 24th September 1999 and Biological Control of Arthropod Pests and Weeds 30th August – 24th September 1999. Details of all these from Mrs. Stephanie Groundwater, CABI Bioscience, UK Centre, Egham, Surrey TW20 9TY, 01784 470 111 (T), 01491 829 100 (F) and (e-mail) S.Groundwater@CABI.org.

JOHN MARSDEN

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**Picture Quiz**

The January Quiz (15(1):5) featured George Busk (1807–1886), surgeon, parasitologist and palaeontologist. The second son of Robert Busk, Merchant of St. Petersburg, and his wife Jane, daughter of John Westly, Customs House clerk at St. Petersburg, George was born in that city on 12 August 1807.

He received his initial education at Dr. Hartley’s School, Bingley, Yorkshire and from there he went to London where he spent six years as an articled student of the College of Surgeons under the aegis of George Beaman. His medical education was completed at St. Thomas’s Hospital Medical School (during which period he attended one session at St. Bartholomew’s).

On completion of his studies he gained the appointment of Apothecary on the first of the Seaman’s Hospital Society’s hospital ships – the _Grampus_ (1830) and then two years later he became Assistant Surgeon on the Seaman’s Hospital Society’s much larger ship – the 104 gun _Dreadnought_. He soon became Resident Surgeon and eventually Consulting Surgeon, a position he retained until his death.

During his period as Resident Surgeon he was assisted by the Visiting Physician (Surgeon) George Budd and together they not only worked out the pathology of cholera (1837–38) but also made important observations on scurvy. Their subsequent report was printed and circulated widely among ship owners and captains; the remedy included vegetables and fruit.

In 1845 in a post-mortem examination of a lascar seaman, Busk discovered in the duodenum what remains the largest trematode known to infect man. This fluke, named _Diastoma buski_ by George Budd (On Diseases of the Liver, 1845) is now referred to as _Fasciolopsis buski_; the type Budd presented to King’s College, London. The following year (in a paper to the Microscopical Society) Busk described the morphology and life cycle of the Guinea worm – _Dracunculus medinensis_ – while as late as 1865 he contributed to a review of ‘Recent works on the Entozoa’.

After having served some 25 years on the _Dreadnought_ (which was moored at Greenwich) he resigned his appointment in 1855 and retired from practice. He settled in London first at 15 and then subsequently 32 Harley Street. His reason for retiring from the SHS was so that he might devote himself to scientific work. He had already translated Steenstrup’s book _On the Alternation of Generations_ (1845) and, together
with his friend T.H. Huxley, Köllicker's *Manual of Human Histology* (1853–54). More importantly, since 1850 he had been actively engaged on research into the Polyzoa and the Hydrozoa, working up the *Rattlesnake* collections made by Huxley (viz *Plumularia huxleyi*: see MacGillivray’s *Narrative of the Voyage of H.M.S. Rattlesnake*, 1846–1852: vol. 1.). His interests, however, were more with the Polyzoa. He produced successive papers on that group, starting with “Catalogue of Marine Polyzoa in the British Museum” (Part I, Cheilostomata, 1852; Part II, Cheilostomata, 1864; Part III, Cyclostomata, 1875) continuing with a taxonomic review of the group for the *English Cyclopaedia* (1856), a monograph of the Fossil Polyzoa of the Crag (Palaeontological Society 1859) and finally producing a *Report on the Polyzoa Collected by H.M.S. Challenger* during the years 1873–1876 (2 volumes 1884–86) which was concluded just before his death. In the context of the Polyzoa it is worth pointing out that Busk not only identified Darwin’s Polyzoa from the Beagle voyage, but also Lyell’s Polyzoa collected on the Madeiran islands in 1854 as well as those from the Coralline Crag and from France (1857) and that Lyell regarded Busk as “a first rate authority”.

Busk was also passionately interested in fossil man and one of his first tasks on leaving the services of the SHS was the translation into English of Shaaffhausen’s description of the cranium discovered in the Neander Valley in 1857 (see *The Natural History Review*, April 1861: 158–162). Shaaffhausen was convinced that the singularly rounded ribs, the unusual thickness of the limb bones and the low vaulted skull with large brow-ridges showed that the Neander skeletal remains belonged to an ancient human race. Busk obtained a cast of the skull and in his translation figured the outline of a chimpanzee skull alongside that of the Neanderthal skull to emphasize the resemblance between the great apes and man. Eventually Busk gave the cast to Huxley, who by that time was President of the Ethnological Society. He used Busk’s methodology (contained in a paper entitled “Observations on a Systematic Mode of Craniometry”, *Trans. Ethnological Soc.* 1861:1–8) to deduce that the brain size of Neanderthal1 was comparable with that of *Homo sapiens* and therefore far removed from an ape-like ancestor. Busk, however, realised that the Neanderthal skull with its low sloping forehead and strongly developed brow-ridges was a distinct race. Busk had not only read the Darwin-Wallace papers of 1858 but had transcribed and edited them (see later); consequently, he fully appreciated the bearing that the Neanderthal skull may have had on man’s animal origins.

In July 1863 Busk was sent the “Gibraltar cranium”, the description of which brought him both fame and notoriety. The cranium had apparently been found by Lieut. Flint, R.A. (or more probably given to him by a quarry workman) early in 1848, some nine years before the discovery of the Neanderthal remains. Flint presented it to the Gibraltar Scientific Society of which he was Secretary. Flint recorded the locality as Forbes Quarry, North Front. This was a limestone quarry near the Forbes Barrier (which is situated near the entrance into the Fortress from the neutral ground or mainland – see *Nature* Sept. 7, 1911; 313, letter from A. Keith, also *Bath Chronicle*, 1864). The skull was exhibited in the Society’s Museum, which was devoted to cave

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1 75 cubic inches (c. 1230 cc) a figure almost identical with that quoted for Hottentots.
natural history, but with the demise of the Gibraltar Natural History Society in 1853 the Museum became sadly neglected. Ten years later, in early 1863, the ethnologist Dr. Hodgkin, who was on a visit to the Rock, saw the cranium in the disused Museum and recognizing its extraordinary peculiarities induced Captain Brome, the Governor of the Military Prison, to procure it and then to forward it to Busk (Bath Chronicle, 1864; The Reader, 1864).

Captain Brome had already made extensive collections from a series of caverns and fissures on Windmill Hill during the years 1862–64 which he had sent back to England to be examined by Busk and Falconer. He included the cranium in a consignment sent July 1864 (The Reader, 1864). As soon as he saw it Busk realised that it resembled:

"in all essential particulars, including its great thickness, the far famed Neanderthal skull."

pointing out that this race:

"must have extended from the Rhine to the Pillars of Hercules".

In September Busk demonstrated the cranium at the British Association’s meeting in Bath where he pointed out that it most nearly corresponded with the skulls of modern races such as Tasmanians and with certain tribes of Western Australia.

Meanwhile, William King, anatomist at Queen’s College, Galway, had decided that the Neanderthal skull was so eminently ape-like it should be regarded as a distinct species. At the British Association meeting held in Newcastle in 1863 he proposed the name Homo neanderthalensis; this was published in 1864.²

Although Busk suspected that Neanderthal man and Gibraltar man were the same species he never bothered to give the latter a formal name despite the prompting of his friend Hugh Falconer, who suggested Homo calpicus, from ‘Calpe’ the ancient name for the Rock of Gibraltar (in a letter to Busk Aug. 27, 1864).

