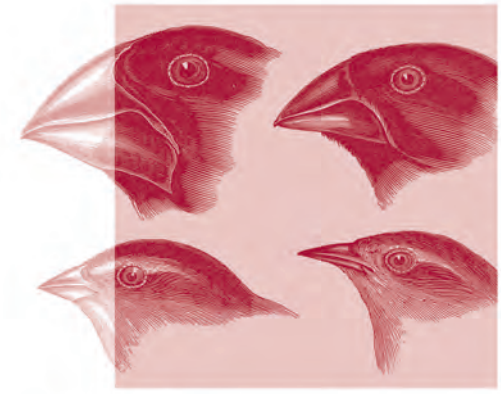
The LINNEAN SOCIETY of London

The Linnean



NEWSLETTER AND PROCEEDINGS OF THE LINNEAN SOCIETY OF LONDON

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A living forum for biology

THE LINNEAN SOCIETY OF LONDON

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THE LINNEAN

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Editorial

This issue of *The Linnean* contains two articles dealing with botanical nomenclature. The first concerns a decision taken at the XVII International Botanical Congress in Vienna in 2005 when action was taken to conserve the name *Acacia*. Gerry Moore argues in his article that in order for the action on *Acacia* to have been valid the Section needed to approve through a majority vote to first, suspend the established rules of procedure and, secondly, adopt a new rule allowing a motion to be passed with only a 40% minority, positive vote. Since neither occurred he concludes that – "the ayes didn't have it".

The second article concerns the identification of *Erica hirsuta* which Linnaeus placed in synonomy under *E. ciliaris*, the "ciliated" or "fringed" heather. Previous to Linnaeus, Bautin had listed *Erica Hirsuta anglica* in his tome of 1623. Charles Nelson endeavours to convince us that *Erica hirsuta anglica* is indeed a distinct species and not synonymous with *E. ciliaris*.

Finally, there is an article concerning zoological and botanical illustrations of the 19th Century which surveys the changes in printing techniques from large, hand-coloured engravings, via lithography, colourists and chromoliths to nature printing and concludes with the advent of photography.

BRIAN GARDINER

Society News

Society meetings since January have ranged far and wide in subject matter, from Anthea Gentry's beautifully illustrated and informative talk on *Linnaeus' materials of mammals and birds* through a wide range of other topics. Most have had a good attendance and all were marked by vigorous discussion. The first of the new series of 6th form lectures by Alastair Land, reviewed what "Explore" could mean, with examples from both the great geographical explorers to those exploring at microscopic and atomic level. All have write-ups on the web site should you wish to check on something you missed or need reminding of what you heard!

Our Darwin and Wallace 150th celebrations on 1 July 2008 are rapidly approaching and, far from our events being "modest", as mentioned in a letter to *Nature* Vol. 451, published on 28 February 2008, we have decided to combine it with our annual "conversazione" or "President's Reception". This will enable us to invite guests and widen awareness of the significance of this date in evolutionary biology. Two presentations, by Professor Alan Orr and Professor Gareth Nelson respectively, will bring us forward from 1858 to the present day. Two days later a major international conference being organised by Professor David Cutler and Dr Frank Ryan will discuss "The driving forces of evolution". The problem with both events is likely to be one of accommodating all who wish to attend, so do register early. Both will be as major event as we are capable of managing! At some stage the Society will also be presenting Darwin-Wallace medals, an event that only takes place every 50 years, the last awards being made in 1958 and the medal being struck and first presented in 1908.

Before that there will be the second 6th form lecture on 24 April, the Hooker lecture on 8 May and a number of other meetings, both in the UK and elsewhere. Please check the updated web programme as the talk by Dr Evan, originally scheduled for 12 June, has now been postponed until 10 July. We are also actively involved in a number of co-sponsored events, again not all on the printed programme. Events over the summer and early autumn include involvement in the International Zoological Congress in Paris and a third 6th form lecture, among others.

Fellows may be interested to know that the Linnaean cultured pearls (the first known examples) have now returned from their world tour as part of the travelling "Pearls" exhibition. They have been seen by nearly 1,500,000 people during the course of that exhibition. We will put them on view for Society events in future, whenever there is a suitable occasion.

The long-awaited building work in the Library Reading Room has now begun and visitors will find the hall, stairwell and banisters all protected against incoming building materials.

The Reading Room itself has a lowered ceiling of scaffolding and much of the book stock in the galleries is inaccessible behind protective sheeting. The plan is for the structural work to be finished by the time of the Darwin-Wallace celebrations, even if redecoration is only partially complete. A "hard-wired" projector and drop down screen will be in place in the Reading Room to permit us to relay talks from the Meeting Room to accommodate additional participants. This should provide better images and sound than previous attempts using a wireless connection.

At the moment I seem destined to " keep the seat hot" for a future Executive Secretary but "watch this space" for any changes!

GINA DOUGLAS
Acting Executive Secretary

Presentation of the Tercentenary Medals by HRH The Princess Royal

The last Tercentenary event in 2007 occurred on 13th December when HRH Princess Anne, The Princess Royal, visited the Society to present three silver Tercentenary Medals, commemorating the three centuries since Linnaeus was born, to three internationally-renowned biologists. The afternoon's proceedings opened with the Society's President, Professor David Cutler admitting HRH The Princess Royal as an Honorary Member of the Society. Her Royal Highness signed the Roll & Charter book on a specially-designed page (see opposite) depicting "Queen Anne's lace" (*Anthriscus sylvestris* (L.) Hoffm. on either side of her armorial achievement at the top of the page, together with a pink ribbon forming the letter "A" on either side at the bottom tying together *Linnaea borealis* L. and the Society's crest.

The medallists, selected by Council for their major contributions to the science of Natural History and for being outstanding and effective communicators of the subject, were Sir David Attenborough CBE, Hon FLS, FRS, CH; Professor Steve Jones FLS and Professor Edward O. Wilson FMLS, ForMemRS. Their citations were read by

Professor Gren Ll. Lucas, Dr Sandra Knapp and Dr Vaughan Southgate respectively, and after each presentation, the medallists replied. These presentations were followed by an address by HRH Princess Anne to the Society.

Fellows and guests then proceeded to the Library where, after Princess Anne and the medallists had reviewed the dies from which the medals were caste, Her Royal Highness then circulated around the room, individually meeting and chatting to around 100 Fellows who gathered in small groups for introductory purposes. During this, tea and cakes were served to everyone present. After the departure of Her Royal Highness, wine was served, concluding a very successful event and a very fitting one with which to conclude our Tercentenary celebrations.

The Tercentenary medals were designed by Felicity Powell who "wanted to show something of the beauty and lucidity of Linnaeus' classification system and also to

The medallists – from L to R Professor E O Wilson, Sir David Attenborough and Professor Steve Jones – admiring the medal dies with Her Royal Highness.

The Tercentenary Medal

suggest something of his character; a portrait not just of how he looked but touching too on the way he thought and has continued to inspire." One side of the medal is modelled on Ehret's original illustration of Linnaeus' *Systema Naturae*, which Felicity arranged to spiral out from a profile of Linnaeus himself. The form of the spiral is based on that found in shells and many other life forms in the natural world, but also, in this case, alludes to the ever-continuing contribution and influence of Linnaeus' work. The word "illustrat" (he illumines) which ends the spiral pays homage to Linnaeus' great gift as a teacher and communicator in his lifetime, and also indicates that his great works continue to shed light". The obverse depicts Linnaeus' own drawing of Andromeda from his Lapland journey which Felicity chose "because the freshness and liveliness of the original drawing ….. is so striking and full of character. It has wit and warmth and is a delightful play on a memorable and poetic visual metaphor derived from close observation in the field. Although in his original drawing Andromeda seems in peril, ultimately it is a wonderfully inspired and celebratory image".

JENNY EDMONDS FLS

Sweden's Cool Conclusion to the Linnaean Tercentenary

Sweden concluded its Linnaean Tercentenary by following in Linnaeus' footsteps to Lapland to hold a national celebration; however, this was in Kiruna and Jukkasjärvi, places to which he strived but never reached. So on 14th December I flew to Kiruna via Copenhagen and Stockholm with my husband David and Pieter Baas FLS, arriving in deep snow around midnight where the temperature was not the -25° C that we had expected but an unseasonably warm +5° C!

ICEHOTEL reception

The next morning we headed out to the Swedish Institute of Physics in Kiruna for a Conference organised by the University of Umeå on "The Possibilities and Boundaries of Science – Then, Now and in the Future" which featured a number of interesting papers and a panel discussion during which science, its scope and possible limitations were discussed particularly in view of the need to inspire the next generation of scientists to work towards exciting new goals. The 'star' of both the Conference and panel was the first and only Swedish astronaut Christer Fuglesang, who used footage of his space flight for an inspirational presentation. We then headed to the ICEHOTEL in Jukkasjärvi where I took part in another Press Conference, this time going solo with the opportunity to expound on the importance of our collections, and how we reviewed our contribution to the Tercentenary year.

Next we dressed into our thermals for the evening Party – both outside in the snow and inside in the temperature controlled (–5ºC) Ice Arena, in the presence of HRH King Carl XVI Gustaf and HRH Queen Silvia. The theme of the party was the curiosity and creativity of Carl Linnaeus, combined with the ice masses of Lapland. It was a magnificent occasion portraying a world of ice, snow, light and sound, with amazing entertainment portraying the northern lights, music – including the specially composed Symphonia Linnaei by Ralf Lundsten, drinks served in ice glasses and wonderful food. During the evening the National Linnaeus Commission awarded some 30 Linnaean medals to those who had made major contributions to the Linnaean Tercentenary, including Carl-Olof Jacobson, Mariette Manktelow and Roland Moberg – all FLS's. The party was also an opportunity to 'mingle' and to see so many Swedish friends whose company many of us have enjoyed over the past year. The end of the official party saw the start of an unofficial one in a

Dressed for dinner!

Linnaeus carved in ice.

grand Tepee complete with many friends, open fires, more refreshments and singing.

The next day included an exploration of Jukkasjärvi itself and a tour of the LKAB Iron Ore Mine in Kiruna, the regional centre of Lapland. The LKAB mining activities, essential to the economic prosperity of the region, are resulting in unavoidable subsidence, so the entire town is to be moved to a safer location by the mid 2030's. Finally, after an unforgettable last night sleeping on ice in the actual ICEHOTEL, and an early morning dog sled ride across the Torne River from which the ice is annually harvested, we headed home, exhausted but elated to have been part of Linnaeus's birthday celebrations both in Sweden and the UK.

JENNY EDMONDS FLS

Development News

I have been delighted with the results of the Tercentenary Appeal to our Fellows and thank you very much for your support and encouragement towards achieving our proposed projects. Together with the in-house team I have now completed the preparation and printing of the Linnean Society fundraising material and am moving ahead to develop our individual approaches to funding agencies and individuals. No doubt the current financial climate, coupled with the increased competition due to severe recent Government funding cuts, will make this a difficult task. I would very much like to encourage you to help me by identifying opportunities for approaches and to also introduce me to any members of foundation boards or trusts so that I can develop personal links. If you have any recommendations or suggestions for me to follow through for any of our proposed projects, please let me know at elaine@linnean.org If you are interested in having a set of our general fundraising material – please also do let me know.

We have had a busy start to the year in our communication activities and have received international coverage for two recent articles published in our journals. The article "New Genus of Self-destructive Palm found in Madagascar" was jointly released with the Royal Botanic Gardens, Kew and Wiley-Blackwell and was covered in over 100 articles including the BBC News website, CNN, Fox News, National Geographic, *The Independent*, *New Scientist* and *The Times*. "A giant rhinocerotoid (Mammalia, Perissodactyla) from the Late Oligocene of north-central Anatolia (Turkey)" which questioned the isolation of Anatolia 25 million years ago through the first finding of a giant fossilized rhino bone, was again widely covered. The press releases can be viewed on our website at *www.linnean.org /media and events*.

The International Association for Plant Taxonomy (IAPT) has awarded the prestigious Stafleu Medal to Dr Charlie Jarvis HonFLS for *Order out of Chaos: Linnaean Plant Names and their Types* (2007). The triennially-awarded Stafleu Medal

is given "for an excellent publication dealing with historical, bibliographic and/or nomenclatural aspects of plant systematics". In speaking of the award, Professor David Mabberley FLS, President of IAPT and Keeper of the Herbarium, Library, Art and Archives at the Royal Botanic Gardens, Kew said that "the Honours Committee of IAPT was unanimous in making this award, considering *Order out of Chaos* to be the finest germane book to come before them for many years". This landmark work was published in May 2007 by the Linnean Society of London and London's Natural History Museum to mark the tercentenary of Linnaeus' birth, and is the culmination of more than twenty-five years of research.

