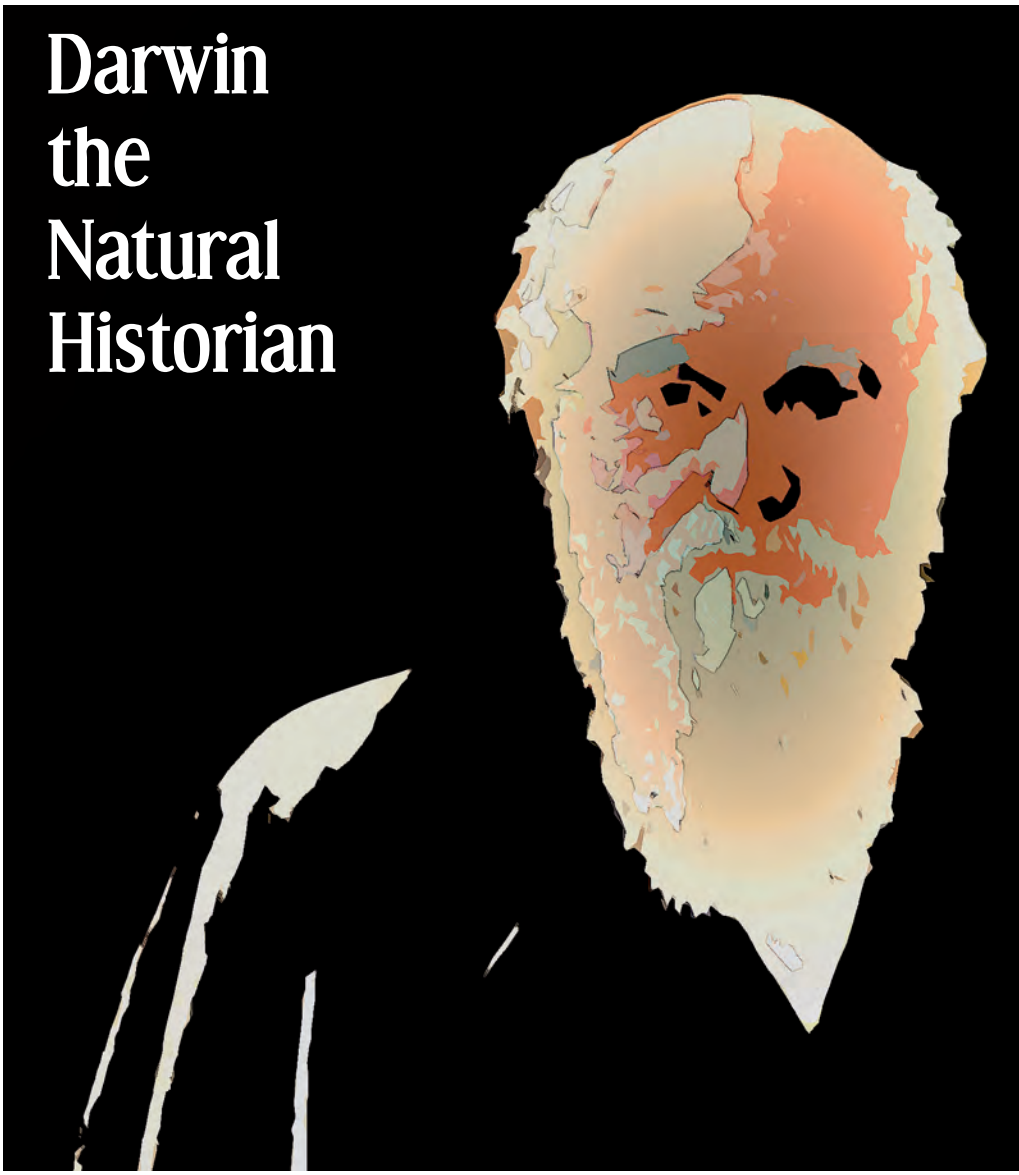
ISSN 1759-8036

PULSE

Issue 1
February 2009

News from the Linnean Society of London – A living forum for biology

Darwin the Natural Historian



Linnean Society of London

As we embark on 2009, the bicentenary of Charles Darwin's birth and the 150th anniversary of the publication of his celebrated book *On the Origin of Species by Means of Natural Selection*, it is worth reflecting on not only how the ideas sparked by the man and his work have changed our own outlook on life on Earth, but also on how Victorian science differs from our scientific world today. Natural history, all of whose branches the Linnean Society exists to support, is often not even considered science today. Biology—a term coined by Jean Baptiste Monet, Chevalier de Lamarck—has become largely a science of laboratories rather than the field, a very different situation from the one in which Darwin developed his theory. Natural history, in Darwin's day, encompassed the study of all of nature, its identity, relationships and interactions; today these aspects of what is essentially an integrated way in which to look at the world around us are seen as three separate enterprises. Ernst Haeckel, who did more to popularise Darwinism and the validity of evolution by natural selection than any other of Darwin's contemporaries, defined true natural philosophy—the science all Victorian naturalists considered they were undertaking—as an integration of ecology, embryology and systematics (taxonomy). For the natural historians of the 19th century the study of the whole organism in its environment was key to understanding how the world worked; it was also pivotal in the genesis of Darwin's ideas—he not only observed many new and exciting plants and animals whilst voyaging on the Beagle, but also worked for years on the taxonomy of the barnacles, whose study necessitates detailed observations of many life stages. Theories do not usually arise from thin air, although the history of science often portrays theoretical advances as giant leaps. These leaps, however, occur—both then and now—in the context of the actual practice of science, in observation and experiment. Darwin's 'big idea' that truly changed the way in which we view the world around us was firmly rooted in what he called "facts"; observations of living things and their interactions—in short, evolution as conceived by Darwin was rooted in natural history. Perhaps it is time to take a leaf from Darwin's book, and to concentrate our efforts during this year of celebration towards the rejuvenation of "Natural History in all its branches". Our Society has a unique and special role to play in such a rejuvenation, as Fellows we span the gamut of today's biology, a modern natural history. Darwin200 can be for the Linnean Society a time to take stock of how natural history can again become the platform from which world-changing views are launched. The integrative nature of natural history is as important today as it was for Charles Darwin; perhaps in this celebratory year natural history can once again become the central, integrative discipline it was in Darwin's day.

Sandra Knapp FLS, Botanical Secretary
(Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD)

The LINNEAN SOCIETY of London

Message from the Executive Secretary

Welcome to the first edition of PuLSe, the new magazine of the Linnean Society. We feel that the name of the publication reflects both the active and contemporary nature of the Society—after 221 years the Society and the cultivation of the science of natural history in all its branches is very much alive!