Unfortunately, Captain Brome was dismissed both from his post and from the Service for having employed prisoners to help him collect. Busk endeavoured to aid him by trying to obtain financial assistance from fellow scientists but with no great success.

Busk continued his work on cave faunas started with Falconer back in 1858 (Brixham Caves) and in 1874, in a paper on Pontnewydd Cave by Hughes and Thomas, as President of the Anthropological Institute he commented on the fossil bones which they had discovered, amongst which was:

"a large human molar tooth which exceeds any with which I have compared it except one or two from Australia and Tasmania".

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¹ Busk visited Gibraltar in May 1863 when he met Captain Brome for the first time.
In other words it must have belonged to Neanderthal Man – as did the Mousterian
felstone implements also present in the cave\(^1\). This find confirmed Busk’s conclusion
that Neanderthal Man was a representative of a distinct Pleistocene branch of mankind,
for neither Gibraltar nor Neanderthal Man had been previously found in association
with either extinct mammalia or Palaeolithic implements of a well-defined type.

Busk succeeded Owen as Hunterian Professor; he was President of the Microscopical
Society, 1848-49; President of the Royal College of Surgeons, 1871; President of the
Anthropological Institute, 1873-74 and Vice President (4 times) of the Royal Society.
Finally, it was the unanimous wish of Council that he should accept the Presidency
of the Linnean Society, although the state of his health prevented him from undertaking
the duties incumbent in that post.

For many years Boucher de Perthes had been digging up flint hand-axes in
association with bones of rhinoceros, hyaena etc., in the terrace gravels of the Somme.
Darwin acknowledged these labours in the *Descent of Man*\(^2\), pointing out that the
recognition of man’s high antiquity was the indispensible basis for understanding his
origin. Although Darwin was eventually convinced that these flint hand-axes were
human artefacts, Boucher cherished the hope that one day he might find the bones of
the men that made them. His wish was seemingly granted in March 1863 when one
of his workmen found a human jaw near the bottom of the gravel close to the base of
the section, in the Moulin-Quigon pit, near Abbeville.

Falconer and Prestwich, who happened to be in France at that time, visited the site
a week later and were convinced that the hand-axes from the black basal seam which
had yielded the jawbone were modern forgeries, while Busk, who knew the locality
well, doubted the authenticity of the jaw.

Eventually a conference was held at the Academy of Sciences, Paris on 18 May 1863
to determine whether or not the jawbone had been fraudulently introduced into the pit
and whether or not the hand-axes from the lower part of the section were authentic.

Busk, who was already regarded as one of the greatest authorities on fossil man,
was allowed to saw the jawbone in half. He remarked that:

“the fresh section afforded a distinct odour of sawn bone”

While the section of the root of the molar:

“showed that the dentine, so far as it was exposed, was perfectly white, full of gelatine,
and in no respect different in appearance from that of a Recent tooth.”

Despite this evidence the meeting decided (with the exception of Falconer and
Busk) that the jawbone had not been fraudulently introduced and that the hand-axes
were for the most part authentic.

\(^1\) By 1859 Falconer and Busk had already deduced that the flint implements recovered from France
(Amiens, Abbeville) and England (Brixham) proved the existence of fossil man. More importantly,
however, the Pontnewydd Cave was the first occasion that fossil man had been found together with
both hand axes and extinct mammals.

\(^2\) He once admitted, however, that when he first read the work of Boucher de Perthes he thought it
In 1960 Oakley using the fluorine test confirmed Busk's view: the jawbone was in fact Recent.

For a fuller account of the whole episode see Falconer, 1868. *Palaeontological Memoirs and Notes*. Edited by C. Murchison, London.

*Busk and Darwin*

Busk is first mentioned in Darwin's correspondence in a letter to J.E. Gray, the Keeper of Zoology at the British Museum (28 March, 1854) in which Darwin is asking Gray "to screw a copy out of the Trustees" of Busk's *Polyzoa*.

The following year Darwin wrote to Hooker congratulating him on being elected to the Philosophical Club. The Philosophical Club was a dining club-cum-think tank within the Royal Society and significantly there were just four other persons elected along with Hooker: Busk (elected FRS, 1850), Huxley, Stokes and Tyndall. The same year (May 1855) Busk was elected to the Council of the Linnean Society.

In January 1857, John Taylor, the Under Secretary of the Linnean Society then in feeble health, resigned (aged 75) and Busk was elected to succeed him (May 1857) with the designation Under (Zoological) Secretary, as the Secretary, J.J. Bennett was a botanist.

Charles Darwin was elected to the Council of The Linnean Society on 24 May 1858.

Thus the stage was set for the announcement of the theory of evolution by natural selection and when the death of Robert Brown (a Vice-President and member of Council) precipitated the intercalation of the Extraordinary Meeting on July 1st (to elect a new member of Council), Lyell and Hooker seized the opportunity by sending the Darwin-Wallace papers to the Secretary for communication 30 June 1858.

After all the Zoological Secretary was a personal friend of Hooker and an academic
colleague of both Darwin (whose Polyzoa he identified) and Lyell, while Darwin was a member of Council!

In the event Busk read first the letter from Lyell and Hooker, then the Darwin/Wallace papers, and then “Notes on the organization of Phasmis hippocrepis” by Dyer and “Observations on Ammocaetus” by Highly. Bennett read the last three papers: “On Hauburia” by Bertholt, a memoir by the late Professor Pavon entitled Nuvea Quinologia with observations by John Elliot Hewer and two letters on the vegetation of Angola by Wellwitch.

Busk was also responsible for the ensuing publication of the Darwin/Wallace papers in our Zoological Journal. He was a brilliant editor (he edited the Microscopical Journal, 1842; the Quarterly Journal of Microscopical Science, 1853–68; Natural History Review, 1861–65; the Journal of the Ethnological Society, 1869–70) but it ought to be borne in mind that he was assisted in his task by Hooker. After consultation with Darwin (see letter Hooker to Darwin 31 July 1858) Busk added the following footnote to 1. Extracts from a MS work on Species*: “This MS work was never intended for publication, and therefore was not written with care” – C.D. 1858. The papers were published in August 1858.

The original manuscripts of Darwin and Wallace have so far not been located, although we live in hope.

B.G. GARDINER

REFERENCES

Appendix: Selected Anthropological Publications by G. Busk
1866. Busk, G. On the Caves of Gibraltar in which human remains and works of art have been found. Trans. Int. Congress of Prehistoric Archaeology, 1: 62, 11pls.
1869. Busk, G. On an ancient Calraria from China which was supposed to be that of Confucius. J. Ethnological Soc., 74–83.
Clue: A bank holiday sketch?


The January Quiz featured the portrait in oils of George Busk which hangs on the wall of the staircase of the Society’s apartments. There was one winner, Hans Kerp.

Inadvertently we forgot to include the names of the winners of the October Quiz. They were: Martin Henderson, T.H. Nicolson and Ole Seberg, each of whom will receive a special celebratory mug. Three extra special mugs will be fired for Adrian Lister, Michael Coates and Helen Chatterjee (see Correspondence)!
Dear Brian,

As those charged with the care of the Grant Museum of Zoology and Comparative Anatomy, we immediately recognised the portrait of our founder in the October *Linnean*.