Kate Longhurst is continuing to develop the website and you will see that there is a new section on Darwin and Wallace. Included is additional biographical information, the "Darwin-Wallace Collection" containing articles on Darwin and Wallace previously published in *The Linnean*, and new web links for additional information.

The Cambridge University Student Conference on Conservation Science takes place later this month and the Society is participating in the poster event "Who's Who in Conservation 2008" to increase awareness of our activities. We are also delighted to be associated with the 2008 LAPADA London Antiques Fair which will be held at 6 Burlington Gardens during 8–11th May. The Society is contributing to the lecture programme with a talk on the 11th May entitled "Voyages of Exploration: discovering and collecting the natural world". More details will be posted on the website shortly.

Thank you again for your support and encouragement for our many and varied activities.

ELAINE SHAUGHNESSY

Gina's Farewell

At the end of December 2007 Gina Douglas officially retired from her post as Librarian & Archivist of the Society. The meeting that was held to mark this event reflected the breadth of Gina's enormous contribution to the study of natural history, not just her work for the Linnean Society. The proceedings were chaired by the President, Professor David Cutler, who began by reading a letter from John Marsden, a former Executive Secretary of the Society. John emphasised Gina's dedication to the Society as a whole, rather than just to the Library. She has always been a model of "flexible working" and a tower of strength in helping to deal with the foibles of our ageing building. She has offered the hospitality of her own home to visiting academics, provides cakes for every evening meeting and marshals teams of volunteers and summer students to sort manuscripts and clean books.

Dr Charles Nelson then spoke of Gina's role in the Society for the History of Natural History. She has been on their Council since 1988, has served three terms as Vice-President and is currently the Meetings Secretary. SHNH meetings have always been a pleasing combination of scholarship and conviviality which has continued during Gina's tenure. Lynda Brooks then spoke about Gina's contribution to the Linnaean Correspondence Project, an international collaboration that is making all Linnaeus' letters available on the web. Gina has arranged and supervised the

conservation and digitisation of the Linnean Society's 4,000 letters. The website was demonstrated live to the meeting and can be interrogated from *http://linnaeus.c18.net/*

Professor Sam Berry then spoke about Gina's contribution as Secretary to the Trustees of the Percy Sladen Memorial Fund which provides small grants for field work abroad. Administration of the fund has become much more efficient under Gina's secretaryship, as she weeds out the whackier applications, such as one for studying the link between Coca Cola and sperm motility! and thus saves Trustees'time.

Carol Gokce outlined Gina's influential role from the very beginning in another international collaboration with the aim of producing a comprehensive online catalogue of Linnaean works to facilitate research for scholars worldwide. Gina approached the Council of the Linnean Society and secured funding for its development so The Linnaeus Link Union Catalogue is now up and running with 1,580 records currently available (*http://www.linnaeuslink.org/lluc/)* from British and European institutions. Susan Gove, the Collections Secretary, then read a tribute from Charlotte Tancin, a member of the Council of Botanical and Horticultural Libraries in the USA who described Gina as "a librarian's librarian. Not only has she represented the Linnean Society's library all over the world, but she has long championed an increase of communication and information sharing among libraries, and has actively worked to help librarians, scholars, archivists, scientists, artists and others connect with each other to consult on common interests".

After refreshments the meeting re-convened to hear from Roger Mills, President of the European Botanical and Horticultural Libraries Group which now has 58 member institutions in 22 countries. Gina has attended almost every meeting since the group's inauguration. Roger presented Gina with an honorary life-membership of EBHL, the first to have been awarded. Pilar San Pio, Archivist at the Botanic Gardens, Madrid also spoke about Gina's role in fostering international relations through her summer student programme. Each year Gina organises a team of young people from across the globe to work on cleaning books and relocating library materials at the Society. Many enjoy Gina's hospitality during their time here and return home with fond memories of the Stockwell B&B. Several of the students have gone on to pursue careers in libraries or archives. Pilar's talk was illustrated with many photographs of the youngsters at work in the Library and with their messages to Gina on her retirement. Geoff Boxshall, Vice-President of the Ray Society, on whose Council Gina has served since 1999, spoke about that Society and said that Gina's encouragement and advice has been invaluable.

Finally, Gren Lucas spoke about Gina's commitment to this Society over so many years and the fact that she has always "gone the extra mile" for readers and Fellows. He reckoned that, on average, Gina is acknowledged in 10 new publications per year, which gives some indication of her influence. Gina was then presented with several retirement gifts and, in her response, thanked all the speakers and paid special tribute to Gavin Bridson, her mentor when she first joined the Society, who had sadly died just a few days earlier. The meeting then repaired to the Library once again for a convivial reception. A recording was made of the proceedings and copies of the DVDs may be borrowed from the Library.

LYNDA BROOKS

Library

The period covered here, from December 2007 to the end of February 2008, has seen major changes in the Library. At the end of the year, Gina Douglas retired from her post as Librarian and Archivist after 23 years' service to the Society. Rather than winding down towards retirement, she became the Society's Acting Executive Secretary in September 2007 and fulfilled both roles until the end of the year. She now continues as our Acting Executive Secretary and, once that post is filled, promises to return to the Library as our Archivist Emerita.

The other major change in the Library has been the beginning of the long-anticipated major building works. There is now a scaffolded work-platform spanning the top of the Reading Room which is facilitating the replacement of the glass ceiling and the installation of air-filtering equipment in the roof-space. The Library continues to function beneath its wooden carapace and, although we have been warning potential Library visitors of possible disruption, none have yet been daunted by the hammering and sawing. Our stalwart volunteers also continue to work in these less-than-ideal conditions and when the overhead lighting failed recently, on a particularly gloomy afternoon, they simply resorted to table-lamps and carried on – presenting a wonderfully Dickensian picture to amused observers.

Before the scaffolders moved in, the Library was looking at its best for the final event of the Tercentenary year, the visit of HRH The Princess Royal. The reception that followed her acceptance of an Honorary Fellowship and the presentation of the Tercentenary medals was held in the Reading Room. One of the display cabinets featured the artwork and dies for the medals and another contained the Linnaean Herbarium specimen of Queen Anne's Lace – one of the plants chosen by the College of Arms to be depicted on the decorated vellum leaf signed by the Princess Royal.

Ben and Kristine created other displays to accompany evening meetings, most notably finding some striking images to illustrate Anthea Gentry's talk on Linnaeus' mammals. For a World Land Trust reception in January they displayed books on coffee, together with botanical drawings of the coffee plant and herbarium specimens.

The stream of visitors has reduced from the high levels we experienced during 2007, but we were particularly pleased to welcome Ulrike Mebus and her family to the Society in February. Ulrike is the Curator of Visby Museum and hosted a most enjoyable visit there for the Linnean Society Fellows who took part in the Gotland trip. It was very pleasant to be able to reciprocate in some small way by giving her a personal tour of the Linnaean Collections Store.

As well as being busy with general Library duties and image supply over these three months, Ben has also been involved with various technical tasks to do with Linnaeus Link and our Heritage library management system. He and Julia Hoare have been setting up the necessary links to load Berlin-Dahlem's Linnaean records into the Linnaeus Link Union Catalogue and he has been liaising with the staff in Berlin to discuss harvesting problems. He has also been testing the system prior to its migration from the Natural History Museum to the University of London Computer Centre, which will host the system for the Society. A significant increase in the number of people accessing our online library catalogue was occasionally resulting in enquirers

being frozen out with the message that all the available licences were in use. Our apologies if you experienced this problem. Ben has now negotiated the purchase of extra licences which should be sufficient for the foreseeable future.

During these three months the Library has been open for 57 days and there have been 140 visitors, giving an average visitor level of 2.5 per day. 87 of those visitors were Fellows. Curatorial visits to the Linnaean Collections Store numbered 110 and there were 40 other Collections Store visitors and a group visit of 35 members of IDS.

LYNDA BROOKS

Donations

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Correspondence

FROM: Nancy Macdonald Jordan 2302 Bastrop St Houston, Texas 77004
nancymacdonaldjordan@ gmail.com

Dear Mr. Gardiner, I was fascinated to find on a Google search your article on William Macdonald, M.D. in Volume 19 - January 2003. Your article put together some genealogical mysteries I had been contemplating for years.

From your article, I was able to establish that William Macdonald (b. 1797 N. Uist Scotland) was the grandfather of a rather notable American, Charles Blair Macdonald (b. 1855), who is known as the father of American golf and who was recently inducted into the PGA Hall of Fame. It is well known that Charles Blair Macdonald was sent at the age of 16 to St Andrews to live with his grandfather William and attend college, but not much else was known of his Scottish roots. Apparently, C.B. (as he was known) spent more time learning the game of golf from "Old" Tom Morris and "Young" Tom Morris than attending class, and upon his return to America, he established the first American golf course in Lake Forest, Illinois. He went on to be the architect of over 20 acclaimed golf courses in the US and Bermuda, although by profession he was a stockbroker. He also built three estates, all named Ballyshear, one in Chicago, one in Long Island, NY, and one in Bermuda. Several books and articles have been written about him and his estates, yet no author has been able to connect the name of his estates with the home in Ballyshear, Southend, Argyll owned by his grandfather, William Macdonald. So thank you for including that in your article.

Personally, I am working on the assumption that William Macdonald was the uncle of my great great grandfather, Dr. Angus Macdonald, who was an OB-GYN in Edinburgh and died in 1886. I was hoping you might have additional information that may lead me to the name of William Macdonald's father. That is the next blank name in my family tree and I would greatly appreciate any further information you may have. Whoever he is, he was the ancestor of an amazing number of physicians in the UK that continues to this day.

More from the archives

The following two letters were written in 1818 by the Rev. Revett Sheppard, FLS, a Suffolk country parson. The first is addressed to Dr W.G. Maton.

Sir,

In the course of a walk on the banks of the River Gipping at Baylham January 1st 1818 I shot a fine specimen of the common heron (Ardea major) when a circumstance occurred which you will perhaps not think unworthy of being laid before the Linnean Society.

My two little boys who accompanied me undertook to carry the heron alternately, and it was very remarkable that wherever the bird chafed against them, their clothes were coloured with powder of a light blue colour; and upon my observing this, and shaking the feathers against my coat, that was also besprinkled in the same manner.

I call this a remarkble circumstance, because among the many passages objected to in Mr Bruce's work, his assertion of the birds in Abyssinia being furnished with a powder corresponding with their colours, has not been thought least ridiculous. Thus Mr Salt, in the second volume of Lord Valentia's Travels, somewhat insultingly says, "we killed a vulture, which upon examination we pronounced to be a bird of passage: since we could not discover any of that powder which Bruce says the hill birds of this country are provided with, and which, it is to be observed, all the birds that we have hitherto killed have been without."

Now one of the birds which Mr Bruce particularly mentions as being furnished with powder was a heron, and he says that the powder was of a blue colour, This statement then of his appears to be in no small degree corroborated by the heron I killed having such a provision of powder of its own colour.

But for what purpose is it intended? Mr Bruce is of opinion that it is a provision of nature to protect the birds of the hill country from cold; and my bird you see was killed in the winter season, But whether all of this species are similarly provided – and if so provided whether it occurs in the winter only – also from what reservoirs the powder is secreted, are questions I am totally unable to answer.

This account, however, may serve to stimulate others, better qualified than myself, to an enquiry into a subject sufficiently interesting and curious; and to me it will afford the purest gratification to have contributed, in the smallest degree, to establishing the credit of the Travels of Mr Bruce, whose name (to use the language of the British Critic) is justly entitled to a place in the list of those who have been eminently

conspicuous for genius, valour, and virtue.

I have the honour to be Sir your most obedient servant
Revett Sheppard
Offton Parsonage
January 12th 1818

This letter was communicated to the Linnean Society at the meeting of January 20th 1818. In the *Trans. Linn. Soc.* (12, 585) it is reduced to a bald statement of only six lines!

The River Gipping flows into Ipswich and becomes the R. Orwell. Offton is about eight miles north-west of Ipswich.

The second letter from Rev. Sheppard was read at the Linnean Society on June 16th 1818, but was not printed in *Trans. Linn. Soc*.

To the Reverend W. Kirby, Rector of Barham
My dear Sir

In the evening of the 6th of April 1818 I walked from Ipswich thro' Freston and Holbrook to the ferry, intending to cross the River Stour to Wrabness, my new residence. I reached the ferry at 20 minutes past 7, having ordered the Wrabness ferryman to come over and be in readiness for me at 8: however it blew so tremendous a gale that the man, with the assistance of two others, was unable to launch his boat, and I waited in anxious expectation till 10 minutes past 9 (as I could distinguish by feeling the hands of my watch) and it being quite dark had much difficulty in extricating myself from that moory spot and finding my way back to Holbrook, where I took up my quarters for the night, and the next morning crossed the river and got home to breakfast.