Each issue of PuLSe will contain articles about historical and contemporary scientific topics; in this anniversary year, we launch the magazine with an article on Darwin. We will also incorporate information related to recent meetings of the Society; this issue contains articles by Professor Mary P. Winsor FLS, following her lecture on Darwin and Huxley's correspondence in December 2008 and a review of the thought-provoking meeting on restoration ecology which the Society hosted with the World Land Trust in November 2008. We want PuLSe to reflect the diversity and interests of the Society's membership and we are delighted that Niki Simpson FLS, known for her innovative biological illustration and design using digital images, has also contributed to this issue. We also hope that PuLSe will offer a window on the "behind-the-scenes" world of the Society; this issue contains two contributions relating to the conservation of both our books and pictures.

Finally and most importantly, we trust that PuLSe will become a vibrant means of communicating with our Fellows and for you to communicate with us. We would really like to hear from you and would welcome your involvement in both writing for the newsletter (see p. 8 for more information) and in any other aspect of the Society's activity.

We look forward to hearing your comments and views.

Best wishes

Ruth Temple

Leonie Berwick

President's Welcome

Welcome to the new magazine of the Linnean Society! With an expanding programme of meetings and activities, Council decided that we should produce a regular publication containing interesting and thought-provoking articles which, together with *The Linnean*, our website, events brochures and email update service will also provide a mechanism for ensuring you are kept up-to-date with all of the Society's activities.

We hope that the magazine will also become a vehicle for letters and exchanges of views, comments and information likely to be of interest to our members. Don't hesitate to write! To head off the obvious enquiry—'What happens to *The Linnean*?'—I am pleased to say that this will continue in production in its familiar form, but with three copies during 2009 and two copies per year thereafter.

With good wishes, and the hope that this innovation meets with your approval,

David Cutler

Linnean Society of London

Events Brochures Replace Programme Cards

You may have noticed that we are replacing the programme card previously circulated to Fellows with a series of informative events brochures. This will avoid the need to squeeze details onto a card using a decreasing and illegible point size, and allows us to inform you of any changes to the programme or additional meetings arranged as the year progresses.

The PULSE Logo

During the design process for this publication, we wanted to create a logo that encompassed the Society's role in science in a simple and unfettered way. Our main aim was to come up with a design that looked clean and fresh but also incorporated our sense of history. With this in mind, we decided to look to our surroundings for ideas. The 'LS' from PuLSe was inspired by the raised 'LS' plasterwork in our beautiful Victorian ceiling. A more specific reminder of Linnaeus was also needed, the obvious choice being *Linnaea borealis*. However, rather than using the actual 'T-shaped' structure of the flowering plant, we were drawn to the more fluid lines of its representation in Linnaeus' own *Flora Lapponica* (1737). We hope you are as keen on the result as we are.

Linnean Society of London

Digital Botanical Illustrations

Since 2003, when awarded funding for training by the *Queen Elizabeth Scholarship Trust*, I have been investigating the digital workspace for botanical illustration. As a botanical artist in the traditional sense, it seemed at that time, a huge leap into the unknown. Originally I had imagined that I would have to learn to work with a digital tablet and pen, but once I found that scanned transparencies (not having a digital camera at the time) could be mended and manipulated, 'cut out' and re-arranged on screen, then the role of photography for illustration simply had to be explored.