Robert Edmond Grant was born on 11th November 1793 in Edinburgh, where he subsequently attended university and graduated with a degree in Medicine. However, he soon turned his attention to the study of marine life, and gained an international reputation for his studies on sponges. The sponge genus *Granti*a is named after him (we have some of his original, hand-labelled specimens in the Museum), and he coined the term Porifera which is still used today. He also published on other groups, such as sea pens and molluscs.

A radical free-thinker and committed evolutionist, between 1826–27 Grant exerted an important influence on another young disillusioned Edinburgh medical student, Charles Darwin.

University College opened its doors in 1828 and Grant accepted an invitation to become its first Professor of Comparative Anatomy and Zoology, a post he held until his death in 1874. By the time the College opened, Grant had already founded the Museum, prepared three lecture courses, and provided dissections for use in teaching. He was probably the first to teach evolutionary theory within a British university. It is reported that in over 40 years he never missed a single lecture, and always wore full evening dress. He amassed the bulk of the collection which now forms the Grant Museum, currently comprising some 30,000 specimens covering the whole of the Animal Kingdom. Prize exhibits include Grant’s own specimens of the thylacine and duck-billed platypus. With Geoffroy, Grant was the first to show that the platypus laid eggs, in opposition to Richard Owen’s idea that it was ovoviviparous (eggs hatching inside the mother, followed by live birth).

Grant lived modestly in lodgings near Euston Station, and after leaving Edinburgh played little part in the evolutionary ferment of the period, a fact which has never satisfactorily been explained. He died on 23rd August 1874, and is buried in Highgate Cemetery.

Yours sincerely,

ADRIAN LISTER FLS
MICHAEL COATES FLS
HELEN CHATTERJEE (Curator, Grant Museum)

Fellows wishing to visit the Museum are warmly invited to do so. Visits are by appointment only: please contact Helen Chatterjee on 0171 504 2647.
Dear Professor Gardiner,

The photograph of Wallace’s house in *The Linnean* 14(3): 2 reminded me of two passages in *The Malay Archipelago* [my copy was published in 1987 by Graham Brash (Pte) Ltd., Singapore]. One is a plan of Wallace’s Ternate house. It and the photograph complement each other. The roof of the house in the photograph seems to be a “hybrid”, part traditional material (the upper portion) and some of what seems to be modern material (the slant in front). It seems reasonable to assume that only traditional materials were used for roofing during Wallace’s time.

The second passage pertains to Wallace’s house in Ambon (which he calls Amboyna) and the “large snake compactly coiled... and his head and his bright eyes in the centre of the folds... A python had climbed up...and...made his way under the thatch, within a yard of my head...” A copy of the illustration and the facing page are enclosed¹.

As a fellow “addict” my favorite part in *The Malay Archipelago* is Wallace’s ode to durian², the (very smelly) king of fruits, which I first tasted in Ambon, perhaps not

---
¹ The skin of the 12’ python captured in Wallace’s hut is now in our archives.
² Mr Wallace used to say that it was worth the journey to Borneo in order to eat the fresh fruit of the Durian (Rajah Brooke, 1899). Ed.
far from where the Wallace Ambon House may have stood. Fortunately the only huge python I ever saw was in Malaysia. It was in the hands of several stout and experienced snake handlers. Unlike the one described by Wallace, this python was docile, compliant and lethargic. Still, I kept my distance.

Best for the holidays,
Sincerely Yours,
JOSEPH ARDITTI

26.1.99
7 Dingle View, Bridgnorth,
Shropshire WV16 4JL

Dear Professor Gardiner,

The enclosed photograph shows the five fellows of the Linnean Society of London who revisited Linnaean Lapland in July 1998. From left to right they are myself, Roland Moberg (who with me led the 1988 re-enactment of the Lapland journey made by Linnaeus in 1732), Marco Ferraguti, Goronwy Wynne and Paul Strickland. The picture was taken at the Riksgransen Hotel close to the Norwegian border and the whole party, including non-fellows, saw the arctic-alpine flora at its very best. We are going one last time this summer (17–24 July 1999); anyone wishing to come should contact me or Tour de Force (Tel: 0181 983 1487).
May I say in conclusion how much I enjoy the lively debate and historical detail of *The Linnean* itself.

Yours sincerely,

JOHN PACKHAM

13.1.99

Cromwell Road,
London SW7

Dear Editor,

*What’s in a Name? (pt. 2)*

In an otherwise excellent account of the President’s address on Wallace to the 1998 anniversary meeting, a coloured plate of four butterflies mysteriously appears above the legend “Figure 6. *Heliconius*”. (*The Linnean* 15 (1): 25, 1999). The patent fact that not one of the butterflies is a *Heliconius* (Nymphalidae: Heliconiinae) calls for some correction and explanation. The species depicted are, from top to bottom and according to my good colleague George Beccaloni, *Methona confusa confusa* Butler (Nymphalidae: Danainae: Ithomiini), *Lycorea ilione ilione* (Cramer) (Danaini), *Patia orise orise* (Boisduval) (Pieridae: Dismorphiinae), and *Gazera heliconiodes* Herrich-Schaeffer (Castniidae: a moth!).

The picture is taken from a lecture slide I had made at The Natural History Museum some 20 years ago. It was intended to illustrate one of the mimicry complexes that Bates revealed in his classic Linnean Society paper, and that he and Wallace may have encountered together on the Upper Amazon. Clearly, the theory of Gordon et al. (this issue), that the very act of bestowing a name on an organism thereafter determines its biological properties, extends to misidentifications. Indeed, this is why, of all taxonomic sins, misidentification is the most pernicious because, even in the complete absence of genetic interchange, the biological characteristics of one organism are thereby transferred to another. Mimicry amongst this group of danaoid Heliconidae (to use Bates’ terminology), Leptalides (Bates again) and castniid moths (Castniidae of Bates) has been perfected (or negated?) at a stroke of the Editor’s pen.

Yours sincerely,

R.I. VANE-WRIGHT

---

1 The caption should have read "Wallace and Bates’ mimetic lepidoptera". As an ex-entomologist I consider myself to have been severely admonished. Ed.
British Museum
Oct. 11, 1842.

My dear Chaetognathophilus,

Doubleday and I have each subscribed sixpence in order to obtain for you a living "maggy with the many feet" should it be new - I hope you will name it Scolopendra Doubledayi - and will mention in a note both at the beginning and end of your description - how much you have been indebted to Adam White Esquire, assistant in the Natural History Department of the British Museum - Member of several learned societies for suggesting to you so opposite a name - now mind you, Newport.

I am very touchy at the Museum on points of manuscript names, as you will see by looking into the 9th volume of the Annals of Natural History, in a note appended to a description of a poor butterfly given by one, who with all his fault is the most lynx-eyed and diligent of our entomologist. The Scolopendra to be serious, is the banded one, I think, you described from before our collection. It is in a weak state owing to this dull climate - where Bentidactylous "non gaudent longitudine"

Yours sincerely,

Adam White
The Presidential tricorn hat

The original Statutes of the Royal Society, enacted in 1663, direct that:

"the President being in the Chair is to be covered, while speaking unto or hearing particular Fellows, not withstanding their being uncovered".

Samuel Pepys in his diary mentions this practice, pointing out that whilst in the Chair the President (wearing the large cornelian ring) kept his hat on except when addressing the Fellows. Hats of that period were either velvet or beaver, with a brim or rim.

