

PULSE

Issue 15
September 2012

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

The recently reported death of iconic 'Lonesome George' in the Galápagos Islands, the last known subspecies of the Pinta island tortoise (*Chelonoidis nigra abingdonii*), brings into sharp focus the dilemma of how species getting close to extinction should be managed, if at all. Lonesome George was first seen by a Hungarian scientist on the island of Pinta in 1972 and with no known individuals from his subspecies in evidence, he became the rarest creature in the world. In an attempt to maintain his line, there were a number of attempts over decades to mate George with closely related subspecies from other Galápagos islands, and while eggs were laid, none proved viable. The decline in giant tortoises in the Galápagos was largely due to their being hunted by sailors and fishermen, which was compounded by the habitat loss suffered when goats were introduced from the mainland.

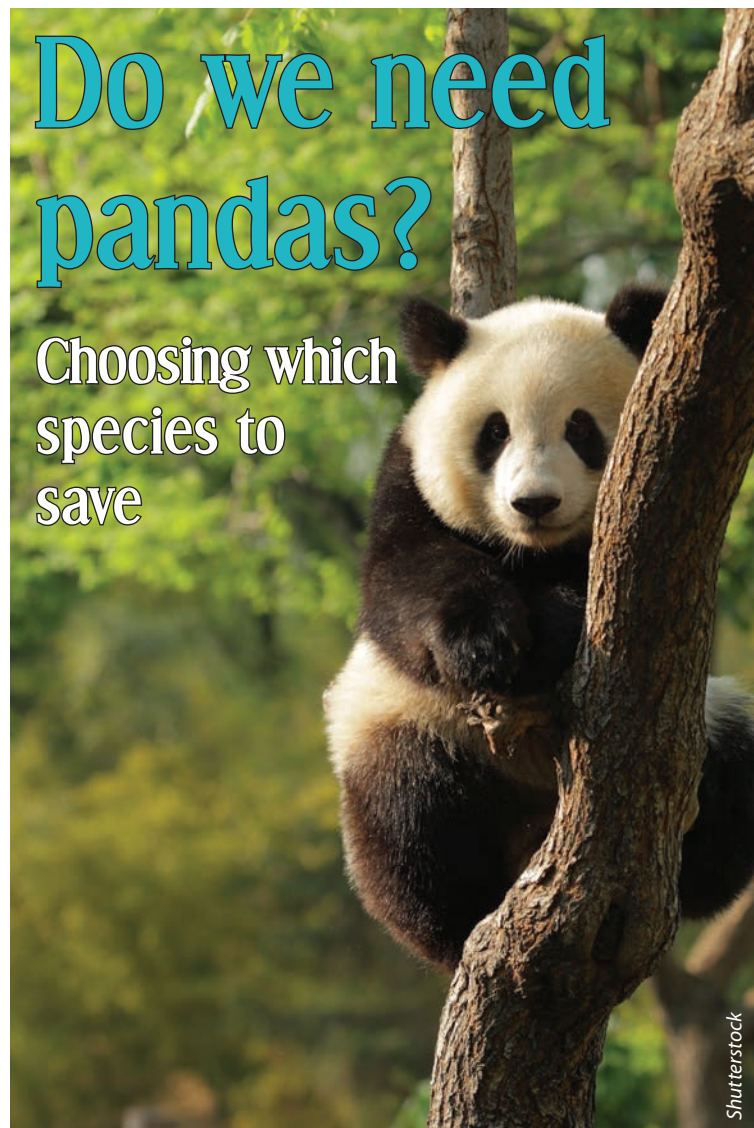
Another species of giant tortoise, *Chelonoidis elephantopus*, which lived on the island of Floreana, was thought to be extinct until evidence was found of hybrids in amongst the native population of *Chelonoidis becki* around Volcano Wolf on Isabela Island. These scientists speculated that through careful cross-breeding, it might be possible to re-create the extinct lineage—although this would take many generations. However, it now appears from subsequent studies on the genetic fingerprint of the hybrids that existing tortoises on Volcano Wolf have a pure-bred *C. elephantopus* as a parent—so negating the need for managed breeding.