My composite illustrations are digitally created versions of the traditional botanical plate, containing the diagnostic features of the taxon concerned, including sections and dissections as necessary, and with all parts accurately measured and shown with metric scale bars. Wherever possible the composites are made up of photographic parts which are untouched, save for being cut away from their backgrounds, so that the integrity of the specimen is retained. But the technique is really one of digital mixed media, and composites can contain scanning electron micrographs, for example of pollen grains, flatbed scans, digital drawings and even scanned versions of traditional artwork. Additional information is contained in a panel containing a colour key, time bar and botanical symbols, with the overall aim of comprehensive, reference standard illustrations. The apparent anonymity of photography, rather than the individual style of a watercolour painter, suits the scientific purpose, and the ease of enlargement can readily reveal all manner of, otherwise unseen, details. Both living colour and living form, which are generally lost on the pressing and drying of herbarium specimens, are recorded, and with the amount of botanical detail that it is possible to include, such composite images can be viewed as 'image specimens' to supplement herbarium specimens of the same individual.

Over the last five years I have tried out the technique on a wide range of plant types, colours and sizes. Forty of my illustrations were shown in an exhibition, entitled "*Digital Diversity – a new approach to botanical illustration*" in 2007, which was held at the Botanisches Museum, Berlin-Dahlem in Germany at the invitation of Professor Walter Lack (FMLS). A virtual 'book' of composite images was displayed on-screen, where visitors could turn over the pages with a mouse and explore the plants at varying magnifications using a virtual magnifying glass.

Niki Simpson

Digital botanical illustrations of *Amanita muscaria*, *Arum maculatum* and *Quercus robur*.

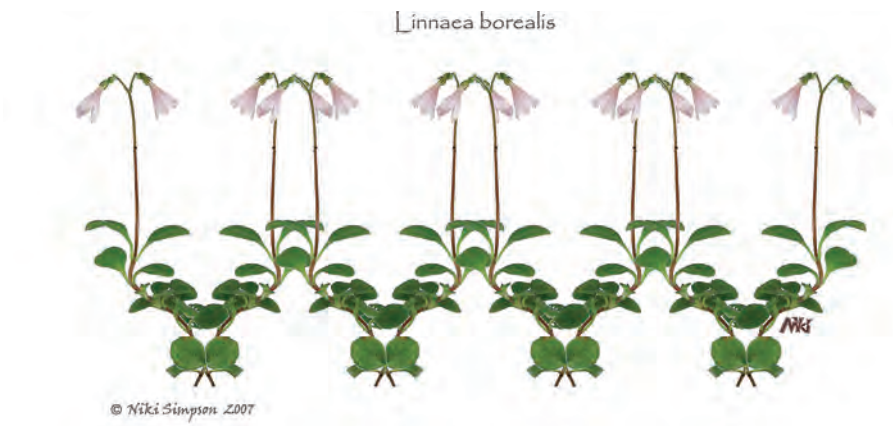
A visitor to the Berlin exhibition magnifies a composite image within the virtual book. (Photo by kind permission of Pippa Cruickshank.)

My underlying interest is in using the power of images to raise awareness of, and communicate information about, plants. My aim is for highly informative images which, by being as independent of language as possible, can be understood by readers of all languages and are accessible to viewers of a wide range of interests and ages. Producing images for educational purposes is of particular interest and I am trying to develop my work interactively for this, though I can't resist producing some design work from my plant images along the way.

The scientific illustrations have been produced in collaboration with botanist Peter Barnes, and further information about the composites can be found in our article recently published in the *Curtis's Botanical Magazine*. Forty illustrations (low resolution only), though not yet my design work, can be seen on my website. For anyone wishing to see the print quality of such digitally created illustrations at larger sizes, archive quality prints of my work are held in the *RHS Lindley Library* Picture Collection in London, which is open to the public by appointment.