The brim of the hat increased greatly during the reigns of Charles I and Charles II, becoming so broad that it was liable to hang down. Eventually, because of the inconvenience, one portion of it was turned up, either at the front, back or side, which

Statue of Linnaeus - high relief in marble, by Christian Erikson.
was called 'cocking' it. Soon two sides of the hat were turned up, and in the reign of William and Mary, a third portion, thereby forming the complete cocked or tricorn hat, which, from its three equidistant points – was called the Egham, Staines, and Windsor!

When Benjamin West in 1792 announced the royal approval of his election as President of the Royal Academy he ended his speech:

"therefore gentlemen, not on account of any personal merit on my part, but to do honour to the office to which you have so kindly elected me, I shall presume in future to wear my hat in this assembly".

The painting by H. Singleton of the Academicians in 1802 shows Benjamin West wearing a tricorn hat to distinguish him as President.

The President of the Antiquaries, like the President of the Royal Academy, wore a tricorn hat as a sign of his presidential office. Early on a ritual grew up whereby he solemnly donned it before admitting Fellows, after doffing it to make three bows, to his officers, the candidate for admission and the Fellows¹.

The custom was apparently brought to an end in the summer of 1829 when cocked hats were no longer worn. The 1782 Rowlandson drawing of the admission of a new member at the Antiquaries still has the old tricorn, although it is not in fact worn by the President. An engraving of 1812 shows him brandishing the newer type of cocked hat in one hand and the old tricorn in the other. To this day the former is placed on the table in front of the President at all meetings.

¹ When Lord Prudhoe came up for admission before a Vice-President whom he knew well, both dissolved into laughter when the huge cocked hat was placed on the latter's head.
The Antiquaries Club has two tricorn hats, one said to have been worn by Martin Folkes, the other by three Lord Chancellors. These are worn by the President and Treasurer when admitting a new member to the 'Cocked Hat Club'. The Lord Chancellor continues to wear a tricorn hat which he doffs when approaching the Woolsack.

Like the Presidents of the Antiquaries and the Royal Academy, the President of the Linnean Society also wore a tricorn hat. As late as 1848 the Bye-Laws still stipulated:

"the President being in the Chair, may be covered, while speaking to or hearing particular Members, notwithstanding their being uncovered”.

According to Gage (History of the Linnean Society, 1938) it is likely that “A.B. Lambert” was the last, when in the Chair, to wear the old tricorn hat. Lambert was a Vice-President from 1796 until his death in 1842. Towards the end of this period the tricorn hat, even if not worn, was always in front of him on the table. In 1823 the minute book records that, it cost seven shillings to have this hat 'boxed'.

There is, however, no certainty that Lambert was the last to wear the old tricorn or have it in front of him. What is more certain is that Dr. E.S. Russell was the first person to wear the new tricorn hat when he inspected the Ballot-glasses and Box at the Anniversary Meeting of May 24, 1941, although it was not until William Steam’s Presidency of 1979–82 that this hat was worn while admitting Fellows.

According to the Minutes the new tricorn was presented by a Fellow of the Society in 1941. Hearsay evidence suggests that this was D.M. (Duggie) Reid, Senior Biology Master at Harrow School (member of Council 1941–45 and initiator of Synopses of the British Fauna). Apparently Reid had read Gage’s 1938 History and concluded that what the admission ceremony had long lacked was a tricorn hat. This he rectified by buying one from Samuel French, the theatrical costumiers opposite Cambridge Circus, which he then smuggled into the basement of the Society. Having secreted it in a chest or cupboard he then ‘accidentally’ discovered it and produced it as a long-lost item of traditional dress. (As a leading member of the ‘Linnean Club’, Reid would have been conversant with all the nooks and crannies of the Society’s rooms). There was said to be some suspicion about its provenance at the time, but the President of the day (Russell), with no little embarrassment, was prevailed upon to wear it (see above).

The new tricorn has a rosette on its left hand side representing the three kingdoms of nature — red (animals), green (plants) and silver (minerals). Whether this rosette belonged to the original tricorn cannot be ascertained.

When I was persuaded to stand for President, one of my sponsors, Christopher Humphries, convinced me that I should enjoy wearing the new tricorn hat. Accordingly, I wore it first when appointing my Vice-Presidents (which included one C. Humphries)

1 The subterfuge was made easier by the fact that the Executive Secretary (O'Grady) was away on active service, eventually becoming a member of the 6th Airborne Division. I am indebted to Basil Harley for the hearsay evidence, obtained from his sponsor R.A (Rex) Graham when he was elected F.L.S. back in 1955. Duggie Reid had been Harley's biology master at Harrow, but he died in 1959 before Basil Harley had been able to quiz him about the truth of the story.
and thereafter throughout my Presidency when initiating new Fellows. Towards the end of my term we had the hat 'boxed'; on this occasion it cost £10.

**Sequel**

John Sly, a haberdasher of hats and a tobacconist writing in the *Spectator* (1712) remarked that he:

"was preparing hats for several kinds of heads that make figures in the realm of Great Britain with cocks significant of their powers and faculties – for lawyers and physicians they do but turn up to give a little life to their sagacity – whereas military hats glare full in the face."
Clearly, the wearing of a cocked hat was not only considered a mark of gentility but also denoted professional rank. Interestingly Doctors at the University of Uppsala wore tricorn hats from about 1720 until the end of the century. Moreover when receiving their doctorate they donned a ceremonial, green tricorn which was smaller and neater, with indented corners and more like a triangular apple pasty than the Egham, Staines and Windsor of the Presidential tricorn. Although we have no record that Linnaeus wore such a hat on graduation we assume he did so on becoming Professor of Medicine in 1741. What is more certain however, is that for much of the rest of his life Linnaeus wore a more elaborate tricorn, particularly on his botanical forays. Since a tricorn hat was the normal attire for the type of Homo sapiens it makes the wearing of the Presidential tricorn when admitting new Fellows all the more relevant.

BRIAN GARDINER
Greek myths corroborate hybrid origin for male-killers in the African Queen butterfly, *Danaus chrysippus*

In a recent publication in the *Biological Journal* (Smith *et al.*, 1998), we suggested that a maternally inherited male-killer trait in *Danaus chrysippus* results from the recent and extensive hybridisation of previously allopatric geographic races in Africa. We show here that this hypothesis is supported by independent evidence from Greek mythology. This additional evidence also provides support for the theory of nominative determinism in taxonomy, and shows the need for caution in the naming of new species.

All-female (thelygenic) broods in *D. chrysippus* were first reported by Owen and Chanter (1968) in Uganda. Originally attributed to meiotic drive (Smith, 1975), they have subsequently been shown to result from male deaths in the egg and early instars (Smith *et al.*, 1998). Male mortality in such broods is usually 100% but occasional males do survive and reversals of the trait have been recorded. Thelygeny appears to be restricted to a zone of overlap between different colour forms of *D. chrysippus* in a wide area of east and central Africa. In the rest of Africa, this butterfly is variously monomorphic for colour pattern and there are no records of all-female broods. Supporting evidence suggests that the differing colour patterns arose allopatrically and that the current polymorphism is the result of extensive hybridisation following recent sympatry. In Smith *et al.*, 1998, we develop a genetic model to explain thelygenic broods based on incompatibility between the nucleus and cytoplasm of different races. Of the five major races in Africa, the one which seems to be the odd one out is the orange *chrysippus* (formerly known as *aegyptius*) race which is monomorphic north of the Sahara, including Egypt.