Captive breeding programmes can be hugely expensive and resource consuming, as is the case for the giant panda. Perhaps scarce conservation resources are better focused elsewhere, on other species, or targeted to specific habitats rather than organisms *per se*. Now you will have a chance to participate in a live debate on these issues, at a joint event that the Linnean Society is hosting in collaboration with the Society for Biology, at the start of the 'Biology Week' on Monday, 15 October. This evening meeting will take the format of a debate on the motion 'Do we need pandas? Choosing which species to save'. In the Chair, we will have Sue Nelson, the award-winning science journalist and radio/TV broadcaster, recipient of the Association of British Science Writer's Award. The four-member panel will include Simon Watt, an evolutionary biologist and TV presenter, most recently seen on Channel 4's award-

winning natural history series *Inside Natures Giants* and

Do we need pandas?

Choosing which species to save



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Lonesome George, December 2011

© Elizabeth Rollinson

Mark Avery, ex-Conservation Director of the Royal Society for the Protection of Birds (RSPB). The debate promises to be popular and lively. The event is free and open to all but numbers will be limited, so register early to avoid disappointment (www.linnean.org).

Dr Elizabeth Rollinson
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Executive Secretary

biology
week
2012

The
LINNEAN
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of London



Important Message from the Deputy Librarian

You may have heard the good news that the Society will finally get a state-of-the-art lift, which will open up access to the Library and Tower Rooms to all Fellows and visitors.

The installation of the lift will include major structural work and renovation; Burlington House will become a building-site from December 2012 to May 2013, approximately. Access to the whole building will be severely restricted during this time. It is anticipated that the Library will remain closed for much of that period, but we will try and deal with urgent enquiries and requests as far as possible.



Elaine Charwat and Pia Wilson sorting books

© The Linnean Society of London

From now until December we will be boxing and relocating books from areas that will be affected by the lift installation, namely the Library annexe and the current journal holdings. A number of our journals will be moved to make way for storage during the building work; some will go to the East basement of Burlington House. Lesser used journals will be moved permanently off-site. Any journals held off-site can be made available at Burlington House after the completion of the works when ordered two to three days in advance. Particular subjects that may be affected are Expeditions literature and Zoology.

Packing has already begun, so access to some journals and periodicals will now be restricted considerably.

Please email library@linnean.org if you have any questions or concerns.

We do apologise for any inconvenience the works and moves may cause, but we hope you will join us in looking forward to the huge improvements in access that the lift will bring.

Elaine Charwat

Off-site Storage

Our premises at Burlington House, and the Library in particular, have been at capacity for some time. To provide for future growth, the Society is investing in a new property that will allow us to expand both the office space and Library shelving by over a kilometre.

Welcome to our new President



On 24 May 2012 the Society said farewell to our President of three years, Dr Vaughan Southgate, and welcomed our new President, Prof Dianne Edwards CBE PLS. Prof Edwards is a Distinguished Research Professor in the School of Earth and Ocean Sciences at Cardiff University. She researches on one of the most exciting events in Earth history, the invasion of the land by higher plants. Most of her research is focused on Wales and the Welsh Borderland in the UK, which have some of the best assemblages of fossil plants that are preserved in Silurian and Devonian rocks in the world.

She is a Founder Fellow of The Learned Society of Wales, established in 2010 and Vice-President responsible for Science. Prof Edwards was also a Founder Trustee of the National Botanic Garden of Wales. She was elected a Fellow of the Royal Society in 1996, awarded the CBE for Services to Botany in 1999, elected a Fellow of the Royal Society of Edinburgh in 2001 and awarded an Honorary ScD from the University of Dublin in 2005.