Whilst waiting that night at the ferry I suffered bitterly from cold, and fear lest the ferryman should have been drowned, knowing him to be a daring character and assuring myself that he had made the attempt to cross over: but must own these feelings were amply compensated by the extraordinary spectacle I was witness to – no less than eight Ignes fatui arose at different times, between the hours of 8 and 9, from the vast bed of ooze which is covered to the depth of 8 feet at high water – it was then low water. Their distance from me was, at least, I should suppose, 150 yards – they were about the size of the flame of a candle without any irradiation around them, differing in that respect from the Ignis fatuus I many years since saw between Stamford and Grantham in Lincolnshire, and which you and my friend Spence did me the honour to insert an account of in your admirable Introduction to Entomology. The wind, as I have observed, was very tempestuous, yet, what is singular, these Insects (for I am persuaded such they were) all flew against it – if, during their flight, the wind at all dropped, they went on at a brisk rate; otherwise they appeared to work their way – their motion in that case much resembling that of a butterfly when it takes a long flight. Their excursion was not high above the ooze, into which they suddenly dropt (after flying, apparently, about 50 yards) as if exhausted by the exertion, bringing forcibly to my recollection what is related, by navigators, of the Flying fish.

Thus then it appears that there are different sorts of Ignes fatui in this country, and I cannot but consider myself particularly fortunate in having been an eyewitness to 2 of the species.

Since inserting the above account amongst my memoranda, I mentioned what I had seen to a carpenter who works in this village: he makes a distinction between Jack-o'lanterns and those appearances which so lately presented themselves to my view, and which proceed, he says, from the ooze-fly, of frequent occurrence, more especially in the winter season; and that their appearance, in the opinion of sailors, prognosticated foul weather. This coincides with what seamen observe of those animalcula which, rising to the surface of the sea, cause it to appear in an ignited state, their appearance being generally followed, according to Sparrman, by a change of weather. This man says that he has frequently found the ooze-flies when engaged in spearing eels; and upon my asking him how he came, to know that was the insect which arose in a luminous state from the ooze, he assured me there was only one kind of flying insect living therein.

With respect to the Jack-o'lanterns (which he has always considered to be insects) he states that they were formerly very frequent in East Bergholt heath (now inclosed) being seen sometimes to issue in considerable numbers from some gravel pits thereon - that they were about the size of a peck measure (this was about the size of that I saw in Lincolnshire) and their flight was strait up into the air, to about the height of a tall tree, and then after frisking up and down like gnats for some time, they would suddenly drop near the spot whence they rose – that 20 or 30 years since, as he crossed the heath with his cousin, upwards of a score of Jack-o'lanterns were flying, and the latter having a gun, fired several times at them without effect, either to bring them down or to extinguish their lights.

This relation of the old carpenter's must doubtless appear questionable, but, added to my own observations will, I am sure, not be uninteresting to you, perhaps not to the other members of the Linnean Society, to whom by the presentation of this letter you will greatly oblige

my dear Sir
yours most affectionately
Revett Sheppard Wrabness Parsonage April 10th 1818

P.S. The opinion that stormy weather follows the appearance of the ooze-flies has been remarkably confirmed by the very tempestuous wind which has prevailed ever since. In the afternoon of the 9th vast numbers of porpesses were tumbling in the river opposite my house, and riding over the waves in fine stile – this they never do but previous to and during bad weather. Perhaps when the ooze-flies shew themselves porpesses may be expected, and vice versa!

Wrabness is on the south bank of the Stour, opposite Holbrook. Sheppard's walk from Ipswich to the Stour at Holbrook will have been at least six miles.

Nowadays, Ignes fatui, jack-o'lanterns and Will-o'-the-wisps are considered the same phenomenon – burning marsh-gas (methane). David Pescod has drawn my attention to papers which establish that phosphine (PH_3) is common in such sediments, that it ignites spontaneously on contact with air, and that this in turn ignites the methane.

ALAN BRAFIELD

Action on the proposal to conserve the name *Acacia* at the Nomenclature Section of the XVII International Botanical Congress in Vienna: Did the ayes have it?

At the Nomenclature Section during the XVII International Botanical Congress at Vienna in 2005, botanists, as they always do at this meeting, had extensive debates on the rules for naming plants, and the decisions from this meeting have been incorporated into the current edition of the International Code of Botanical Nomenclature (McNeill *et al*., 2006). On the last day of the Nomenclature Section botanists did something unprecedented for a Section meeting – they debated, not the rules of naming, but a name itself. Also unprecedented was the unusual procedure used by Section officials for acting on this matter.

This story began over four years ago when Orchard and Maslin (2003) proposed to conserve the name *Acacia* Mill. and replace its current African type, *A. scirpioides* (L.) W. Wight (= *A. nilotica* Karst.), with the Australian *A. penninervis* Sieber ex DC. This proposal was made so as to preserve the name *Acacia* for the approximately 1,000 species in Australia that would otherwise have to go by the name *Racosperma* Mart. were *Acacia s.l.* split into several genera as some have suggested (e.g., Luckow *et al*., 2003; Pedley, 2003). If the Orchard and Maslin proposal and new taxonomy were accepted, approximately 160 species currently in *Acacia* would have to change their generic name to *Vachellia* Wight & Arn. (rejection of the Orchard and Maslin proposal would permit these 160 species to remain in *Acacia*), while other species would be placed in different genera (e.g., *Acaciella* Britton & Rose, *Senegalia* Raf.) regardless of the fate of the proposal.

The Committee for Spermatophyta (now Committee for Vascular Plants) took up Orchard and Maslin's proposal on *Acacia* in late 2003, and it was intensely debated by the committee, the entire proceedings for the case exceeding forty pages. The argument in favor of the proposal centered on the greater number of new names that would have to be taken up were the proposal not adopted, while the argument against the proposal stressed the number of people affected. These two views are respectively summarized in the pie chart in Figure 1 in Brummitt (2004) and the maps in Figure 2 of Luckow *et al.* (2005).

In 2004, the Committee for Spermatophyta voted (9:6, 60%) to recommend conservation of the name *Acacia* with a conserved type (see Brummitt, 2004). I was a member of the Committee for Spermatophyta, when the *Acacia* proposal was considered and I voted "no", finding the argument for the proposal to be unpersuasive "bean-counting" (for additional discussion on the merits of this proposal, see the following: pro: Maslin, 2004a; Maslin 2004b; Maslin & Orchard, 2004; Orchard & Maslin, 2005; con: Walker & Simpson, 2003; Pedley, 2004; Luckow *et al.*, 2005). However, living in *Acacia*-less New York City, my interest in this case was rather low. My main concern with the *Acacia* proposal is not with Committee for Spermatophyta's vote but rather the vote at the Nomenclature Section in Vienna (for other issues about this case see Smith *et al.*, 2005; Moore, 2007).

The Committee for Spermatophyta is not the ultimate authority regarding the conservation of a name. It makes a recommendation on a proposal, which is then passed on to the General Committee. The General Committee then forwards its own recommendation to the Nomenclature Section for action, and the decisions of the Section are subject to the ratification by a Plenary Session at the end of the International Botanical Congress (see Rickett & Smith, 1958; Moore, 2007). Only until all of these hurdles have been cleared can a non-provisional entry appear in the Code indicating a name's conserved or rejected status. Prior to the *Acacia* case, proposals to conserve or reject names lacked controversy, and the votes taken to approve them at International Botanical Congresses were routine.

During the Nomenclature Section, the General Committee met separately and voted (14-6-2, 63.6%) to positively recommend to the Section Orchard and Maslin's proposal on *Acacia*. On the last day (16 July) of the Nomenclature Section, the Section took up the General Committee recommendations on proposals to conserve and reject names. Those presiding stated that in order for a proposal with a positive General Committee recommendation to be rejected, a 60% negative vote would have to be achieved. The non-controversial proposals recommended (i.e., all but the *Acacia* proposal) by the General Committee were approved en bloc by a single show of hands vote. The proposal on *Acacia* was considered separately and, after a long debate, a card vote was taken with 45.1% voting in favor of the proposal on *Acacia* and 55.9% voting against the proposal (see Moore, 2007, for a discussion on the confusion involving the precise wording of this motion). The decisions made by the Nomenclature Section were ratified by the full Congress at a plenary session on 23 July 2005 (Stuessy, 2006).

Many have questioned why the 60% supermajority requirement was placed on the opposition to the proposal on *Acacia* (and therefore only a 40% minority requirement for approval), since the Committee for Spermatophyta and General Committee both required a 60% positive supermajority. Furthermore, support of this was a proposal to change the Code, and the Section had previously approved a rule requiring a 60% affirmative vote for any proposal to amend the Code. Also, placing the majority requirement on those opposed to a motion (therefore allowing a motion to be treated as having passed with only minority support) conflicts with standard parliamentary practice (Robert *et al.*, 2000; Sturgis, 2001).

The response has been that once a proposal to conserve (or reject) a name has been approved by the General Committee, Article 14.14 of the Code (Greuter *et al.*, 2000: 29) authorizes retention (or rejection) of that name, subject to the decision of a later International Botanical Congress. Article 14.14 has been used to list provisional entries (in past editions of the Code such entries have been indicated with an asterisk) in the Code that lacked approval from a Nomenclature Section and International Botanical Congress. Once the General Committee voted to recommend acceptance of Orchard and Maslin's proposal on *Acacia*, the name, therefore, had effectively been entered into the Code, and opposition to the Orchard and Maslin proposal was a proposal to remove this "entry" (McNeill *et al*., 2005; McNeill, 2006).

Rebutting such tortured logic is difficult for one never knows where to begin. I will begin with Division III, Provision I of the Code, which makes it clear that the authority for changing the Code rests not with any committee but with the Nomenclature

Section and International Botanical Congress. Therefore, any entry in the printed book that goes by the name International Code of Botanical Nomenclature that lacks approval from a Nomenclature Section and Congress is strictly provisional (hence the asterisk indicating "conservation approved by the General Committee; use authorized...pending final decision by the next Congress."; see Greuter *et al*., 1988) and not part of the de jure Code as approved by a Nomenclature Section and Congress. Therefore opposition to a General Committee recommendation is not a proposal to amend the Code.

Article 14.14 of the Code is not a standing rule or bylaw that dictates what procedure should be used at a Nomenclature Section. Rather it is a rule for users of plant names, providing guidance during the interim period between when a General Committee recommends a given proposal and when the Nomenclature and International Botanical Congress acts on these recommendations (Rijckevorsel, 2006). With respect to the *Acacia* case, this interim period was a scant few days, hardly adequate time for the General Committee recommendation to be widely adopted by users of plant names.

Only the rules of procedure adopted by the Nomenclature Section, and not any article in the Code, determine how a motion should be voted on at the Section. On the first day (12 July) of the Nomenclature Section at Vienna, the Section passed (through voting) the following rules of procedure: 1) in order to be approved, any proposal to amend the Code required a three-fifths (60%) positive majority; 2) motions not effecting a change in the Code needed a simple majority for approval.

The motion to approve the General Committee recommendation on *Acacia* at the Section should not be construed as having been approved because it received only minority (45.1%) support, and the rules of procedure adopted by the members of the Section at the beginning of the meeting clearly required a positive majority or supermajority for approval of any motion. Those presiding over a meeting cannot make up rules, such as the one requiring a 60% negative vote to reject a General Committee recommendation, that conflict with the established rules of procedure previously adopted. Any such "rule" is invalid and any motion "passed" under such "rule" is null and void (Robert *et al.*, 2000; Sturgis, 2001). The lack of any member raising a point of order does not negate this (Robert *et al.*, 2000; Sturgis, 2001) and cannot be taken as evidence that the Section "approved" the use of such an approach. Approval is achieved through voting and the Section never voted on the procedure used on the *Acacia* proposal.

Therefore, the Section decided nothing with respect to the proposal on *Acacia*. Had the motion on *Acacia* been handled in accordance with the rules of procedure adopted by the Section, it would have been defeated because it received only minority support. In order for the action taken on *Acacia* to have been valid, the Section needed to approve through majority votes to 1) suspend the established rules of procedure and 2) adopt a new rule allowing a motion to be passed with only a 40% minority positive vote. Neither occurred. This leaves the matter to be addressed at a Nomenclature Section meeting at a later International Botanical Congress, the entry in the current Code (McNeill *et al*., 2006) lacking approval from a Nomenclature Section.

Some who defend the procedure have told me that the Section was not following either Robert *et al.* (2000) or Sturgis (2001), the procedural standards I have cited. I therefore ask what standard was being followed? What procedural standard requires a

positive majority vote in order for a motion to be approved, but yet allows a motion to be treated as approved when a positive majority vote is not achieved? What procedural standard for meetings requires members to vote to approve rules of procedure but then allows those presiding to ignore these rules and establish new ones without ever taking votes to suspend the existing rules and adopt the new ones?