In Greek mythology, Danaus and Aegyptus were the sons of Belus and the great-great-grandchildren of Io and Zeus. Io had been expelled from Argos by the jealous Hera after being seduced by Zeus, and she travelled extensively before settling in Egypt where she gave birth to Epaphus, the grandfather of Belus. Belus inherited the kingdom of Egypt from Epaphus and married Achinoe who gave birth, amongst other children, to Danaus and Aegyptus. The two brothers quarrelled over the Egyptian kingdom and Danaus, who had 50 daughters, felt threatened by Aegyptus, who had 50 sons. He fled from Egypt with all his daughters and settled back in Argos. The 50 sons of Aegyptus eventually followed him there and demanded to be married to his 50 daughters. Danaus had no choice but to agree, and he allotted his daughters to the sons first according to the ranking of their mothers, then by matching their names (Chrysippe was matched with Chrysippus), and then randomly. However, he secretly instructed them to murder their bridegrooms on their wedding night. All but one of the daughters obeyed their father and slew their husbands as they slept. Hypermnestra is believed to have spared her husband because he respected her virginity.

While there are important differences, the following similarities between the Greek myth and our model for thelygeny in *Danaus chrysippus* are striking. In both there are severely distorted sex ratios, a period of allopatry followed by sympatry, with subsequent male killing (and rare male survival) following mating between previously allopatric individuals. The opposite and complete distortion of sex ratio in the children...
of Danaus and Aegyptus is suggestive of meiotic drive, as were the early results of breeding experiments with *Danaus chrysippus*. Thereafter however, the evidence for male killing is unambiguous in both the butterfly and the myth. It is also interesting that it was mating with the Egyptian lineage that led to male mortality in the Greek myth, and that we are proposing that it is the Egyptian race of the butterfly that carries incompatible elements causing male-killing in crosses with other African races of *D. chrysippus*.

We discovered these parallels through a web-page on Greek myths and confirmed the details in Graves (1960), for whom the primary sources were Hyginus, Apollodorus, Diodorus, Siculus, Herodotus, Pausanias, Euripides and Strabo. Subsequently on reading Ackery and Vane-Wright (1984), we found that there were further links between Greek mythology and danaine biology. These authors quote Vere Temple (1946) as follows: “the males of this foreign family, when making love, hover over the desired one scatting upon her scented dust. This peculiarity gives them their name, which alludes, of course, to the legend of the imprisoned maiden Danae, whom Zeus visited in a shower of gold”. Ackery & Vane-Wright “sadly” reject this “romantic notion” on the grounds that the name Danaus could be traced back through Kluk (1802) to Linnaeus (1758), long before the discovery of the pheromone-transfer particles (since christened “love-dust” by Dietrich Schneider and Michael Boppré), which male danaines sprinkle on their female partners. They therefore attributed the etymological link between myth and butterfly to coincidence.

This conclusion now seems doubtful in view of the new evidence presented here and recent massive support for the theory of nominative determinism (see almost any issue of *New Scientist* in the last year or two). It is hard to believe that these links—between Greek myths and pheromones and male-killing in *Danaus chrysippus*—can both be purely coincidental. Although it is difficult to assign a formal probability to the null hypothesis in this case, it seems impossible to accept at standard levels of statistical significance. We therefore conclude that the choices of names for this species were self-fulfilling prophecies and must have contributed to both the origin of male-killers in its east and central African populations and to the evolution of its male courtship behaviour. If we are correct, then taxonomists should be careful when naming new species if undesirable consequences are to be avoided.

**Acknowledgements**

We are grateful to whoever posted the web-page on the danaines in Greek mythology on the Internet. We also dedicate this contribution to the late Dr. Denis Owen, the discoverer of all-female broods in *Danaus chrysippus*, and co-author of Smith *et al.* (1998), our good friend, and the broadcaster of a popular Radio 4 series in the 1980s called *What’s in a Name*.

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1 Linnaeus assigned distinctive and appropriate names to nearly 250 species of the genus *Papilio* derived from classical mythology. Every one of the names in the tenth edition of the *Systema Naturae* is found in the Fabulae of Hyginus. Linnaeus did, however, make mistakes. See John Lewis Heller, 1983: *Studies in Linnean method and nomenclature*, Verlag Peter Lang, Frankfurt (Marburger Schriften zur Medizingeschichte vol. 7) Ed.
IAN J. GORDON,
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Box 58, Gede-Malindi, Kenya.

DAVID A.S. SMITH,
Natural History Museum, Eton College,
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LORNA A. DEPEW,
East Africa Natural History Society

CLARE OWEN,
42 Little Whittenham Road,
Long Whittenham, Abingdon, OX14 4QS

REFERENCES

Dr James Barry

On 26th July 1865 the death occurred of Dr. James Barry, Inspector General of Hospitals. That the demise of such an eminent medic was not greeted with any of the mourning or out-flowing of grief for which Victorian society was famed may come as a surprise, for Barry, during a long medical career in the army, had been recognised as one of the greatest doctor-surgeons of the nineteenth century. He was reputed to have been the first doctor to have performed a caesarean operation in which both mother and child survived, and to have worked tirelessly to improve medical conditions and treatment not only for the soldiers but also the civilians in the neighbouring countryside, no matter what their race, colour or creed. Furthermore, he was someone whose knowledge of antiseptic requirements (to reduce contagion) was far greater than most people's in that period, including the darling of the medical profession, Florence Nightingale. It is quite astonishing to find that today there is no street, monument or ward named after Barry, one of Britain's great doctors.

Following Barry's death a woman was called to wash and prepare the body for the undertaker. She made an interesting discovery which had laid hidden like an unexploded time bomb for some sixty years. The doctor, who had spent nearly fifty years living with the army, was found to be female! The reaction of the army and medical professions was at first to deny the finding by declaring the woman who made the revelation to be a drunken sot. However, further investigation revealed the horrific truth — one of the most eminent doctors of the time was a mere woman. It was well known that the female brain lacked the parts necessary to allow women to become
doctors, surgeons or, indeed, much else. It was also found that Barry had had at least one child! Attempts were made to cover up the truth but to no avail.

Dr. Barry was interred at Kensal Green cemetery. Her simple stone reads “Dr. James Barry Inspector General of Hospitals Died 26 July 1865 Aged 70”

Not one reference to Barry’s medical work and achievements in the army and elsewhere. Not one word about Barry’s sex.

DAVID PESCOD

Annual Tour for Fellows of Kensal Green Cemetery

1837 saw the death of William IV, the accession of his niece Victoria, and the opening of London’s first necropolis, All Souls Cemetery at Kensal Green. At first glance the link between the two monarchs and a private burial ground would appear remote. However, the reputation of the cemetery, its immense popularity as the final resting place for the great and the good and not so good, and its continued private status – it is still owned by the General Cemetery Company – are firmly linked to royal deaths, deposits and burials. Augustus Frederick, Duke of Sussex, attended the funeral of his brother William at Windsor, a very dismal and chaotic occasion. The
Duke was so appalled at the state of the royal vault that he declared he would never be buried in it, and purchased, ahead of requirements, a large plot just east of the Anglican chapel on the main avenue at Kensal Green. On the opposite side of the main approach a similar plot was purchased for his sister the Princess Sophia. Queen Victoria bought a site on the west side of the chapel, but when Albert died she had a mausoleum built at Frogmore. Her site thereafter passed to her son Edward VII who in turn gave it to the infamous Duke of Cambridge who now rests in a pink granite mausoleum. The future of Kensal Green was assured. By 1840 many of the neighbouring sites had likewise been bought pre-need. The only requisite to spending eternity supine with the royals was money, and an extraordinary collection of people ranging from an equestrian performer, Andrew Ducrow, whose inscription starts, “Within this tomb erected by genius for the reception of its own remains......”, to the darling quack of the aristocracy, John St John Long, whose humble origins as the son of an Irish basket weaver, did not prevent him from claiming to have discovered cures for piles, TB and numerous other complaints, although his only connection with the medical sciences was colouring anatomical prints. Ducrow and Long had their monuments built in 1837.
Rubbing of the illegible monument to Wallich.