To contact Prof Edwards you can email president@linnean.org

Linnean Society of London Medal Winners 2012

We at the Linnean Society would like to offer our congratulations to all of our 2012 medal winners. Recipients were presented with their medals at our Anniversary Meeting in May this year. Congratulations to:

Linnean Medal for Botany: *Professor Stephen Blackmore*

Linnean Medal for Zoology: *Professor Peter Holland*

Darwin-Wallace Medal: *Professor Loren Rieseberg*

H H Bloomer Award: *Ms Libby Houston*

Bicentenary Medal: *Professor Timothy Barraclough*

Irene Manton Prize: *Mr Alexander S. T. Papadopoulos*

John C Marsden Medal:
Dr Joshua Frederick Coulcher

The John C Marsden Medal, created in honour of Dr John Marsden, Executive Secretary of the Society from 1989–2004, was presented for the first time.

Further details on each recipient will be available on our new website in September.



John C. Marsden Medal

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From the Archives

'The public do not know what they've lost'

While sorting some of the Society archives, an enlightening letter from Sir James Clark to Francis Boott concerning the death of Prince Albert, the Prince Consort, came to my attention.

Bagshott Park
26 Dec 1861

My dear Boott,

You can easily imagine my anxious position with the Prince in a highly dangerous fever in Windsor Castle and Lady Clark dangerously ill here and the Queen's agony to soothe; it was a terrible trial, and alas it has ended in one of the greatest calamities that in my belief fell on this country; and one of the greatest bereavements that ever befell a poor woman with a large young family.

Independently of the Queen's and the public loss, you may imagine my own distress after 20 years of intimate and confidential friendship. The public do not know what they have lost, although I am glad they have shown that they underestimated him while alive. [...] It was as you know a case of typhoid fever.

[... Sir William] Jenner who as you know is thoroughly acquainted with the fever was on the constant outlook having never left the Castle after the symptoms became severe[.]

On the Saturday morning the characteristic spots were out and the diarrhoea set in, and in the following Saturday night he expired without a struggle, the lungs being the organ that gave way and caused death. He had too a remarkable feeble circulation and very irritable state of digestive organs especially of the bowels, and was subject to violent attacks of diarrhoea every autumn, attacks that on 2 or 3 occasions alarmed me. In addition to this he had overworked his brain for years so that his nervous system was greatly exhausted[.]

On looking back on the whole progress of the case I have the consolation of feeling satisfied that nothing was omitted that could have been done to ward off the sad termination and we have the additional consolation of the Queen's and Royal Family's perfect satisfaction that everything was done which medicine skill and attention could effect. [...] The Prince did every thing that he was asked to do and there was no blame on his part nor on

ours. The disease did the deed which has deprived us of such a man as England has seldom seen.

*Dear Boott faithfully
Yours Jas Clark*

Francis Boott (1792–1863) was elected a Fellow of the Linnean Society of London in 1819. He was born in Boston, USA but came to England as a youth and was soon acquainted with Joseph Banks, W.J. Hooker, J.E. Smith and other eminent scientific figures. He practised medicine in London from 1820, wearing unusually flamboyant clothes for a physician. He is one of only three Fellows to have been both Secretary (1832–40) and Treasurer (1856–61) of the Society.

Sir James Clark (1788–1870) was a colourful character. He entered the medical service of the Navy, but was shipwrecked twice. When living in Rome he looked after the poet Keats during the last months before his