It has been noted (Greuter & McNeill, 1994) that the Code lacks "teeth" with respect to penalties for infringements. Despite this handicap, the Code has largely been followed by users of plant names. It has indeed been a toothless wonder. However, if those in charge of the Code want it to be followed even when some of its entries failed to get majority support, I suggest they implant some big, sharp teeth into the Code; it is sorely going to need them.

The ayes didn't have it.

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Identifying "*Erica hirsuta anglica*"

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In *Species plantarum*, Carl Linnaeus (1753: 354) placed Caspar Bauhin's phrase-name *Erica hirsuta anglica* in synonymy under his *E. ciliaris*. But what was the plant to which Bauhin gave that name? Can we identify this hairy English heather?

Erica ciliaris, known in English nowadays as the Dorset heath, was among the heathers observed by the Flemish botanist Carolus Clusius (Charles de l'Écluse) during his lengthy visit to the Iberian Peninsula in 1564–1565. In *Rariorum aliquot stirpium per Hispanias observatarum historia*, Clusius (1576) described and illustrated many of the plants he had found. His eighth heath, *Erica Coris folio*, seen in Portugal and elsewhere, was Linnaeus' *E. ciliaris*. The wood-block used to print the illustration in Clusius' book was reused in several other books including his own *Rariorum plantarum historia* (Clusius 1601; as *Erica* XII), John Gerard's *The herball or generall historie of plantes* (1597), and Thomas Johnson's "very much enlarged and amended" edition of Gerard's *Herball* (1633) (see Nelson 1998). Linnaeus correctly cited Clusius' *Erica* XII under *E. ciliaris*.

However, neither of the English authors just mentioned – Gerard and his editor Johnson – seems to have been aware that the "Challice Heath", as they called it, occurred as a native plant in England. Yet, if *Erica hirsuta anglica* of Bauhin's *Pinax theatri botanici* (1623: 486) really was an English heather *and* is correctly identified as *E. ciliaris*, then credit for "discovering" the Dorset heath in England needs to be given to the Elizabethan physician Dr Peter Turner (1542–1614), son of the "father of English botany", the Revd William Turner (*c.* 1508–1568).

In fact, *Erica ciliaris* was not admitted by most authorities as a native English species until two centuries after Bauhin's *Pinax theatri botanici* was published. In 1828, the Revd John Savery Tozer (*c.* 1790–1836), Curate of St Petrock in Exeter, sent a specimen, collected on "a bog near Truro", to Dr Robert Greville (Lindley 1829). The heather was not recorded in the county of Dorset until 1833 when the Revd Robert Blunt (1808–1884; later to take the name Dalby) gathered specimens on Corfe and Wareham heaths (Bowen 2000). Even so, for more than six decades after it was recorded in Dorset, *E. ciliaris* continued to bear such names as "ciliated heath" or "fringed heath", mere translations of Linnaeus' name. It was only dubbed "Dorset heath" in the late 1890s: the first instance that I can trace of this name in print is in *The garden* on 30 April 1898 (Moon 1898; *cf* Robinson 1898; McClintock 1982). But I have digressed.

"C. Bauhin, mistakenly, calls it *anglica*, which has given rise to the idea of its being an English plant, but it is not," wrote William Curtis (1800), drawing attention to an enigma without, it seems, seeking an answer. Frederic Williams (1910) followed suit and so also did David McClintock (1966, 1980): oddly, given his persistent inquisitiveness, David did not try to ferret out an explanation. If the ciliated/fringed/

Dorset heath was unknown in England when Caspar Bauhin (in 1623) and Carl Linnaeus (in 1753) published their tomes, how can *Erica hirsuta anglica* be explained?

Let's examine the evidence. Caspar Bauhin of Basle listed *Erica hirsuta anglica* in his great compendium *Pinax theatri botanici* which, so Agnes Arber (1986) declared, was nothing less than a "complete and methodical concordance of the names of plants. It brought order out of chaos ... ." More than a quarter of a century later, in his brother Johann's posthumous *magnum opus*, *Historia plantarum universalis* (Bauhin & Cherler 1650: **I**: 358), there was an entry for *Erica anglicana parva capitulis hirsutis* which is indubitably the same plant. Johann Bauhin explained that he had received a pressed specimen of this small heather with hairy heads of flowers: "*Ericæ nomine siccam accepimus plátam, à Domino Petro Turnero Anglo*. (We have received a dried plant by the name of Erica from Master Peter Turner, an Englishman.)" Bauhin & Cherler 1650: **I**: 358). Elsewhere in *Historia plantarum universalis*, there are other references to the same Peter Turner. Writing about bog myrtle (*Myrica gale* L.), Bauhin and Cherler (1650: **I**: 225) recorded that around thirty years previously Turner had given them a collection of pressed plant specimens from England, carefully labelled with vernacular names as well as Latin ones.

Bauhin and Cherler's (1650: **I**: 358) description of the hairy English heather is not unambiguous: "*Tota pulchella, vix dodrantalis, ramuli tenues, multi: folia admodum breuia, crebra, in ambitus hirsuta, ex modicis interuallis seu geniculis terna vel quaterna: in summitate capitula hirsuta.* (The whole [plant] dainty, scarcely 9 inches high: branchlets thin, many: leaves very short, crowded, hairy around the edges, in threes or fours at moderate intervals or nodes: at the top hairy capitula.)" The first 22 Latin words could apply to *Erica ciliaris*, which has leaves with prominent hairs around their edges, arranged in whorls of three or four, and the Dorset heath could be described as dainty. The same words could also apply to *E. tetralix* L., cross-leaved heath, although it does not usually have whorls of just three leaves. The final four words of the description refer to "*capitula hirsuta*"; the flowers of *E. ciliaris* are in an elongated raceme which is not noticeably hairy and would not have been termed a *capitulum*. However, the flowers of *E. tetralix* are in an umbel which could be termed a *capitulum*, and they usually have very hairy peduncles and sepals: thus "*capitula hirsuta*" fits *E. tetralix* much better than *E. ciliaris*.

Is there any other evidence? Although a portion of the Bauhins' herbarium has survived and is preserved in the Botanical Institute at the University of Basle, unfortunately Turner's heather specimen is not among the extant sheets (see http://www.bauhin.ch/herbspec.htm). However, the entry for *Erica anglicana hirsuta capitulis hirsutis* in *Historia* was accompanied by a woodcut (Figure 1). There is no explicit evidence that this was made using Turner's specimen, but it seems to be a unique illustration, not a previously used one as far as can be determined, so there is every likelihood that one of the Bauhins commissioned it. It shows a heather-like plant with leaves in whorls of three and four, with internodes increasing in length towards the inflorescence, and flower-buds in an umbel. It resembles *E. tetralix*, especially in its overall habit and the extending internodes. It does not match *E. ciliaris*.

There is another clue. In the catalogue of the University of Oxford's *Hortus botanicus*, Stephens & Browne (1658) listed a plant named "*Erica vulgaris hirsuta*".

Figure 1. Wood-cut depicting *Erica hirsuta anglica* from Bauhin & Cherler (1650: **I**: 358).

Figure 2. Specimen of *Erica tetralix*, cross-leaved heath, labelled "Erica vulgaris hirsutior Common Woolly Heath", from the Bobart Herbarium (**OXF**), collected in the late 1600s. (© Reproduced by permission of Oxford University Herbaria.)

If long-accepted synonymy is applied, any heather labelled "*Erica vulgaris*" by pre-Linnaean plantsmen should be given the name *Calluna vulgaris* (L.) Hull – it should be ling. However, a herbarium specimen (Figure 2) in a collection associated with Jacob Bobart and his son, also called Jacob, who were successive curators at the Oxford garden in the mid to late 1600s, demonstrates that at that time *Erica vulgaris hirsutior* (a contemporary synonym, according to Ray (1677), of Gerard's *Erica vulgaris hirsuta*) was one of the names applied to *E. tetralix*, cross-leaved heath (see http://herbaria.plants.ox.ac.uk/BOL/home/). The English name on the same specimen is "Common Woolly Heath". Thus, the phrase-name *Erica vulgaris hirsuta* did not, as supposed by many authors including McClintock (1966: 41–42), necessarily signify a hairy-leaved variety of ling.

There is another comment that should be noted. The Revd John Ray in his *Catalogus plantarum Angliae* (1677: 97–98), under *Erica pumila altera Belgarum* (of L'Obel) or "Low-Dutch-Heath, or Broom Heath", wrote:

Huc etiam puto referendam Ericam Anglicam parvam capitulis hirsutis J.B. quam se à D. Petro Turnero ex Anglia siccam accepisse scribit. In hac folia hirsuta quaterno ordine caules vestiunt. Flores in summitatibus ramulorum conferti, ampli, pallidè purpurei. Quid velit C. Bauhinus per Ericam suam hirsutam Anglicam non intelligo, cùm illam speciem necque ego uspiam vidi in Anglia, neque à quoquam audivi illam sponte hic provenire. (Here also I think should be referred Jean Bauhin's *Erica Anglica parva capitulis hirsutis* which he writes that he received dried from Master Peter Turner from England. In this, hairy leaves clothe the stems in four rows. The flowers

[are] crowded at the tips of the shoots, large [and] pale purple. What Caspar Bauhin may mean by his *Erica hirsuta Anglica* I do not understand, since I have neither seen that species anywhere in England, nor heard from anyone else that it grows of its own accord here.)

Figure 3. *Erica tetralix*, cross-leaved heath.

Despite Ray's denial of comprehension, which I believe has misled many of his successors including Carl Linnaeus, he did identify Turner's plant correctly. Ray's (and L'Obel's) *Erica pumila altera Belgarum* was a name for *E. tetralix*, synonymy confirmed by Ray (1724: 471) and then by Linnaeus in his *Flora anglica* (1754: 15). Thus, I suggest that the hairy English heath, *Erica hirsuta anglica*, alias *Erica vulgaris hirsuta*, was a plant with which John Ray was quite familiar: cross-leaved heath, *E. tetralix* (Figure 3).

Figure 4. *Erica ciliaris*, Dorset heath.

A corollary is that Linnaeus' protologue for *Erica ciliaris* (Figure 4) includes one discordant element – Peter Turner's specimen which the Bauhins once possessed, and perhaps illustrated, was not an example of the Dorset heath.

Acknowledgements

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Botanical and Zoological Illustrations of the 19th century: A survey of the changes in printing techniques with examples taken from our Archives

The 19th century was remarkable for the number of discoveries and innovations made in every field, especially with regard to mechanics and technology. Not least among these were the ways of printing book illustrations. Examples taken from recently catalogued material in the archives of the Linnean Society demonstrate new printing methods and the way the plates of botanical and zoological books changed over the course of the century. The manufacture of cheap paper, together with a reduction in book size, were prime factors in bringing down costs and, by mid-century, relatively inexpensive books and magazines, fully illustrated, often in colour, became available to the educated public. A talented amateur could even produce the plates himself.

Throughout the 18th century, the illustrations of botanical and zoological works had mainly been copper engravings. They were large, folio or 4to in size, engraved by professionals and coloured by hand. These 'plate' works are extremely beautiful, but were very expensive, only affordable by the wealthy, who had often subscribed to their production. The first noticeable change occurred towards the end of the century, when the smaller 8vo format began to predominate. In 1781, the botanist, William Curtis (1746–1799) FLS 1788, published the first volume of the *The Botanical Magazine* in 8vo. [It still continues today.] It was swiftly followed by other similar journals, establishing a trend for such multi-volume works.

The second major change came at the beginning of the 19th century with the invention of lithography. This is a technique of drawing directly on to a specially prepared stone surface, from which the print is taken, thus cutting out the services of an engraver to transfer the original drawing on to a copper printing-plate. This was both expensive and time-consuming; also mistakes and misinterpretations could be made. Anyone with sufficient artistic skill could draw the lithographs himself and many authors were now able to publish illustrated works, which had, hitherto, been financially beyond their means. One such was William Swainson (1789–1855) FLS 1816. He is believed to be the first to use lithography for scientific purposes.