LIST OF FELLOWS OF THE LINNEAN SOCIETY OF LONDON
BURIED OR DEPOSITED AT KENSAL GREEN CEMETERY
(with the date of death).

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Burial/Burial Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sir William Beatty, Kt MD FRS</td>
<td>25 Mar 1842</td>
</tr>
<tr>
<td>William Henry Bentinck</td>
<td>6 Dec 1870</td>
</tr>
<tr>
<td>Robert Bentley</td>
<td>24 Dec 1893</td>
</tr>
<tr>
<td>John Lewis James Bonhote</td>
<td>10 Oct 1912</td>
</tr>
<tr>
<td>Richard Bright</td>
<td>16 Dec 1858</td>
</tr>
<tr>
<td>William John Broderip</td>
<td>27 Feb 1859</td>
</tr>
<tr>
<td>Robert Brown</td>
<td>10 Jun 1858</td>
</tr>
<tr>
<td>George Busk</td>
<td>10 Aug 1886</td>
</tr>
<tr>
<td>Sir Anthony Carlisle</td>
<td>2 Nov 1840</td>
</tr>
<tr>
<td>Hugh Cuming</td>
<td>10 Aug 1865</td>
</tr>
<tr>
<td>William Freeman Daniell</td>
<td>26 Jun 1865</td>
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<tr>
<td>Sir Henry Thomas De La Beche</td>
<td>13 Apr 1854</td>
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<tr>
<td>Sir Charles Wentworth Dilke</td>
<td>10 May 1869</td>
</tr>
<tr>
<td>David Don</td>
<td>8 Dec 1841</td>
</tr>
<tr>
<td>Hugh Falconer</td>
<td>31 Jan 1865</td>
</tr>
<tr>
<td>George Bellas Greenough</td>
<td>2 Apr 1855</td>
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<tr>
<td>Jabez Hogg</td>
<td>23 Apr 1899</td>
</tr>
<tr>
<td>Charles Dietrich Konig</td>
<td>6 Sep 1851</td>
</tr>
<tr>
<td>John Claudius Loudon</td>
<td>14 Dec 1843</td>
</tr>
<tr>
<td>Robert Marnock</td>
<td>15 Nov 1889</td>
</tr>
<tr>
<td>Archibald Menzies</td>
<td>15 Jan 1842</td>
</tr>
<tr>
<td>Sir William Molesworth</td>
<td>22 Oct 1855</td>
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<tr>
<td>John Morris</td>
<td>7 Jan 1886</td>
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<tr>
<td>George Newport</td>
<td>7 Apr 1854</td>
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<tr>
<td>Jonathan Pereira</td>
<td>20 Jan 1853</td>
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<tr>
<td>Sir John Ross</td>
<td>30 Aug 1856</td>
</tr>
<tr>
<td>Joseph Sabine</td>
<td>24 Jan 1837</td>
</tr>
<tr>
<td>Nathaniel Wallich</td>
<td>28 Apr 1854</td>
</tr>
<tr>
<td>Frederich Welwitsch</td>
<td>20 Oct 1872</td>
</tr>
</tbody>
</table>
Of more interest to Fellows of The Linnean Society are the monuments to Hugh Falconer, FLS, George Busk, FLS, and William Freeman Daniell, FLS, close by. A search, which is still continuing, of the cemetery’s 75 acres has so far revealed monuments to some thirty former Fellows including John Lewis Bonhote, Robert Brown, David Don, George Bellas Greenough, Charles Konig, John Claudius Loudon, George Newport (whose monument was erected by the Linnean and Royal Societies), Nathaniel Wallich, and Frederick Welwitsch.

The annual tour of Kensal Green Cemetery will take place on Wednesday, 8 September 1999 and will include a visit to the great catacomb, in which may be seen examples of coffin furniture spanning 160 years. The catacomb, which lies beneath the Anglican chapel, is still used for deposits. There are 2719 coffins deposited in the loculi and vaults with space for a further 1500.

For further details please write to: DAVID PESCOD, FLS, The Linnean Society of London, Burlington House, Piccadilly, London, W1V 0LQ

Library

We have been advised that Health and Safety requirements mean that access to the Upper Galleries of the Library is now restricted to Library Staff. The extremely low handrail up there is a problem we have not yet solved, although various possibilities are under discussion. Other planned improvements include new floor covering for the Lower Galleries where the ‘historic’ lino is now in shreds due to past cabling work. This should take place some time in the coming months. It may mean some short-term disrupted access to the Flora and Fauna sections housed in those Galleries, as uneven floors will need to be sorted out first. The summer will also see students at work cleaning and reshelving in the Reading Room and elsewhere. We are always glad to know of students who may be available for such work: we need registered students (age 16 and upwards) to work in teams for periods of 2–4 weeks between mid July and the end of August. We pay more than the minimum wage and the work varies from moving and cleaning books and journals to general “housekeeping” tasks in the Rooms of the Society. If you are interested or know of someone who is, please contact me before the end of April for ‘booking forms’.

We are grateful as always to all those who keep us up to date with publications we would not otherwise hold by giving us journals they are involved with, or do not wish to keep. We also welcome reprints. The list of donations which follows is for the period from October to the end of 1998. Those received after the beginning of this year will be listed in the next issue. This list does not include many items brought in for the last Book sale which were kept to fill gaps in our holdings.

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**Reviews**


In case there is any doubt this is not a book it is a CD-ROM, the first in a series to be produced by the British Lichen Society (in time they will cover the whole British lichen flora and compliment the Lichen Atlas fascicles).

The Lichen Society was confronted with this choice. Should the Lichen Atlas of the British Isles be in ‘hard copy’ or be produced as a CD-ROM? This was no easy
choice because such a venture had to follow the fine example set by The Lichen Flora of Great Britain and Northern Ireland edited by Purvis et al. (now in its second printing). The choice of a CD-ROM was made on the grounds of cost and in the belief that colour illustrations would be of a sufficiently high standard.

The CD-ROM requires a computer with access to Netscape or Internet Explorer. With Windows NT Explorer I had no difficulty bringing up the text and illustrations from the CD. Moving through the different files was easy and overall I found the information arranged in a very user friendly manner.

CD No.1 is on Parmelia and includes U.K. distribution maps, photographs, habitats, chemistry, keys, and a glossary of over 300 terms (the entries are very brief and I felt that examples could usefully be included in some of the entries).

A typical entry (there are 47 species) includes the names, habitats list, chemistry list, a key, information on the distribution (with a map), the substrate ecology, phytosociology/associated species, status and conservation, observations and references. There is very useful cross-referencing between species. The colour photographs for each species (up to four for each) can easily be enlarged and, yes, I was very impressed with the quality of both the colour and the clarity. The standard of the illustrations does justice to the many hundreds of photographs taken in preparation for this project.