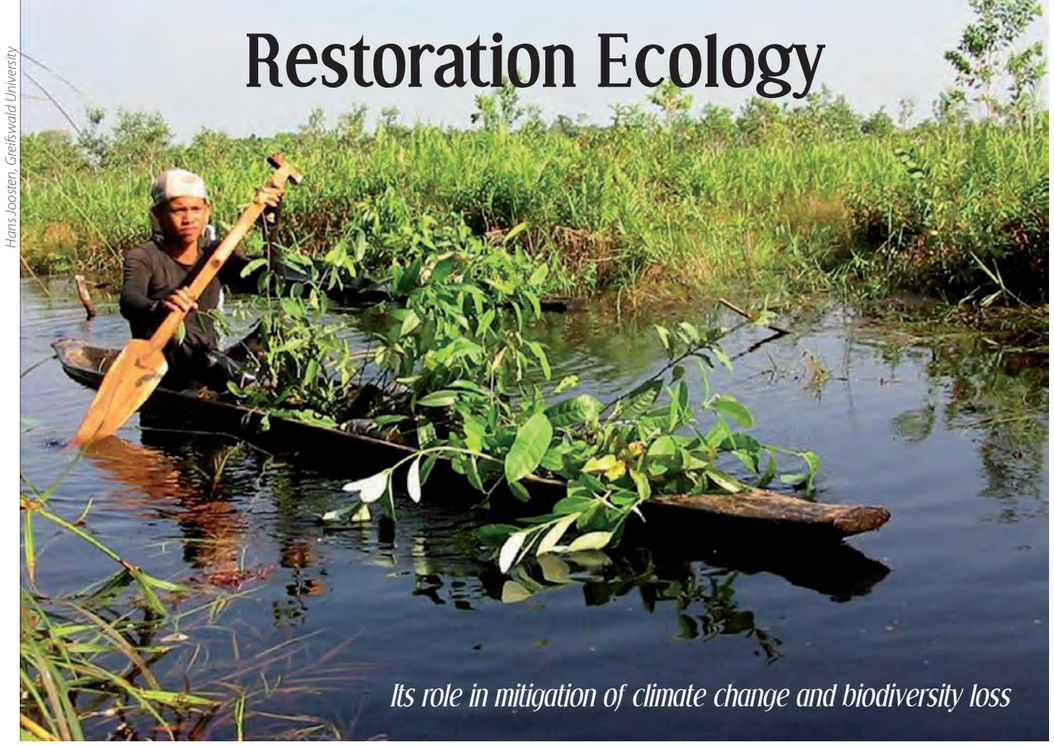
Niki Simpson FLS

Website: www.nikisimpson.co.uk
Email: nikisimp@aol.com



Designs on the British flora No. 7: "Twinflower – *Linnaea borealis*" designed originally for use within a virtual book, entitled *Linnaeus and plant descriptions*. This was created for display at RHS Garden Wisley for the Linnaean Tercentenary in May 2007.

Restoration Ecology



Hans Joosten, Greifswald University

Its role in mitigation of climate change and biodiversity loss

Many terrestrial and marine ecosystems, which are being eroded by human activities, are central to climate regulation and the damage is exacerbated by positive feedback from the changing climate. Along with the resultant loss of habitat and changing environmental conditions, species extinctions are occurring at alarmingly high rates.

In November 2008, the Linnean Society held a meeting in association with the World Land Trust (www.worldlandtrust.org) which assessed the extent to which restoration of damaged or lost biologically diverse ecosystems could contribute to mitigation of climate change globally or regionally. Much current field work aims to mitigate climate change and loss of biodiversity, looking at the technical, social and economic aspects of implementation.

Competition for land

Most of the loss of species rich terrestrial habitat in the last century has been through anthropogenic change in land use—although agricultural land has gone out of production in North America and Eurasia, huge areas of forest and grassland have been converted to pasture and crop production in the tropics. The demand for crops for biofuels competes for land with food production and brings about further land conversion. The avoided emissions from biofuels use are generally less than the carbon that would be sequestered by forest restoration; moreover, the emissions associated with land use change are large compared with the avoided emissions. Hence, maintenance and restoration of forests ranks above biofuels for carbon mitigation.

Renton Righelato

Burning forest, Esmeraldas, Ecuador

A range of analyses suggest the potential for forest restoration on substantial areas of land at carbon prices of up to $20/tonne CO_2. To achieve the modest contribution of tropical reforestation or afforestation to carbon mitigation indicated in the IPCC's Fourth Assessment Report (around 0.5–1 $GtCO_2$/yr) implies restoring 50–100 million hectares to forest. The challenge for conservation is to develop the capacity to scale up habitat restoration accordingly.

Renton Righelato, World Land Trust

The impact of climate change on major habitats

Climate change will affect ecosystems, and ecosystem changes will affect climate, the two are tightly coupled within the Earth System and it is impossible to study either in isolation. The global carbon cycle is an important control on climate, currently it absorbs 50% of our emissions; climate change reduces this ability to absorb CO_2.

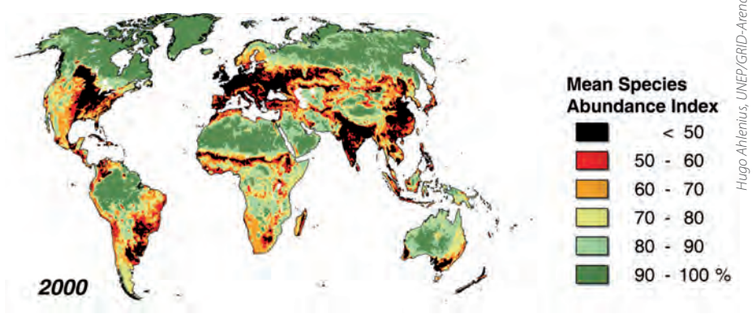
New ground data show that in the last few years droughts in the Amazon have been worse than over the previous decade, simulations have shown significant future dieback of Amazon forest in response to local climate change. Forests provide natural protection against the pollution which we cause: 50Gt of carbon emissions could be saved by a 50% reduction in deforestation rates (Guillison et al. 2007), there is further mitigation potential in re-afforestation. These measures can be facilitated by international collaboration with local and national governments.