As a young man, Swainson had spent some years in service with the British Mediterranean Army, chiefly in Malta and Sicily. He followed this experience with an expedition to Brazil (1816–18), with the botanist, Henry Koster. On his return to England, Swainson learnt the art of drawing on lithographic stone, which enabled him to bring out his impressive *Zoological Illustrations*, 1820–23, 3 vols, with 182 plates; Series II, 1829–33, 3 vols, with 138 plates, in 8vo. The volumes were published in parts, each plate opposite the appropriate text, in the traditional manner. In Series One, the birds, shells and insects (chiefly butterflies and moths) are mixed in random order; in Series Two, each Class is in a separate volume. Following various personal disappointments and difficulties, in 1840, Swainson emigrated to New Zealand. Before

Figure 1. *Psittacus cayennensis*. Hand-coloured lithograph by W. Swainson. Pattern plate for his *Zoological Illustrations*, ser. 1, vol. 1, pl. 1, 1820. (Photograph © The Linnean Society/David Pescod)

leaving England, he disposed of his collections and drawings. In our archives, we have his 'pattern' plates for both series [MS Drawer 40; a list of these has been compiled]. They are the original lithographs, drawn and coloured by himself [Figure 1]. They were then sent to his colourist, G[abriel?] Bayfield of Walworth, London, who was to produce the prints for the whole run. They would be coloured by hand by his paid workers, who painted the uncoloured prints to match the patterns provided.

Swainson sent out the patterns simply folded over, sealed with wax and addressed on the back – envelopes not yet being in common use. They bear the franking marks of the postal services employed. On many, there are comments written by Swainson and by Bayfield. Comparing them with the published plates, the shells and the "flies" – as Swainson called then – agree well. Unaccountably, some birds have been redrawn (slightly fatter) and Swainson's name and the date erased from the end of their perches. The colours are stronger, though less vibrant, and sometimes a glaze has been added. On the whole, the birds look even less alive than they do in the original patterns – admittedly, they had been drawn from stuffed specimens or just skins.

As a pioneer in this field, Swainson did not have the experience to make the most of this medium. His line is stiff, as though he were using an engraver's tool; a lithographic crayon is soft and so allows greater freedom of movement. He draws with straight strokes, whereas natural shapes, even fluffiness, can be achieved with lithography. The birds are all in profile (most facing to the right), motionless on a standard branch. There are no background scenes. It was left to his successors, Edward Lear and John Gould, in particular – not to mention Mrs Gould, which her husband invariably failed to do – to exploit the full potential of lithography. It was she, who introduced the style of depicting whole families of birds together, the chicks in their nest, being fed and guarded by their parents. In 1830, Swainson received some birds sent by Gould, on loan or to buy. The same year, he also received a box of birds from Cape Town, sent by Sir Andrew Smith [see p. 28]. In 1899, Dr Albert Guenther [see p. 28] made Swainson the subject of his Anniversary Address [*Proc. Linn. Soc.* pp. 14–61; 1899–1900].

For botanical works, William Hood Fitch (1817–1892) FLS 1857 must rank as one of the most skilful, certainly the most prolific, of lithographic artists, producing around 10,000 drawings, half of which were hand-coloured. From 1834 Fitch took over from Sir William Jackson Hooker (1788-1865) FLS 1812, the first Director of the Royal Botanic Gardens, Kew (1841-65), as the sole illustrator for *The Botanical Magazine*, providing some 3,000 plates, and continued in that role until 1877. From 1856 to 1887, he was simultaneously artist for the Linnean Society and, from 1855 to 1893, also for *The Gardiners' Chronicle*. For that magazine, his work was reproduced as wood-engravings by W.G. Smith [see p. 34]. Fitch had been brought to Kew by Hooker and, for nearly ten years, lived in his house, before moving to lodgings. In 1857, he married and set up home in Kew Road. During the next 30 years, he moved four more times, across Kew Green, but always near the Gardens – and Sir William.

His best known work: *Victoria regia*, 1851, comprises four large folio hand-coloured lithographs of the famous giant water-lily [now named *V. amazonica*], life size. The text was by Hooker. At the time, both the plant and the book created a considerable sensation. A decade later, Hooker's son, Sir Joseph Dalton Hooker (1817-1911) FLS 1842, published *Flora Tasmaniae*, 1860, 3 pts, with hand-coloured lithographs by Fitch. These are after original water-colours by William Archer (1820–1874) FLS 1855, himself from Tasmania. He had trained in England as an architect, then worked as artist to Sir Joseph at Kew. In our archives, there are 36 of his paintings for the *Flora* [MS 476], dated 1848–56. They were published as plates 102–124 (pt 2). Fitch's mastery of the lithographic technique can be appreciated by comparing these published plates with Archer's original paintings. It needs close inspection to distinguish the one from the other.

Lithography provided a simple and effective way of producing good printed illustrations, but there still remained the inconvenience and expense of the hand-colouring. Chromolithography (colour-printed lithographs), introduced towards the middle of the century, was, for the next three decades or so, the medium that allowed the addition of colour pictures to every kind of book and pamphlet. At first, colours were limited to basic reds, yellows and greens, with only rather muddy blues. This made its use less suited to botanical studies than to landscapes and animal pictures.

Prominent in the field of animal art – indeed, he was said to have had no equal as a fish artist – was George Henry Ford (1809–1876), the son of an English farmer (and gifted miniaturist) in Cape Colony, South Africa. Ford had entered the army in 1815 and, in 1821, had gone to Cape Town as a hospital assistant. He was 'discovered' by the eminent Scottish surgeon, naturalist and diplomat, Sir Andrew Smith (1797–1872) MD, KCB 1858, who engaged the young man, initially to draw his fish specimens. As his protégé, Ford accompanied him as official artist on an expedition into Central Africa, 1834–36. When Smith came to England in 1837 to exhibit his fish collection at the Egyptian Hall, Piccadilly, he brought young Ford with him. Smith was instrumental in his becoming lithographic artist to the Zoology Department of the British Museum, where he worked for close on 40 years.

Ford provided the water-colours for *Illustrations of the Zoology of South Africa*, 18[38–] 40 [–50], 5 vols, which Smith was writing in the cramped conditions of a room in the basement of the Museum. From about 1857, Ford worked almost exclusively for Albert Guenther, the German ichthyologist, later to become Keeper of the Department. Through him, Ford's expertise came to the notice of Charles Darwin, who, expressing his "unbounded admiration" of his work, asked that he might make some drawings for him for *The Descent of Man*, 1871 [vol. 2] and was "exceedingly pleased" with them. Ill health and partial paralysis caused through a broken hip, sustained just before he met Smith by being tossed by an angry cow, prevented Ford from working long hours at a stretch. Nevertheless, he often stayed at Guenther's home, so that they could work together over the weekend. He retired only when his strength began to fail, not long before his death. A few years earlier, on the death of his early patron, Sir Andrew Smith, in 1872, Ford's drawings had been returned to him and he presented them to Guenther. In 1936, Guenther's son, Robert W.T. Gunther (1869–1940) FLS 1900, Vice-President of the Linnean Society 1927–28, a natural historian and antiquarian, sent them to the University of Witwatersrand, South Africa.

Albert C.L.G. Guenther (1830–1914) FLS 1877, was born at Esslingen, Germany. He studied at Tübingen University, at first theology, but later turned to medicine. His real interest, however, was zoology. He paid a visit to London in 1855 and, in 1857, was invited to work for the Zoology Department, under John Edward Gray (1800–1875) FLS 1857, Keeper 1840–74. Guenther was taken on to the staff in 1862. He became naturalised British and succeeded Gray as Keeper in 1875, ushering in a whole new regime, which culminated in the transfer of the Department from old Montague House, Bloomsbury, to the new buildings of the Natural History Museum, South Kensington, in 1882–83. Guenther was Vice-President of the Royal Society, 1875–76; he was awarded their Royal Medal in 1878. Later he became President of the Linnean Society, 1898–1901, and received the Linnean Medal in 1904. His portrait plaque [1912] hangs in our reading room.

Guenther had a well-stocked aviary in the garden of his house in Surbiton, Surrey. He also kept a variety of exotic pets at home and in his rooms in the Museum, much to the terror of unsuspecting visitors. Various animals have been named after him, including a snake [Figure 2]. Indeed, snakes were his favourite creatures, which he could handle with impunity, however venomous. At one time, he became custodian of two Giant Tortoises from the atoll of Aldabra in the western Indian Ocean. In 1872,

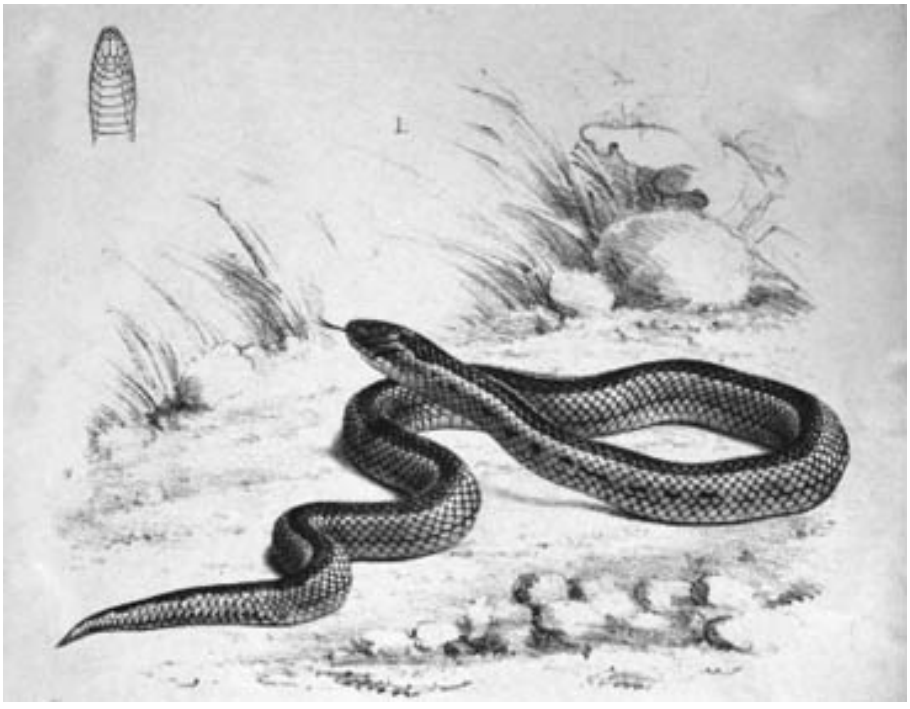

Figure 2. *Geophis guentheri*. Chromolithograph; G.H. Ford del. Proof plate in Guenther's Album: *South America; Reptiles*, p. 271 [c. 1869]. (Photograph © The Linnean Society/David Pescod)

Guenther became aware that these ancient reptiles were likely to be soon overtaken by the same fate that befell the proverbial Dodo. Urgent action was required, and, thanks to his relentless energy, Guenther managed to set in motion a campaign to save this endangered species, establishing the innovative concept of a rescue/breeding centre for them. He then began an exhaustive study of this group and constructed a classification system.

Guenther wrote over 400 scientific works, including the catalogues of the zoological collections, illustrated with hand-coloured lithographs and chromoliths by Ford. Many of his works were donated to our Society by his grandson, A.E. Gunther FLS 1979, in 1948, including a remarkable series of 36 folio volumes [MS 520-556], 'scrap-books' of illustrations culled from all manner of natural history works, dating from the mid-18th century to his own publications of a century or more later. They are broadly classified and most subjects have their Latin names (though many are now out-of-date). The contents of these albums have been catalogued. They contain many examples of Ford's work – original water-colours, pattern plates and proof plates of his lithographs and chromoliths. For these official fish 'portraits', Ford shows them lying stiffly on their sides, without any backgrounds [Figure 3]. On some of the patterns, there are annotations by Guenther, who often used the old German script. It is not surprising to learn that he also retained a pronounced German accent.

Another prominent ichthyologist of the period was Jonathan Couch (1789–1870) FLS 1824, a medical practitioner of Polperro, Cornwall. He published various books on marine life, such as crabs, molluscs and corallines, but his particular interest was

fish and the fishing industry. He collaborated with Guenther on his *Catalogue of Fishes*. Couch's major publication: *A History of Fishes of the British Isles*, 1862–63, 4 vols, became the standard work for many years. It contains 252 coloured illustrations, as well as numerous uncoloured figures. Thirty years earlier, he had written a preliminary draft: *A Natural History of the Fish of the United Kingdom*, 1836 [MS 407A], with sketches in pencil and water-colours. For the later publication, he often showed the fish in colour, lying in the foreground of an uncoloured coastal scene.

Although stiffer than his sketches, the fishes were praised for their fresh appearance. They were, indeed, drawn from life. Couch describes how he kept them so by wrapping them in wet seaweed, sprinkled with water from time to time. This insight into his methods comes in an account he wrote of the chameleon he was observing one summer at home. He was surprised to see the creature "hasten with unusual speed" from its branch in the window "to lap the water" from the skin of the fish he was drawing. A chameleon was then a rarity and its habits and needs were unknown. This individual, alas, died in the December, apparently not from the cold, but from the lack of sunshine.

Couch was a prolific writer. For over 50 years he published on a variety of subjects, particularly relating to Cornwall. As well as being a keen naturalist, he was also an antiquarian, writing *The History of Polperro*, 1871, published posthumously, with a short biography, by his grandson, Sir Arthur Quiller-Couch, the writer known as 'Q'.