This is indeed a quantum leap in the presentation of our understanding of this taxon and a tribute to the dedication and commitment of the members of the British Lichen Society. The decision of the Society to produce this as a CD-ROM will surely be welcomed by many and no doubt many CD-ROMs of this kind will soon be gracing the Linnean Library alongside the printed page.

IAN F SPELLERBERG

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The Field Studies Council has achieved a well deserved reputation for providing clear, straightforward keys for the easy identification of ‘difficult’ groups of British species of animals and plants. Some 24 of these have now been published by the AIDGAP project in Field Studies and also made available as individually bound offprints. These two keys are the latest additions to the series and both provide excellent, well tested keys for identification.

Colin Plant’s key for the identification of British Neuroptera, Megaloptera, Raphidioptera and Mecoptera is clearly aimed at the amateur entomologist and is full of useful information about this little known group of insects. His enthusiastic introduction sets the scene for lacewing studies in an informal style which is as attractive as it is informative. Similarly his appendices on collecting, preserving and
on nomenclature are directly and refreshingly written. The keys themselves are admirably clear and easy to use and, most importantly, the features used are precisely described and illustrated with the salient points indicated by arrows. This key is exactly what is needed and reading the introduction makes one want to join in the study of these interesting and little known insects.

John Crothers’ key to the major groups of British marine invertebrates takes on a much wider field with equal success. Providing a workable key for such a diversity of animal phyla down to Order is a formidable task and to have achieved it within the compass of 177 pages is no mean feat.

T.T. Macan produced such a key to freshwater invertebrates in 1959 in a book which has stood the test of time and is invaluable within its context. The marine fauna is of course much more diverse, yet Crothers has produced a concise and really useful key, full of accessory information where relevant. Of course the Annelida, Crustacea and Mollusca get pride of place, yet there is plenty of relevant information about the lesser phyla too.

The keys are stated to act as entry ports to the Linnean’s Synopses of the British Fauna or to other complete keys where relevant. As such, this key can be useful as an introduction or quite adequate in its own right.

Both these keys maintain the high standard set by the AIDGAP project and will be useful to students, professional biologists and amateurs alike.

R.C. FISHER


For small, highly vocal animals, good recordings are often more useful than good pictures. And CDs are much better than vinyl ‘LPs’ or cassette tapes for two reasons: almost instant access to any track and the ability to repeat easily. Both are extremely helpful, whether used for reference or as learning aids. CDs are, of course, also very robust and they have a clarity which is important in identification. However, technical excellence can easily be wasted if the original recordings are poor or if the material is badly edited. Here, however, is an absolute gem.

The discs are produced in association with a scholarly book by the same authors (reviewed separately in the Zoological Journal). They cover all 170 species, three subspecies and one hybrid, plus four cicadas, two toads and five birds that could all be mistaken for singing Orthoptera. With such a huge commitment one might forgive the odd weak example, but there just are none. Each track is introduced by name alone (a booklet gives an index and an introductory note); the excerpts that follow are crystal clear and remarkably free of the background noises that often intrude on ‘wildlife’ recordings. Most are calling songs (with some variants) but in many cases courtship and rivalry songs are also included. There is only one problem: because some songs are very high pitched, a good amplifier and speakers are needed to do them justice (headphones help) and even then much may depend on the listener’s hearing ability.
But this is hardly the fault of the authors and for those that can hear them these recordings will surely become the definitive collection.

DAVID PYE

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**Obituary**

**Frans Stafleu FMLS**

(8.9.21 – 16.12.97)

Frans Antonie Stafleu was born in Velsen, near the North-Holland coast, into a modest Dutch family. He attended elementary school in Bussum, followed by secondary education in Utrecht. He was already attracted to nature and joined the ‘NZN’ (Dutch Youth Society for Natural History) which still exists. There he met Victor Westhoff, later Professor of ‘geobotany’ at Nijmegen, and together they published what were among Frans’s first publications (see W. Greuter in *Taxon* 47 (1): 13–32 for a comprehensive list of his 645 publications). Frans entered university in Utrecht in 1939, first taking chemistry but soon switching to biology.

Following the difficult war years, on 21 June 1948 Frans finished his formal studies under Prof. A.A. Pulle by successfully defending his doctoral thesis before the Utrecht faculty: a monograph on *Vochysia*, woody neotropical members of the Vochysiaceae (Polygalales). In a series of subsequent publications he contributed substantially to the taxonomy of this family. In 1948 he was persuaded to go to Dutch East India (soon to become Indonesia) to become the geneticist of the Sugar Experimental Station at Paserorean in Java. He had recently (1947) married his fellow student Charlotte (‘Letty’) Corporaal and she followed him out in 1949. However, in less than a year they returned, arriving home in February 1950, just in time for their son Gerard to be born in the Netherlands.

Upon his return he was given the choice of either joining the Leiden (Rijksherbarium) team under Professor C.G.G.J. van Steenis, to help compile *Flora malesiana*, or taking up a position with his old Institute of Systematic Botany under Professor J. Lanjouw at Utrecht. Frans chose the ‘old nest’, as he expressed it.

The International Botanical Congress convened in Stockholm that year and inaugurated the International Association for Plant Taxonomy (IAPT) with Lanjouw as the first Chairman. An International Bureau for Plant Taxonomy and Nomenclature, to be based in Utrecht, was to coordinate all activities of IAPT, in particular those relating to nomenclatural matters governed by the International Code of Botanical Nomenclature (ICBN). Frans was to head the bureau and edit the special journal, named *Taxon*, which first appeared in 1951. *Taxon* became the most important journal for all matters of nomenclature and a leading periodical in plant taxonomy generally. He edited it for more than 40 years, until 1992. He made numerous contributions himself, especially book reviews which were eagerly awaited by all in the field.

The bureau was also given the task of encouraging the compilation and publication of useful indexes and bibliographies for taxonomic botany. A series of publications “for the use of taxonomists” appeared after 1952 under the name *Regnum Vegetabile*. 
We should first mention the Code, then a sub-series called Index Herbariorum, with lists of plant collectors, their collections and an index of the world’s herbaria. The latter is now in its 8th edition and contains information about herbaria, their collections, collectors and botanists worldwide. Other major works in this series are Index muscorum (1959–1972) and Index nominum genericorum, commonly known among plant taxonomists as ‘ING’ which now contains c.63,500 entries. During Frans’ lifetime, the Regnum vegetabile series reached a total of 134 volumes, but in later years he became less involved and only approved information for inclusion.

A major task of IAPT was and is the coordination of procedures leading to the adoption of a revised International Code of Botanical Nomenclature at the International Botanical Congresses. Its first Chairman was J. Lanjouw, who was also Rapporteur-Général of nomenclature during four consecutive congresses, as well as Chairman of the Editorial Committee for the ‘Code’. Frans Stafleu was Secretary of IAPT and Vice-Rapporteur in Paris (1954), Montréal (1959) and Edinburgh (1964), after which he took over as Rapporteur-Général in Seattle (1969) and Leningrad (1975) and as Chairman of the Editorial Committee. He was also Secretary (1959–1964) and then Chairman (1981–1993) of the General Committee of IAPT. The last congress he attended was Berlin (1987).