Chris Jones, Met Office Hadley Centre, UK

Hotspots of diversity and extinction

Global conservation prioritization usually emphasises areas with the highest species-richness or where many species are thought to be in imminent risk of extinction. However, this is a reactive approach to conservation planning, which may not be optimal given the scale of ongoing global changes. Large-scale comparative analyses of risk patterns and correlates make it possible to see how the levels of extinction risk in a region depend on the intensity of human effects, which varies greatly across the globe. This spatial variation in levels of damage make it possible in principle to predict how extinction risk patterns will change as impacts increase. Climate change has so far not been a major driver of mammalian decline, making it hard to model in the same way, but can be included by considering it as a driver of habitat loss. The framework could help to highlight the consequences of choosing among different future climatic and socioeconomic scenarios, and could help conservation efforts to get ahead of the curve, rather than reacting to declines that are already underway.

Andy Purvis, Imperial College London



Hugo Ahlenius, UNEP/GRID-Arendal

Biodiversity hotspots. Source: GLOBIO 3 analysis, by MNP, UNEP-WCMC and UNEP/GRID-Arendal, published in: UNEP. 2007. Global Environment Outlook 4 - Environment For Development. Nairobi, Kenya: UNEP. See http://maps.grida.no/go/graphic/biodiversity-loss-state-and-scenarios-2006-and-2050

REDD: the international climate change process

Reducing emissions from deforestation and degradation in developing countries (REDD) is now a core part of the so-called Bali Action Plan for an international post-2012 climate change regime. REDD now includes not only the concept of rewarding countries for reducing deforestation but for slowing degradation too. Also, the scope of the regime now includes sustainable forest management and enhancement of carbon stocks.

Although the concept of REDD is supported by all nations, there is considerable disagreement about how governments would be compensated for reducing emissions and enhancing carbon stocks. Some nations, such as Papua New Guinea, support a market-based approach whereas others, such as Brazil, favour a fund. In between there is a host of proposals for market-linked approaches and different types of fund. A key issue is to develop a mechanism that will deliver the sums of money needed to address the drivers for deforestation, which are conservatively estimated at about $10 billion per year.

John Lanchbery, RSPB

Mangrove restoration

Efforts are being made to restore and protect mangroves in many tropical and sub-tropical countries. In places such as Bangladesh, India, Thailand and Vietnam, mangrove "green-belts" have been established through assisted restoration, or rehabilitation. The December 2004 tsunami prompted these and other countries to scale up their mangrove restoration efforts, while even more recent events, such as Typhoon Sidr and Typhoon Nargis have revealed how effectively mangroves can mitigate against severe climatic events; but conversely, how loss of mangrove forests can contribute to the greater severity of such disasters.

Leonie Berwick

Mangroves can mitigate against climatic events

Diversion of surface freshwater for irrigation purposes, groundwater extraction, construction of seawalls and other coastal engineering structures, further forest degradation, pollution, or human encroachment into the back-mangroves, could significantly increase the vulnerability of mangroves to climate change events. Thus, to be effective, mangrove restoration efforts should be integrated into an overall coastal planning process that *inter alia* protects the resilience of mangroves to climate change.

Donald J. Macintosh,
Mangroves for the Future (MFF) initiative

Peatlands loss and restoration

Peatlands are increasingly subject to degradation resulting from land conversion, fires, drainage and overexploitation. Each year, this leads to the release of enormous quantities of carbon dioxide, equivalent to 11.5% of global fossil fuel emissions. In Southeast Asia, degraded peat soils emit a staggering 2000 Mt CO_2 annually, largely as a result of oil palm and pulp plantation development.

For over 10 years Wetlands International and partner organizations have been piloting community-based peatland restoration measures, involving construction of dams in drainage canals, fire suppression, land-use planning and re-greening activities. This has led to an estimated avoided emission of 5,000,000 tonnes of CO_2. Currently efforts are being made to upscale these approaches, by developing formal market mechanisms for trading of peatland carbon and by investigating options for inclusion of peatlands under REDD.