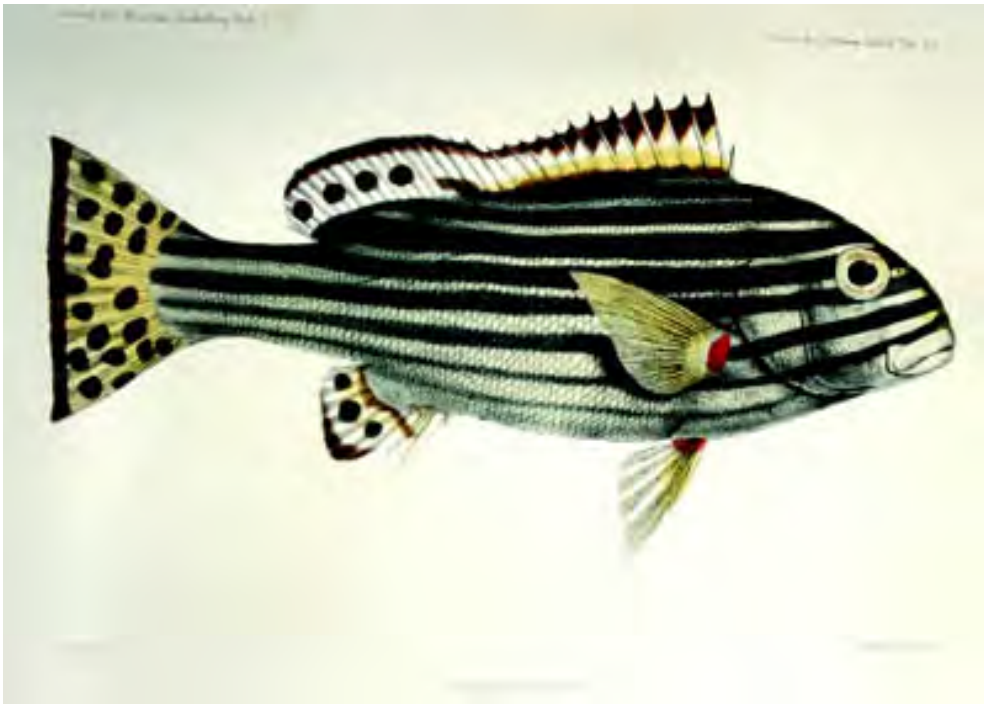

Figure 3. *Diagramma lessonii*. Chromolithograph; G.H. Ford del. Proof plate in Guenther's Album: *Indo-Pacific Seas*, vol. 2, p. 27 [c. 1875]. (Photograph © The Linnean Society/ David Pescod)

Chromolithography was not the only way to produce a colour-printed image at that period. One ingenious method used the subject itself to make the printing surface. 'Nature-printing' – as it was known – has a spasmodic history, dating back to the dawn of printing. The subject is placed between a soft and hard plate and a cast made of the impression. This forms the printing surface, which can be inked in colours. The resulting nature-print retains the irregularities of the original material, creating an authentic reproduction. A similar technique was to take an image on paper from the inked subject and to transfer that onto a lithographic stone. This allowed numerous copies to be printed.

The initiative in trying out new ideas, shown throughout the Victorian era, can be exemplified by the work of John Betteridge Stair (1815–1898), a printer born in Warminster, Wilts. In 1838, he sailed for Sydney, Australia, on behalf of the London Missionary Society. From there, he went on to the lovely island of Upolu, Western Samoa (where the writer, R.L. Stevenson, spent his last years). Stair was ordained in 1842. He set up a press at Falelatai and, later, at Leulumoega, to print religious tracts and the Scriptures, translated into the Samoan language. He retired to Australia in 1845, becoming vicar in Victoria, NSW. At the age of 82, Stair published a history, with his recollections, called *Old Samoa*, 1897.

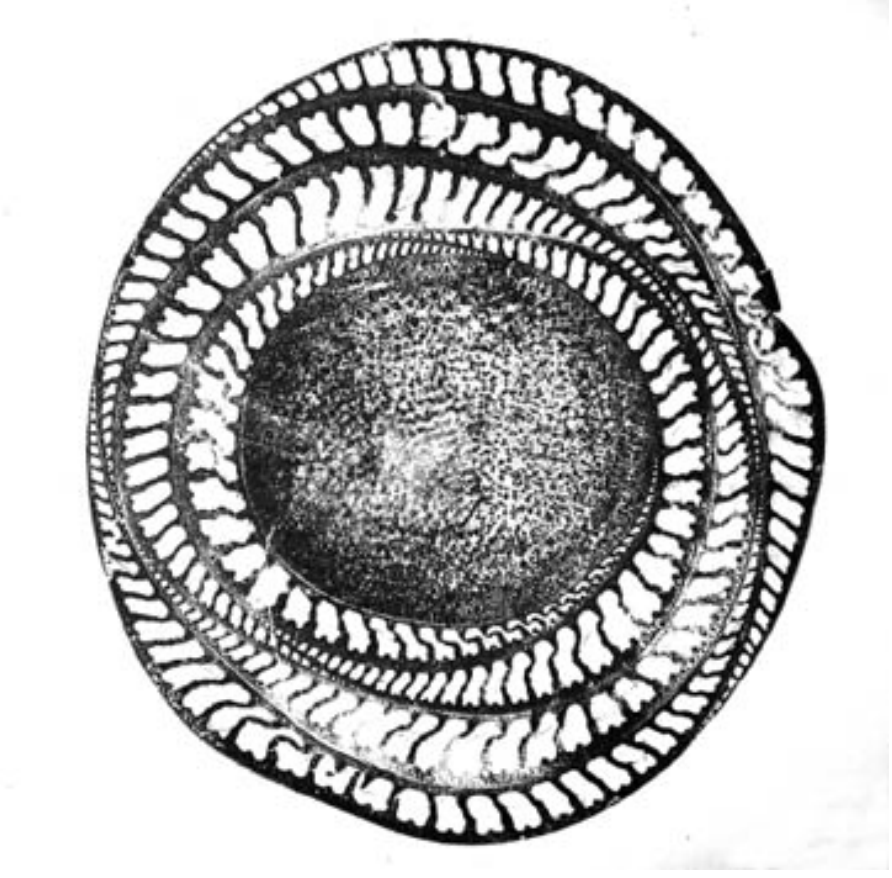

Figure 4. Banana. Cross-section of trunk. Nature-print by J.B. Stair in his *Prints from Natural Specimens collected on Upolu*, vol. 2, p. 57, 1843.
(Photograph © The Linnean Society/David Pescod)

While in that country, Stair had tried nature-printing the native plants, using coloured inks. The method works well enough for firm, thin material and the tough leaves of tropical ferns and such trees as the breadfruit, ironwood and banana [Figure 4] gave good results. Soft tissues, however, get crushed and distorted, making the flower pictures of little use as botanical studies. A list of nearly 100 images in the two volumes of *Prints from Natural Specimens collected on Upolu*, 1843 [MS 659A/B], has been compiled.

A short revival in the use of nature-printing occurred in England in the 1850s and 60s, due in large part to the enthusiasm of Henry Bradbury (1831–1860), a young printer and publisher. He had learnt the technique on a visit to Vienna, where it was used to create tactile samples for the fabric and lace trades. Bradbury would have seen the work of Alois Auer, who perhaps was his instructor. Auer's *Natursebstdruk* images, published in 1853 [MS Case 3, Drawer 41] (presented to our Society by G. Reichel-Dolmatodd, FLS 1989, biologist), demonstrate what can be achieved with suitable subjects. The delicate skeleton of a fossil fish and the amazing tracery of capillaries in a bat's wing are both successfully reproduced.

Back in England, Bradbury patented his process. He also lectured on the subject at the Royal Institution during the years 1855 to 1860. In 1856, he published his own *Nature-printing and its Origins and Objects.* He also provided the coloured nature-prints for *Ferns of Great Britain and Ireland,* 1855, by T. Moore and J. Lindley and for *Nature-printed British Sea Weeds*, 1859-60, 4 vols by W.G. Johnstone and A. Croall, these subjects then enjoying great popularity for botanising among the Victorian middle-classes. Alas, Bradbury suffered psychiatric problems, aggravated by the worry of forgery of banknotes of which he was a printer. His promising career was cut short by his suicide in 1860, at the early age of only 29.

In the 1840s and 50s, Mrs Anna Atkins (1797-1871) utilized a variant of the latest printing method – photography – to make nature-prints of plants. She was the daughter of John George Children, a chemist at the British Museum. Through him, she became conversant with the photographic experiments of the eminent astronomer and chemist, Sir John Herschell, and the work of Henry Fox Talbot. Using the way certain chemicals react to light, she was able to create images called 'cyanotypes'.

The subject was placed on paper impregnated with iron salts. After a short time in sunlight, the paper was washed. The resulting picture was a white image on a beautiful blue background [Figure 5]. Unlike the earlier nature prints, delicate tissues were not damaged. As there was no negative, however, only the one print could be made. Our Society has her 3-volume work: *British Algae, Cyanotype Impressions* [1842-53]. The lasting legacies of this process were the colour Prussian blue, the blue-bag for keeping the household washing really white and the blueprint.

At about this time, as well as the advances in printing methods, it was the relative cheapness of paper – albeit of rather poor quality – that caused a great upsurge in the publication of illustrated literature. Books, journals and popular magazines were full of the, now, much improved chromoliths, or the new, uncoloured, wood-engravings. Photography had seemed likely to become the way, at last, of reproducing a true likeness of the subject. Although it was widely used for portraits, cartes-de-visite, family groups and the like, photography was, in fact, found to be unsuitable for mass production,

Figure 5. *Dictyota atomaria*. Cyanotype by Anna Atkins in her *British Algae, Cyanotype Impressions*, vol. 3, p. 60 [1851].
(Photograph © The Linnean Society/David Pescod)

then needed for newspapers and magazines. Instead, ironically, photos had to be converted into wood-engravings before they could be printed in large numbers.

The end-grain of a wood-block (usually boxwood) was engraved. Like the woodcut illustrations seen in the herbals of centuries earlier, the figure could be printed within the body of the text. When a full-page illustration was required, several blocks were fixed together; the joins can often be seen. Wood-engravings were seldom coloured. They were used almost exclusively in *Punch* (Bradbury and Evans were the original publishers) and *The Field, A Country Gentleman's Newspaper* [1853 to the present day]. In Guenther's Albums, there are many pictures and articles from that long-running paper, to which he himself also contributed.

For botanical wood-engravings, the most distinguished exponent of this art was Worthington George Smith (1835–1917) FLS 1868. Like Archer, he had trained as an

Figure 6. *Physalis franchetii*. Wood-engraving by W.G. Smith. Proof print, p. 11, for *The Gardeners' Chronicle*, ser. 3, vol. 16, p. 441, 1894. (Photograph © The Linnean Society/ David Pescod)

architect, but soon turned to book illustration. At first, he used lithography, then changed to wood-engraving, at which he was undoubtedly master. Smith was also well known as an antiquarian and a mycologist, President of the British Mycological Society, 1904. He received the Veitch Memorial Medal from the Royal Horticultural Society in 1907. He is best known, however, as artist for *The Gardeners' Chronicle*, which ran from 1844 to 1976.

For over 40 years (1869–1910), Smith's illustrations abound, both as small vignettes within the text and as full-page plates. He had the wonderful ability to depict not merely the fine details and the texture of flowers, he could even suggest their colour. A strange idiosyncrasy of his was to alter the style of his initials "W.G.S." and the abbreviation "GARD. CHRON." to be in keeping with the fashion of the day. In 1925, his son, A.T. Smith, a photographer, presented our Society with a volume of 68 proof plates [MS 501; Figure 6] from *The Gardeners' Chronicle*. Though they lack both names and dates, they have now all been identified and catalogued. His work appeared between the years 1876 to 1910, when he retired to Dunstable, Beds., where he had resided since 1884. There are also four ink-and-wash drawings, one of which – a pear, dated 1910 – may have been his last work for the periodical.

For a few years after his departure, some inferior copies of his plates were published, but most of the illustrations in the *Chronicle* were now photographs. Indeed, photography had finally come into its own and had become the standard way to print book illustrations and the figures in periodicals and magazines. The age of engraving on metal or wood, or drawing on a lithographic stone, had finally come to an end.

ENID SLATTER

Plus ça change?

Many current concerns actually have quite long antecedents and a small selection of quotations gives an interesting perspective.