His work for IAPT led to involvement in the International Union of Biological Sciences (IUBS), first as Treasurer (1964–1967), then Secretary-General (1967–1970) and finally as Vice-President (1970–1976), as well as Secretary of the Division of Botany of IUBS from 1954–1982. The culmination of his career as an executive in these governing bodies of the natural sciences came with his appointment (1970–1974) as Secretary General of the International Council of Scientific Unions (ICSU), where he was involved in the ICSU-UNESCO project to establish a worldwide network of information systems in the natural sciences.

Closer to home, in 1965 Frans was appointed ‘extraordinary’ Professor in Fundamentals of Systematic Botany at the University of Utrecht (‘extraordinary’ Chairs in the Netherlands were part-time appointments). Exceptionally, in 1977 he was appointed to a personal title of Professor, proposed by the University in gratitude for his outstanding services to biology as Secretary General of ICSU. It meant that he was virtually free to use his Chair as he saw fit. He only sponsored one Ph.D. student, Dr W.D. Margadant (1968) whose dissertation, not surprisingly, was titled Early Bryological Literature and, while he had no teaching obligations, he taught graduate students in 1966–1967. He got Margadant a job at the famous Hunt Botanical Library in Pittsburgh, Pennsylvania, an institute with which he kept a close relationship for many years. At this institute, which grew out of the love for botanical art and bibliography of a millionaire’s wife, and keen to be associated with a scholar of Stafleu’s repute, he must have had almost princely receptions on his regular visits and we can be sure that he did not mind playing the part.

In 1973, he was appointed a member of the Royal Netherlands Academy of Science. It was around this time that Frans began to suffer repeated attacks of migraine. On medical advice, he decided to drastically reduce the number of intercontinental flights and to forgo his much savoured gin-and-tonic. These restrictions ended his involvement
with ICSU and he shifted his attention back to the Netherlands. His activities in the Academy have been particularly meritorious; from 1978–1984 he was its General Secretary-Treasurer as well as Treasurer of the Physics section. His international experience made him an authoritative manager with decisive powers and his influence led to important changes in the functioning of the Academy's scientific institutes. He was honoured with the Academy's medal upon his retirement from Council. From 1983–1986 Frans was Chairman of the Institute of Systematic Botany at the University of Utrecht. Upon his retirement he was honoured with an International Symposium on Tropical Botany which was attended by many colleagues from around the world.

Frans Stafleu was a writer about botanists, often providing introductions to facsimile reprints of books by famous botanists, which sharpened his skill and widened his erudition. These included biographies of M. Adanson (1963–68), C.L. l'Héritier de Brutelles (1963), A.P. de Candolle (1963), A.L. de Jussieu (1964), F.A.W. Miquel (1966) and B. Delessert (1970). This work culminated in the classic *Linnaeus and the Linnaeans* (1971), a book in which he demonstrated a thorough knowledge and understanding of 18th and early 19th century botanical writing. It is important for its analysis of the transformation of natural history as a science from an essentialistic and aprioristic viewpoint to a nominalistic and empirical approach, as exemplified by botany. According to Stafleu, Linnaeus can be seen as the pivotal figure in this transition.
In 1973 Frans was persuaded to begin working on a new edition of his Taxonomic Literature, supported by appropriate staff of the IAPT secretariat in Utrecht and with some help from the Smithsonian Institution. He was also intellectually ready to make this his magnum opus. This book, known by botanists as TL-2 runs to 7 volumes totalling nearly 7000 pp. and, as if that was not enough, its first volume (letters A–G) was given a Supplement adding a further 2000 pp. True, Frans had a co-author and other help, both for TL-2 and its Supplement, but no one will dispute that he remained the principal author throughout all the volumes, right to the end. As he himself remarked, with typical mild irony, “Analytically inclined reviewers will discover certain biases; these must be attributed to the limitations, idiosyncrasies and background of the senior author.” (Introduction to Vol. 1 of TL-2, p. viii).

It is perhaps appropriate to outline the importance and scope of TL-2 and its Supplement to other biologists, especially systematic zoologists, who must surely envy botanists for having such a comprehensive reference work available. In systematic biology, as in other disciplines, scientists need a large library, in our case dating back to Linnaeus and sometimes beyond. We also need to know a lot of things about botanical authors and their publications, such as itineraries of collecting trips, locations of herbarium collections and types of described taxa, exact dates of publications, contributions to ‘composite works’, examples of handwriting to identify herbarium labels etc. All of this and much more can be found in TL-2, arranged in alphabetical order under the botanists’ names. The information is organized in a highly economic way, so as not to repeat what can be found elsewhere. Frans stressed, in the Introduction to the first edition, that the word guide (his italics) in the sub-title is all important, so when you need a 19th century botanist’s itinerary, to find out where he collected his plants because old herbarium specimens do not often give such details, TL-2 lists all the biographical literature available. There are a few limitations: no publications after 31 December 1939 have been entered and neither will one find publications which appeared in journals. One may regret this, but it is easy to see why it had to be done: Frans would otherwise never have got beyond A or D. However, under nearly every author, one finds further bibliography, to such an extent that he rightly described his work as a “bibliography of bibliographies”. TL-2 is thus a gateway to a library of information. Together with its Supplement, some 7500 authors and 20,000 publications have so far been included. Who can reasonably ask for more after such a herculean effort?

Frans Stafleu was a man who liked to be in the limelight and had ample opportunity during much of his career, attending prominent functions and receiving many honours. He was made a Knight in the Order of the Dutch Lion, Doctor honoris causa at the University of Bergen, Foreign Member of the Finnish Academy of Sciences and of the Linnean Society of London (1968), Foreign Fellow of the Botanical Society of Edinburgh, Honorary Foreign Member of the American Society of Plant Systematists, Corresponding Member of the Botanical Society of America and Honorary President of the 14th International Botanical Congress in Berlin (1987). Among other awards he received the Willdenow Medal from the Botanischer Garten und Botanisches Museum in Berlin (1981), the Founder’s Medal of the Society for the History and Bibliography of Natural History (1986), the Engler Medal in Gold from IAPT (1987),
the Distinguished Service Award from the New York Botanical Garden (1989) and the Honorary Key to the city of Nisjnii Novgorod in the former USSR.

However, his true passion was surely the bibliography and biography of botany and when everything had been handed over to his chosen successors, he still devoted his time to it, in the end against the odds of a failing memory and terminal illness. This was probably the main reason why he never did write the biography he had wanted to do, perhaps most of all: that of Adolf Engler, and chose to work on the Supplements to TL2 instead while he still could.

For most who knew him, Frans was the hard working, rational intellectual, seemingly without emotions although certainly not without sympathy towards others. He valued hard work and he expected it of others. He abhorred mediocrity in general and sluggish, indecisive people in particular, but recognised and tried to encourage talent and ambition when he could. He probably irritated people with his resoluteness in decision making in a time when ‘democracy’ had become the politically correct procedure for nearly every intended action. He had a keen knowledge of people and could sometimes be unduly harsh in his critique; yet he also had a very good sense of humour and felt usually most at ease in a friendly, but often mildly ironic mood.

In his final years, withdrawn from all official duties as well as from the numerous functions he had attended in his various capacities, an unexpected change in his personality seemed to manifest itself. Now that his memory and analytical capacities were slowly deserting him, his emotional side could manifest itself more freely.

With the death of Frans Stafleu biology lost one of its most prominent scientists, but he left a legacy in particular to botany for which we are grateful.

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