Pieter van Eijk, Wetlands International

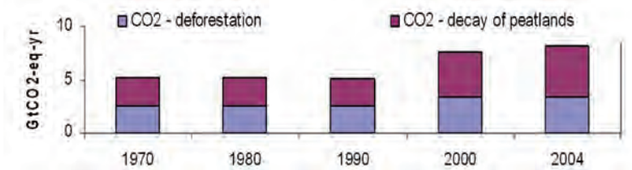
Forest loss and restoration

Tropical montane forests are well known reservoirs of biodiversity, supporting a large range of endemic and threatened species, but have largely been overlooked as substantial carbon stores. Research in permanent one-hectare forest plots shows that mature tropical montane forest in Ecuador stores more than 100 tC/ha (370 tCO_2/ha). Natural regeneration of abandoned pasture sites sequesters 5 tC/ha/yr for the first 15 years. Use of this carbon stocking potential has been tested as a conservation financing mechanism through voluntary greenhouse gas emissions offsetting in small-scale demonstrations. Land parcels carrying mosaics of forest patches and open pasture are secured and incorporated in reserves. This scheme has proved a useful additional tool for forest protection but carries high long-term monitoring costs. At a small scale it is attractive to individuals and enterprises who wish to conserve biodiversity while voluntarily addressing their personal carbon footprint, and are willing to pay accordingly.

Dominick Spracklen, University of Leeds and
Roger Wilson, World Land Trust

KEY:
Gt = Gigatonnes
Mt = Megatonnes
tC/ha = Tonnes of carbon per hectare
GtCO2-eq-yr = Gigatonnes of carbon dioxide equivalent per year

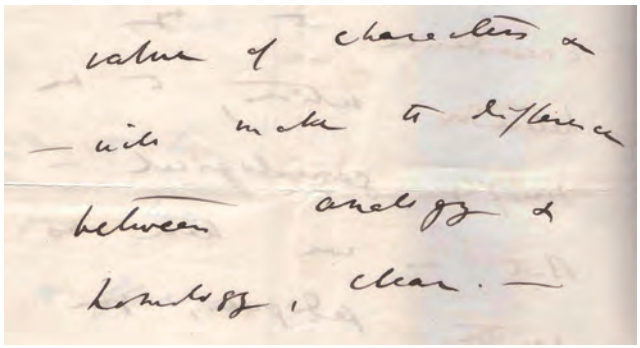
Abstracts and presentations from this meeting are available to download from our website:
www.linnean.org



Peatlands loss and deforestation. Source: The IPCC Fourth Assessment Report, May 2007

Darwin and Huxley's Disagreement over Taxonomy's Connection to Evolution

Whether classification should or could express phylogeny, and if so, exactly how, was far from obvious to Victorians. In 1857 Darwin privately confided that he expected classification to become, some day, "simply genealogical", and predicted that his theory would "clear away an immense amount of rubbish about the value of characters". His correspondent, Professor Huxley, not yet anyone's bulldog, firmly refused to go along. The two men soon agreed to disagree and dropped the topic, but their quarrel was significant. The difference in their viewpoint reflected distinct arenas of scientific activity, Darwin having worked closely with specialized taxonomists for two decades, then joined their ranks with his cirripede monographs, while Huxley's research was centered in comparative anatomy and morphology. These arenas correspond to what Mayr described as "bottom up" versus "top down" styles of classifying, which translates to the gathering of species into genera versus the dividing of kingdoms into classes and orders. The distinction has to do with equipment and professional identity, not just method.



College Archives, Imperial College London

A small section of the epic postscript in Darwin's 26 September 1857 letter to Huxley, in which he writes: "value of characters &—will make the difference between analogy & homology, clear.—"

Huxley's reply to Darwin appealed to the authority of Cuvier, which leads us back to those years in Paris when questions of scientific method were entangled in highly dangerous politics. Enlightenment philosophy included a tension between the empiricism of Diderot and the rationalism of Condillac, for whom Newton's *Principia Mathematica* was the ideal of science. After the Terror, Cuvier skilfully deployed bits of both philosophies. Huxley's career paralleled Cuvier's in several ways, including their success in convincing their governments to finance scientific education. Huxley scorned Owen's archetypes as mere metaphysics, but once he had laundered them into bare "plans" Huxley remained attached to them. Neither these plans nor general propositions impressed Darwin, but it was Huxley who set the biology curriculum for the following several generations.

Mary P. Winsor FLS

Building for the Future

The Society has a remarkable and illustrious history; but it is a history of innovation and, to maintain it, the organisation continues to adapt to meet the needs of the next generation of biologists and the wider community. The Society now has a unique opportunity to restore and redevelop the newly-acquired rooms in the Burlington House Central Tower, with its self-contained staircase and disused lift shaft. The Society wishes to develop these rooms to create a modern meeting room with associated facilities to enable the Society to increase its capacity for outreach; develop a purpose-built Archive Centre to provide dedicated, secure, conservation-standard storage coupled with a supervised research area to facilitate wider access to the collections; and improve access throughout by the installation of a lift and staircase linked to all floors of the existing rooms, meeting our public access, health and safety requirements.

To move forward and to realise the next critically important stage of capital development, external funding is required. We are steadily developing and submitting approaches for capital projects now that our building plans have been approved by Westminster City Council. If you have any recommendations for funding opportunities relating to any of our projects, please contact Elaine Shaughnessy at elaine@linnean.org.