(1) Retreating glaciers are now taken as signs of global warming:

> "After an absence of twelve years, I visited the Mer de Glace last June. It exhibited in a striking degree that excess of consumption over supply which, if continued, will eventually reduce the Swiss glaciers to the mere spectres of their former selves. When I first saw the Mer de Glace its ice-cliffs towered over Les Mottets, and an arm of the Arveiron, issuing from the cliffs, plunged as a powerful cascade down the rocks. The ice has now shrunk far behind them....The ice-cascade of the Geant has suffered much from the general waste. Its crevasses are still wild, but the ice-cliffs and seracs of former days are but poorly represented today"
>
> John Tyndall: 1872; 'The Forms of Water', King, London 1876.

(2) Another example might be found in the Antarctic:

> "Climatic changes in Antarctica as early as 1832 have been recorded as periods when enormous quantities of ice were encountered in temperate latitudes. Cape Horn was most affected by it in 1854 to 1855; 21 ships reported an ice island extending from latitude 44°S, longitude 28°W to latitude 40°S, longitude 20°W, with a height of 300 feet and containing a bay 40 miles wide in which an immigrant ship was lost."
>
> Source: Explorer Shipping Corporation.

(40-44°S is about 440 km, and 20-28°W is about 600 km at these latitudes. The position is nearer to Tristan da Cunha than to S. Georgia and well north of the Antarctic convergence and the normal limit of icebergs, so it must have been considerably larger when it first broke free.)

Another story mentions one 'larger than Yorkshire' (which is 6123 square miles or 15,859 km^2) and previous icebergs had been reported as far north as 26°S. Even allowing for inaccuracy of measurement and some plain exaggeration, these stories make the recent events on the Larsen ice-shelf and the Southern Ocean look somewhat less apocalyptic. A well documented giant berg of forty years ago measured 335 km by 97 km – with an area of 11,781 square miles or 30,513 km^2 which is 'just larger than Belgium'. Such events are so rare, and the only records so relatively recent, that a proper statistical picture cannot yet be very reliable. But a recent iceberg 'as big as Rhode Island' (1,214 square miles or 3,144 km^2) is hardly unprecedented.

(3) Loss of tropical rainforests for wasteful agricultural methods is worrying but not new:

> "They cut down patches of the forest and burnt it to plant corn. After two or three years the Indian or Mestizo does not attempt to grow corn there again, as he knows the grass will spoil it, and he is too indolent to weed it out. As most of his old clearings get covered with grass, he is continually encroaching on

> the edge of the forest, beating it back gradually, but surely, ... (so that the Western) edge of the forest is several miles nearer the Atlantic than it was originally."
>
> Thomas Belt, The Naturalist in Nicaragua, 1874.

(4) Even the current 'last great extinction' was foreseen at a much earlier stage:

> "A few years since, this country abounded with wild animals; but now the emu is banished to a long distance, and the kangaroo is become scarce; to both the English greyhound is utterly destructive. It may be long before these animals are altogether exterminated, but their doom is fixed... the settlers push further and further towards the interior."
>
> Charles Darwin,
> "The Voyage of the Beagle", Journal for 1836 in Australia.

(5) Even earlier and closer to home:

> "He told, that to these waters he had come
> To gather leeches, being old and poor…
> From pond to pond he roamed from moor to moor…
> And said that, gathering leeches, far and wide
> He travelled; stirring thus about his feet
> The waters of the pools where they abide.
> "Once I could meet with them on every side;
> But they have dwindled long by slow decay;
> Yet still I persevere, and find them where I may."
>
> Wordsworth, W. Resolution and Independence, 1802

(6) The general public's aversion to science often seems severe and is said to be growing, but it already worried David Brewster over 170 years ago. Referring to "the declining taste for science" he wrote:

> "It is not easy to devise a cure for such a state of things; but the most obvious remedy is to provide the educated classes with a series of works on popular and practical science, freed from mathematical symbols and technical terms, written in simple and perspicuous language, and illustrated by facts and experiments which are level to the capacity of ordinary minds."
>
> Quarterly Review, February 1831,
> quoted in David Brewster, 'A Treatise on Optics',
> Longman, Rees, Orme, Brown & Green, London, 1831

(7) But is science too expensive to teach properly? Surely these days it can only be 'demonstrated' vicariously through the television and video screen.

> "During the Christmas Lectures of 1876-77 [*sic* – it was actually 1875-76] given on *Electricity*, Tyndall drew attention to the fact that he had used only such apparatus as the young people could make for themselves and then went

on to address himself to schoolmasters whose complaint had been that it was difficult to introduce science into schools because of the costly nature of the equipment. He refuted this and begged them to remember that the future of science in this country depended largely on the boys who were under their care."

D. Thomson in Brock, McMillan & Mollon (eds)
'John Tyndall: Essays on a Natural Philosopher', RoyalDublin Society 1981.

John Tyndall himself wrote:

"I had heard doubts expressed as to the value of Science-teaching in schools, and I had heard objections urged on the score of the expensiveness of apparatus. Both doubts and objections would, I considered, be most practically met by showing what could be done in the way of discipline and instruction, by experimental lessons involving the use of apparatus so simple and inexpensive as to be within everybody's reach."

(and later)
"The expensiveness of apparatus is sometimes urged as an obstacle to the introduction of science into schools. I hope it has been shown that the obstacle is not a real one... it is manifest that the wise expenditure of a couple of guineas would enable any competent teacher to place the leading facts and principles of frictional electricity completely at the command of his pupils; giving them thereby precious knowledge, and still more precious intellectual discipline – a discipline which invokes observation, reflection, prevision by the exercise of reason, and experimental verification... I would respectfully submit (to teachers) whether it would not be a mistake to direct their attention at present to the collection of costly apparatus... This is best done by the exhibition of the needful facts and principles with the simplest possible appliances, and by bringing their pupils into contact with actual experimental work. The very time and thought spent in devising such simple instruments will give the teacher himself a grasp and mastery of his subject which he could not otherwise obtain; but it ought to be known by the headmasters of our schools that time is needed, not only for devising such instruments, but also for preparing the experiments to be made with them after they have been devised."

John Tyndall, 'Lessons in Electricity', Longmans Green, London, 1875.

These words are wise in every respect and still apply today – it is no excuse to say that today's technology really does now demand unfeasibly expensive instruments. The only real problem is that improvising reliable demonstrations does indeed take a great deal of time and is thus scarcely feasible for more than a tiny proportion of presentations, whatever the subject. But still, as the Dodo said, "The best way to explain it is to do it" (L. Carroll, 1865)

(8) As metric 'weights' and measures are now obligatory in our high streets, from greengrocers to timber yards, it is interesting to read early opposition to metrication from one who had previously been accustomed to considerable influence, and had been in favour of large scale political and economic European unification:

> "The scientists had another idea which was completely at odds with the benefits of standardising weights and measures; they imposed the decimal system, taking the metre as the unit, and suppressed all complicated numbers. Nothing is more contrary to the organization of the intellect, the memory and the imagination... The new system of weights and measures will be a stumbling block and a source of difficulties for several generations to come... It is just tormenting the people with trivialities!"
>
> Napoleon Bonaparte, St Helena, 1823-1825.

The metric system had been established by French law in 1799 and made mandatory in 1801.

(9) On the now fashionable emphasis on near-market research:

> "...nearly all will say, "What is the use?" For we are a nation of shopkeepers, and no shopkeeper will look at research which does not promise him a financial return within a year".
>
> Apsley Cherry-Garrard,
>
> 'The Worst Journey in the World' Constable, London 1922.

It seems that Napoleon's gibe (adapted from Adam Smith) about the British being shopkeepers had stung, but the point is just as sharp today. Cherry-Garrard described the five week 'bird's-nesting' hike which he, together with E.A. ('Bill') Wilson and H.R. ('Birdie') Bowers, undertook in midwinter 1911 from Scott's Antarctic base to visit a rookery of incubating emperor penguins at Cape Crozier. Sarah Wheeler (in 'Terra Incognita', 1996 p 134) says that "afterwards...men in starched collars labouring in the Gothic scientific institutions sniffed and said that the Crozier trip had 'not added greatly to our knowledge of penguin embryology'."

This is not entirely fair. The expedition had indeed set out to collect some eggs in order to test some ideas about embryology, honestly believing the emperor penguin to be the most primitive of birds. But it does seem that their three preserved embryos were received at the Natural History Museum in 1912 with neither grace nor thanks, and were not properly described until 1934, in Glasgow. Part of the delay was caused first by the World War and later by the deaths of two successive prime investigators. By that time penguins were much better understood and the original premise was no longer believed. The sentence quoted by Wheeler was factual and a little regretful rather than dismissive or 'sniffy'. Nevertheless the intrepid party had observed one of the most amazing reproductive strategies of any warm blooded vertebrate, although a present day research council might well have criticised the inappropriate identification of the project's aims and its 'irrelevant' eventual outcome.

(10) Any dismissive comment, of course, reminds one of Thomas Bell's annual Presidential report to the Linnean Society in 1859 which remarked "The year which has passed... has not, indeed, been marked by any of those striking discoveries which at once revolutionize, so to speak, the department of science on which they bear…… A Bacon or a Newton, an Oersted or a Wheatstone, a Davy or a Daguerre, is an

occasional phenomenon, whose existence and career seem to be specially appointed by Providence, for the purpose of effecting some great important change in the conditions or pursuits of Man". (see A.T. Gage, 'A History of the Linnean Society of London, 1939, p 56, or Gage and Stearn's 'Bicentenary History...', 1988, p 57). It is often pointed out that he thus dismissed the first statements of the theory of evolution by Darwin and Wallace, presented during that year at a meeting he had himself chaired. But it also seems very strange indeed that Thomas Bell's six exemplary heroes were all *physical* scientists. Surely he, as a zoologist and PLS, could have chosen at least one name from the life sciences? There was no shortage of appropriate luminaries around at the time.

(11) But if ideas do change, it may only be in the matter of scale. Of Westfield College in the University of London during the post-war (WW2) period when she was its Principal, Baroness Mary Stocks later wrote:

> "...the golden rain of largesse from the University Grants Committee had begun to fall ... accompanied by the increasing readiness of local education authorities to give grants to students who had obtained university places. All of which was wholly desirable... and our undergraduate numbers grew from 114 to 225 (in 1951). Any expansion of a teaching institution... is bound to raise the problem of optimum size. Can it become so big as to become impersonal? Can it remain so small as to become inbred?"
>
> Mary Stocks, 'My Commonplace Book'
>
> Peter Davies, London, 1970.

By the mid-1980's Westfield College had grown to more than 1000 students but was by then considered too small to be viable and was merged with Queen Mary College. Nowadays 225 students is considered to be a healthy number for a first year undergraduate class in a single subject. Although many still share Mary Stocks' apprehensions, the perception of scale has certainly changed.

DAVID PYE FLS

Book Review

Mariette Manktelow & Petronella Kettunen: Kvinnorna kring Linne. Artea 2007. Price: S.Kr. 280.

This is surely one of the most remarkable of the many books that were published for the Linnean Jubilee last year. Unfortunately it is in Swedish, so it cannot reach as wide an audience as it deserves. The title is perhaps best translated to English as: "Women in the Linnean circle". It is not about Linnaeus as a womaniser, which he was not, though he was regarded by some as a man of great charm. I know of only two women that he courted, his wife-to-be, Sara Lisa Moraeus and Sara Rasch, daughter of the vicar of Rorstad in Norway, on his Lapponian journey. She rejected him with the following comment: " One cannot trust a Swede".

It is rather a book about the women in his vicinity – in the family and in the society. Surprisingly also a few more recent ladies are included, among them only Beatrix Potter and Astrid Cleve (Euler) may be regarded as remotely associated with Linnaeus. Beatrix Potter (1866-1943) since she once had a lecture on fungi read at the Linnean Society, and Astrid Cleve (1875-1968) who was inspired to study plants at the Linnean celebrations in 1888 in Uppsala. These are obviously included to illustrate the general theme: the role of women in botany. This feature is certainly close to the heart of the authors, so I am sorry to say that it is the least successful aspect of the book. This theme needs a much broader general discussion than possible in the present context.

It would have been better had they concentrated on Linnaeus and the women of his time, of which I only miss Queen Lovisa Ulrika who certainly took him under his wing. In this way it would have been possible to penetrate deeper into the question of how Linnaeus' view of women differed from that of his times. Whatever his sentiments about women were, he certainly saw them as quite capable botanists, as he for example proved by encouraging his eldest daughter Elisabeth Christina to publish her observations on nasturtium. He also encouraged other women, most famous among them Lady Anne Monson, granddaughter of King Charles II by his illegitimate son Charles Fitzroy. Their correspondence has been incorrectly interpreted as a love story, since Linnaeus expressed himself in ways suggesting this. However, as shown by Ann-Mari Jonsson, his excitment was mainly of a scientific nature. He tried to inspire the lady to continue her studies, and not least, to send him material. The authors have also managed to get hold of a rare portrait of her ladyship.