Elaine Shaughnessy, Head of Development

Linnean Society of London

A virtual image of the Archive Centre

Leonie Berwick

The disused lift shaft

Conservation Corner

Re-binding Edward Tyson's Anatomy of a Pygmie (1699)

In the summer of 2008 I had the extraordinary honour of repairing and binding the Linnean Society's copy of *Orang-Outang, sive Homo Sylvestris*: or, the A*natomy of a Pygmie* by Edward Tyson. Published in 1699, it was the first anatomical comparison between ape and man and marked the beginnings of primatology, 160 years before Charles Darwin's *On the Origin of Species*. Tyson recognised that the "Pygmy" he examined (which was, in fact, a young chimpanzee) was neither a man nor a monkey but a separate species; he also suggested the "missing link" theory that man was probably a relative of "lesser" animals.

Isabel Mallet

Sewing the spine

The history of the Linnean Society's copy of this book is uncertain. It was probably rebound in the late 19th–early 20th century, and from the condition of the plates and the text block it could be presumed that the essays and plates were sold unbound, maybe even separately. This was fairly common in the 17th century book-binding was expensive and usually left up to the private owner of the publication. In this copy of the volume the original title had been cut from the title page and pasted onto heavy, acidic paper. After soaking the label to remove it, another label was revealed which read: "Hazard's circulating library, Cheap Street, Bath". On further investigation I found out this was the ticket for the circulating library of Samuel Hazard, printer and bookbinder, in business between 1772 and 1806, to which this book belonged. The circulating library was an important cultural institution in England in the 1780s and would provide the lower gentry and middle classes with access to a wide range of literature. Although the Linnean Society's copy is in poor condition, it seems to signify that it has been read extensively which makes the book even more fascinating in my opinion.

Isabel Mallet

Binding onto vellum strips

Janet Ashdown and I made the decision early on to bind the book in vellum. One of the most delicate parts of the restoration was repairing the plates, different anatomical engravings of the 'pygmy', each signed "M. Vander Gucht Scul". Two plates were missing completely from the copy and others were badly damaged, sometimes half the drawing was missing. In a folder that accompanies the book we have included prints of the missing plates, obtained from a copy in the library of the Natural History Museum, London. Once every page was checked and mended (if needed) I bound the text and plates together on five vellum strips. These vellum strips were then sewn and pasted into a case binding of vellum on board. The process was slow as drying took a long time and everything had to be done carefully and meticulously. The effort and time I put in made the end result very satisfying, knowing that it could now return to its object status: a book, and that it could be read again. I am extremely grateful to everyone at the Society for giving me this responsibility and especially Janet Ashdown for helping and encouraging me throughout the project.

Isabel Mallet

Isabel Mallet

The mended book

Conservation and mounting of *Kaempferia*, by G.D. Ehret, 1740

In the 1970s the Linnean Society was generously given the George Dionysius Ehret (1708–1770) painting of *Kaempferia*, painted in 1740. During the last century the vellum substrate had been adhered to a piece of strawboard using gum or animal glue (presumably to keep it flat) and the painting mounted in a small wooden frame without a mount to prevent contact between the image and glass. Not only had the joints of the frame loosened and the dust was creeping in, but the bottom left corner of the vellum had started to discolour and cockle, possibly because it had got damp. Owing to this, the painting was in need of conservation.

Vellum is notoriously reactive to changes in humidity and must be mounted in a fashion that will allow for movement as atmospheric changes occur. If forced to stay rigid it will warp or tear, and additionally no part of the painting should be in contact with the frame, glass or backing.

During the process of conservation, the old frame was discarded and the brittle strawboard was removed from the back of the vellum by scraping it layer by layer with a scalpel and tweezers, which took several hours. A free-floating mount was devised, employing twisted linen threads attached to the edge of the vellum and stretched over a piece of notched cotton rag board. Changes in humidity will cause the threads to twist and untwist so allowing slight movement. Any extreme change in atmosphere would result in the threads pulling away from the vellum allowing even greater movement.

Finally, the reset painting was put into a new and larger frame with a conservation quality backing and mount, and the back was sealed to prevent dust entering. The conserved painting is now ready to put on display.

Janet Ashdown, Conservator

The finished free-floating mount

Letters to Linnaeus

A new publication from the Linnean Society

What would we write today to a man who changed the face of natural science?

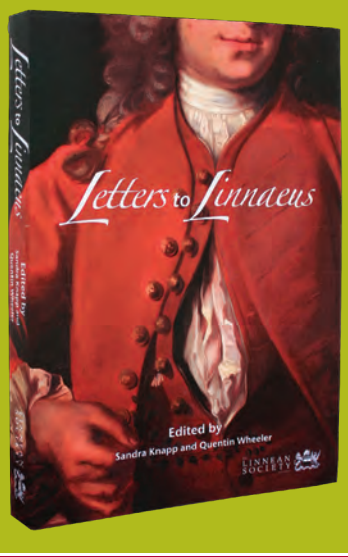
In 1758 Carl Linnaeus published *Systema Naturae*, in which he named all of life as he knew it. Over 250 years his binomial system, beautiful and powerful in its simplicity and adaptability, has enabled universal communication about nature. The letters collected in this book reveal Linnaeus' personal impact, advances and developments in science since his death, the profound impact he has had on generations of naturalists and what we might expect in the next 250 years. Edited by Sandra Knapp and Quentin Wheeler, *Letters to Linnaeus* are written with individualistic humour, passion, and conviction making them a uniquely enjoyable read as well as an introduction to some of the theoretical and practical debates that surround systematic biology today.

Incorporating more than 60 letters, interwoven with several from Linnaeus' own correspondence, *Letters to Linnaeus* includes insights from such varied authors as:

- E.O. Wilson (Pulitzer Prize-winning biologist)
- Richard Fortey (Author of Dry Store Room No. 1)
- Peter Crane (Former Director of Royal Botanic Gardens, Kew)
- Hugh Downs (American broadcaster and former anchor of 20/20)

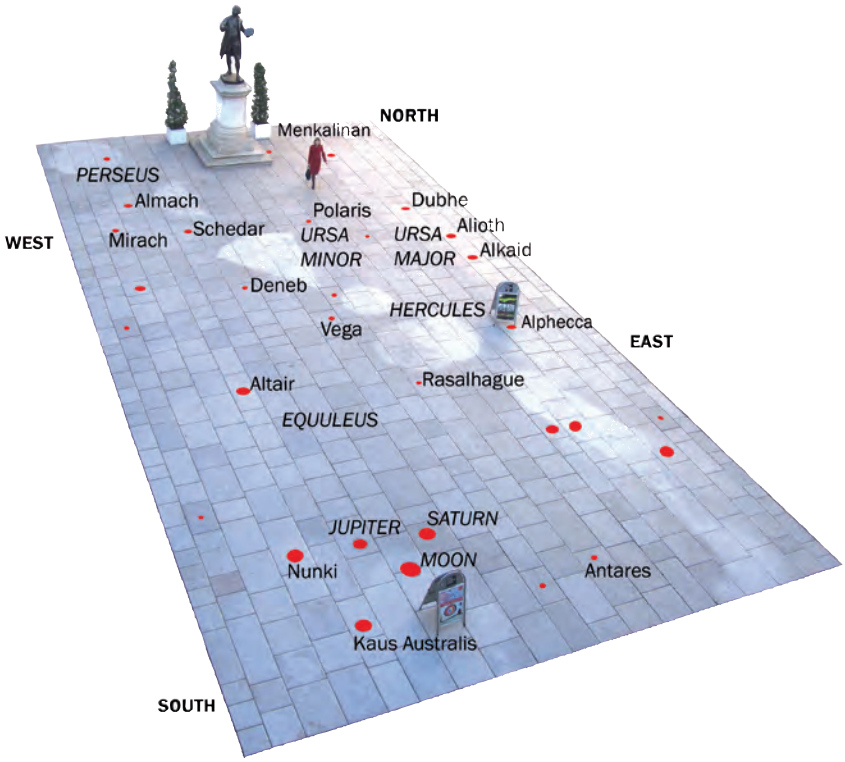
On 3rd March, Dr Sandra Knapp, Botanical Secretary of the Linnean Society of London, will present an overview of the "Letters", and there will be the opportunity to purchase this extraordinary book for the first time at a price of £15.

To order your copy please see our website (www.linnean.org) or email Victoria Smith (victoria@linnean.org) for more details.



Did you know . . . ?

The layout of the fountains and lights in Annenberg Courtyard in Burlington House is not as random as it first appears. When the courtyard was re-designed and restored by the Royal Academy of Arts in 2002, the jets and lights were placed to follow the astronomical pattern of stars and planets over London at the time of Sir Joshua Reynolds' birth on 16 July 1723. Reynolds' statue presides over the courtyard, standing in front of the Royal Academy of which he was part-founder and first President (1768). The star charts for the project were acquired with the assistance of HM Nautical Almanac Office and the Royal Astronomical Society.



Forthcoming Events

3rd March, 6.00pm	Launch of "Letters to Linnaeus" *Sandy Knapp FLS*
19th March, 6.00pm	Darwin's Sacred Cause *James Moore FLS*
16th April, 6.00pm	Biodiversity in a Changing World: The Second Annual Biodiversity Policy Lecture *John Beddington CMG, FRS*
30th April, 6.00pm	The Great Ape Debate *David Chivers, John A. Burton FLS, chaired by The Earl of Cranbrook FLS*

More information about these and all of the Linnean Society's events can be found at www.linnean.org

All articles welcome! Please submit your articles in electronic format to Leonie Berwick at leonie@linnean.org. Images are also welcome in high resolution format with appropriate permission and copyright.

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Charity Reference No. 220509

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