Of particular interest are the chapters on the women in the Linnean family. Above all it is important that the three daughters are treated as the individuals they were. They were all trained by their mother within the household of a farm. Linnaeus was criticised for not introducing them to the court when he was ennobled, but he did that to spare them from the immoral conditions he had observed when treating many of its members for syphilis.

His wife Sara Lisa has had an undeservedly bad press, based on several accounts from visiting foreign students and professors. Here she gets a much more fair treatment, based on Tullberg's recent careful study of her. She was the backbone of the Linnean household, the person who kept the family (and the farm) running. No doubt she was

rather strict and had no interest in science; worse she spoke no foreign languages – no wonder foreigners found her inaccessible. When going through Bishop Gunnerus' correspondence, I found that his amanuensis, Jens Borchgrevink, who studied with Linnaeus, had a rather more positive impression of her. She invited herself often for coffee at the Norwegian student's accommodation, certainly because she liked the drink which Swedes were not allowed to make. In addition she certainly understood some Norwegian and felt comfortable with Borchgrevink who came from her native city, Falun's equal in Norway, the mining town Roras.

The book is warmly recommended even to those who do not read Swedish, because of the many fine illustrations, even one newly made of Linnaeus' Norwegian great grandmother.

PER M. JØRGENSEN FLS

Obituaries

Gavin D. R. Bridson FLS (1936-2008)

Librarian & Archivist of the Linnean Society of London 1969-1983

It is with great sadness that we report the death of Gavin Bridson on 10 January 2008. Gavin was the Society's Librarian for 13 years and, despite having moved to the United States more than two decades ago, he had maintained his links with the Society. He made annual visits to these shores and always came in to the Library to catch up with what was going on and to do more research among the collections. At the time of his death, Gavin was working with the Society's Special Publications Manager, Leonie Berwick, on the second edition of his essential source book *The history of natural history: an annotated bibliography.* This will be published by the Society later in 2008 (in one illustrated volume rather than in four volumes as stated below) and it is hoped that at that time the Society will be able to arrange a meeting to celebrate Gavin's contribution to the Society.

We reproduce here the obituary, written by Robin Myers, which was published in the Independent.

As the son of a book-collector and grandson of an antiquarian bookseller, Gavin Bridson had bibliophily in his blood. His bibliographical output in graphic art printing and natural history illustration was prodigious. A Guide to Nineteenth Century Colour Printers (1975), jointly with Geoffrey Wakeman, was followed by Printmaking & Picture Printing: a bibliographical guide to artistic and industrial techniques in Britain, 1750-1900 (1984). After Wakeman's death in 1987, Bridson continued alone. His last letter announced the impending completion of his "Historical Directory of Graphic Arts Printers in the British Isles, 1750-1900" – if over-large for paper publication, then to be available online.

In natural history, his first publication was Natural History Manuscript Resources in the British Isles (1980, with Valerie Phillips and Anthony Harvey). The History of Natural History: an annotated bibliography (1994), revised in four volumes, will be

published by the Linnean Society later this year. In 1990 came, with James White, Plant, Animal & Anatomical Illustration in Art & Science: a bibliographical guide from the 16th century to the present day. His exhibition catalogue Printmaking in the Service of Botany (1986) was followed by American Botanical Prints of Two Centuries (2003), for which he was awarded the medal of the American Historical Print Collectors Society in 2005 – in 1992, the Society for the History of Natural History had awarded him their Founder's Medal.

Gavin Bridson was the son of the BBC producer D.G. Bridson, and Vera Richardson, a fabric designer. After a disrupted and unhappy childhood – evacuation, with his twin sister, Hermione, was traumatic; his parents split up, and his mother converted to Roman Catholicism and moved to Braunton in Devon – Gavin was sent to Douai Abbey, a Benedictine foundation in Berkshire. There he nearly died of pneumonia and pleurisy, but apart from recollections of interminable chapel services and choir singing, school seems largely to have passed him by – he made no lasting friends, sat no public examinations, and left school at 16 to work in a television shop. He built his own radio and became a wireless ham.

Loving jazz, he began studying its history and buying records, eventually amassing a vast collection and an encyclopaedic knowledge. In later life, he never rested until he had researched every aspect of a subject, whether for work or a leisure pursuit. In 1954 he was called up for National Service in the Royal Hampshire Regiment, and saw active combat in Malaya (as it then was) as a drill sergeant in intelligence. This gave him a taste for detective work, which by a circuitous route, via the police, which he joined on being demobbed, eventually led him to bibliographical research.

He had envisaged being engaged in forensic work, but crime was low in Torquay and filling up a charge sheet by booking women parked on double-yellow lines not at all to his taste. He refused promotion, resigned and returned to live with his mother in Braunton (his sister had left home and he did not see her again for many years). He decided to train as a physiotherapist but, failing to get a grant, enrolled instead at North Devon Technical College where he worked for O- and A-level biology, botany, zoology and geography and met the 18-year-old Diane Sheppard, who would become his first wife.

A holiday job at Mr Smith's elegant Corner Book Shop in Ilfracombe led, through an introduction by a visiting bookseller, Ben Weinreb, to a job with Bernard Quaritch in London in 1962. The next year he married Diane and re-met his father book-hunting at Quaritch. Gavin Bridson was soon spending lunch-hours and weekends book- and print-hunting. It was not long before he was head-hunted by A.C. Townsend, the chief librarian of the Natural History Museum.

Bridson recalled the interview, with Townsend's answering the board's questions on his behalf, before the tongue-tied, self-effacing young man could get a word out. After a brief, happy time, Townsend died in a railway accident, and in 1969 Bridson left to become Librarian of the Linnean Society of London in Burlington House, having been elected a Fellow of the society in 1968.

The library was large and possessed Carl Linné's books, manuscripts and natural history specimens. In the next 13 years, Bridson, almost single-handed, moved the

entire book-stock three times and devised the transfer of the catalogue from card to computer, laying down the basis of the current on-line catalogue. His system was the yardstick ever afterwards, every problem eliciting the question, as his successor, Gina Douglas put it, "What would Gavin do?"

In 1982 Bridson moved to the Hunt Botanical Institute in Pittsburgh, where he stayed for the rest of his life. His job as Bibliographer and Principal Research Scholar fitted the workaholic Bridson like a glove. One of his major tasks was to update the botanical bibiography the B-P-H (Botanico-Periodicum-Huntianum). By 2004 he had completed 33,000 titles.

He was a loyal and generous friend, a surprisingly good mimic, an evocative, though reluctant, correspondent. He kept his ties with England while finding enjoyment and fulfilment in what would seem an alien environment for one so quintessentially English. A good-looking, quiet man, always neat and elegant, in collar and tie when all around him were in jeans and t-shirt, he retained his soft-spoken English speech to the last. His marriage to Marlene Aglinski in 1988 brought him security and lasting happiness.

Robin Myers

Gavin Douglas Ruthven Bridson, bibliographer and librarian: born London 12 February 1936; Bibliographer and Principal Research Scholar, Hunt Institute for Botanical Documentation, Pittsburgh 1982-2008; married 1963 Diane Sheppard (one daughter; marriage dissolved), 1988 Marlene Aglinski; died Pittsburgh, Pennsylvania 10 January 2008.

Reprinted by permission from *The Independent*, Obituaries, 22 February 2008.

Florence Eva Crackles
Botanist (1918-2007)

Fellow of the Linnean Society 1966 - 1998

Florence Eva Crackles was born in Kingston upon Hull and despite a tough domestic economy and wartime she managed to achieve a Bachelor of Science (General) Degree (External, London) in mathematics and chemistry at age 22 years. Her mathematics tutor was Dr Jacob 'Bruno' Bronowski, and it was clear that this great man influenced Eva's intellectual and philosophical development, and that her father sowed the first seed of a flourishing career in the study of natural history as he took her for walks in the countryside.

In 1941 Eva started teaching in Hull then, briefly, in Cambridge before spending the remainder of her active teaching career back in Hull. Her first venture into organised study of natural history came by joining the Hull Scientific and Field Naturalists Club in 1941 and then the Yorkshire Naturalists Union (YNU) in 1943. At that time Eva divided her interest between birds and botany. However, in the early 1950's Eva's interest in birds waned as greater interest in plants took hold. The wartime bombing of Hull had produced oases of wildflowers on derelict sites and Eva's early accounts of these, her activity writing '*Crackles Country'* for the Hull Daily Mail and her work on

evening classes for the Workers' Educational Association launched Eva into recognition by both the public and academia. She joined the Botanical Society of the British Isles (BSBI) and took the reins as recorder for Vice County 61, (S.E. Yorkshire) both for the BSBI and for the YNU.

Eva was elected to Fellowship of the Linnean Society of London in 1966. Research on *Calamagrostis stricta*, *C. canescens* and their hybrid found at Leven Canal led to a Masters Degree from the University of Hull in 1978. In the 1980's, following the Wildlife and Countryside Act, Eva was engaged in characterising the botanical importance of various sites identified as potential Sites of Special Scientific Interest. Then, in 1990, after an enormous amount of research involving many local botanists, Eva published, "The Flora of the East Riding of Yorkshire". It was shortly after this that Eva's mobility declined and she became wheelchair-bound in the field. In 1991, Hull University conferred upon Eva the Degree of Doctor of Science *honoris causa* and then, in 1992, Her Majesty the Queen graciously granted Membership of the Most Excellent Order of the British Empire (MBE) for her work in conservation. In 1998, with failing health, Eva realised that she could no longer cope and she retired as BSBI recorder and from the Linnean Society, and by 2000 had become incapable of caring for herself.

Eva was also a supporter of the Yorkshire Wildlife Trust, the South Holderness Countryside Society and the East Yorkshire Local History Society. Eva's training in mathematics and chemistry made her very intense and scientifically exacting in all that she hands and mind to, and she had a formidable memory for detail. Eva contributed so much to local botany, and is missed.

PETER J. COOK, MBE, FLS, BSc

The Linnean Society Programme

continued from overleaf

26th–29th August	Tues. – Fri.	SYSTEMA NATURAE 250 Andrew Polaszek FLS	Meeting in Paris for details see *www.iczn.org*
1st-3rd Sept.	Mon. – Wed.	CLIMATE CHANGE AND SYSTEMATICS	Three-day meeting
18th Sept.	Thurs.	LINNAEUS AND THE ROLE OF WOMEN IN 18TH CENTURY BOTANY Mariette Manktelow FLS	Evening meeting
20th Sept.	Sat.	LONDON OPEN HOUSE	
25th Sept.	Thurs. 6.30pm	INSPIRE Alistair Land FLS	Sixth-form lecture

The Linnean Society
Programme

17th April	Thurs.	CONSERVING NATURE IN LONDON David Bevan FLS	Evening Meeting
24th April	Thurs. 18.30	ORDER Alistair Land FLS	Sixth-form lecture
2nd May	Fri.	THE LINNEAN TERCENTENARY YEAR – A PICTORIAL REVIEW Jenny Edmonds FLS	Evening Meeting
8th May	Thurs.	HOOKER AND ISLANDS Sam Berry FLS	The Hooker Lecture Evening Meeting
15th May	Thurs.	THE ROLE OF BOTANIC GARDENS IN THE 21st CENTURY † Dawn Sanders FLS	Day Meeting
23rd May*	Friday	ANNIVERSARY MEETING	Afternoon meeting
29th–30th May	Thurs. –Fri.	WOOD MATTERS: A CELEBRATION OF THE WORK OF JOHN BARNETT † David Cutler PLS	Two-day meeting
29th–30th May	Thurs. –Fri.	UPDATING THE LINNEAN HERITAGE: NAMES AS TOOLS FOR THINKING ABOUT ANIMALS AND PLANTS † Sandro Minelli FLS	at Padua University, Padua, Italy
26th June	Thurs.	A NATURAL HISTORY OF CONIFERS Aljos Farjon FLS	Evening meeting and book launch
1st July	Tues.	150th ANNIVERSARY OF THE READING OF THE DARWIN/WALLACE PAPERS Gareth Nelson FMLS and Allen Orr	Two-day meeting and Conversazione
3rd–4th July	Thurs. – Fri.	THE DRIVING FORCES OF EVOLUTION: FROM DARWIN TO THE MODERN AGE † Frank Ryan FLS and David Cutler FLS	Two-day meeting
10th July	Thurs.	DISSECTING CANCER AND THE EVOLUTIONARY PROCESS Gerard Evan	Two-day meeting

programme continued inside back cover.

† organiser * Election of new Fellows

Unless stated otherwise, all meetings are held in the Society's Rooms. Evening meetings start at 6 pm with tea available in the library from 5.30. For further details please contact the Society office or consult the website – address inside the front cover.

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