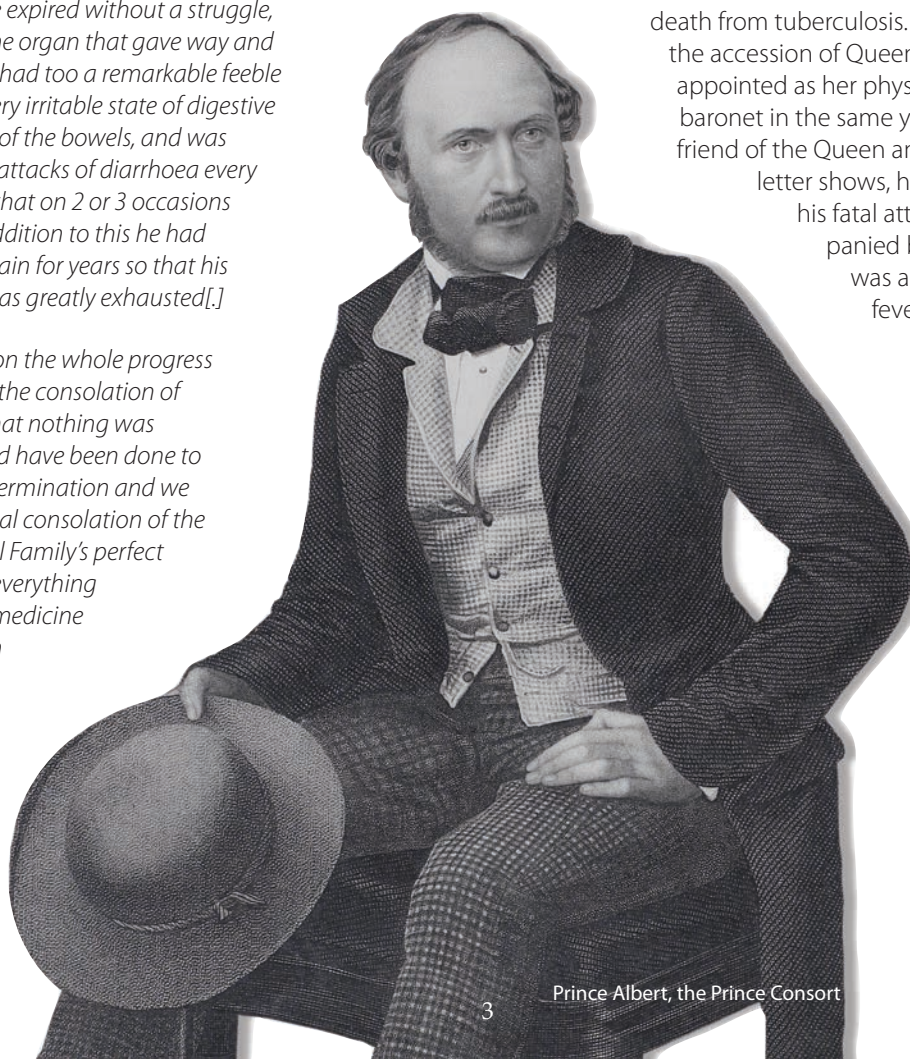
death from tuberculosis. On the accession of Queen Victoria in 1837 he was appointed as her physician and was created baronet in the same year, becoming a valued friend of the Queen and Prince Albert. As the letter shows, he attended Albert during his fatal attack of typhoid, accompanied by Sir William Jenner who was an authority on typhoid fever.

Prince Albert died on 14 December 1861, but the Queen blamed neither doctor. It has recently been suggested, on strong evidence, that Albert did not die of typhoid but of Crohn's disease, which involves chronic inflammation of the intestine. Albert had become an Honorary Member of the Society in 1840, the year he married Victoria.

Alan Brafield FLS



Francis Boott



Prince Albert, the Prince Consort

A CALL TO FELLOWS: John Baxter Langley



The gates of Hyde Park are torn down

mentioned primarily in footnotes, in passing, or not at all. Yet he was a remarkable man who attempted, and often achieved, remarkable things. Here follows three of his contributions.

1) In 1866 the hugely popular Electoral Reform Act, by which middle, and even some working class Victorian men, would be granted the vote, was successfully filibustered by the Tory opposition. The Bill's failure led to the fall of the Liberal government and its replacement by the very men that had scuttled the popular measure. Determined to keep the franchise a privilege of the wealthy the new administration reacted to a proposed protest demonstration with the banning of all meetings in Hyde Park, the swearing in of special constables and the warning to protestors that 'a full battalion of Foot Guards were ready with fixed bayonets and loaded rifles' (*Daily News*, London, England, July 25, 1866). Despite this, in July 1866 an estimated 150,000 men and women gathered in London to march to Hyde Park and demand an extension of the franchise. There they found lines of foot and mounted police blocking their path and the park gates chained shut. Attempts by the leaders of the demonstration to

*I see thee in each lovely face,
Each wreathed cloud,
each flower of spring:
What'er is beautiful bespeaks thy grace,
Which was the sum of every living thing.*

*A Literary Sandwich Being a Collection
of Miscellaneous Writings – J. Baxter
Langley (London, 1855)*

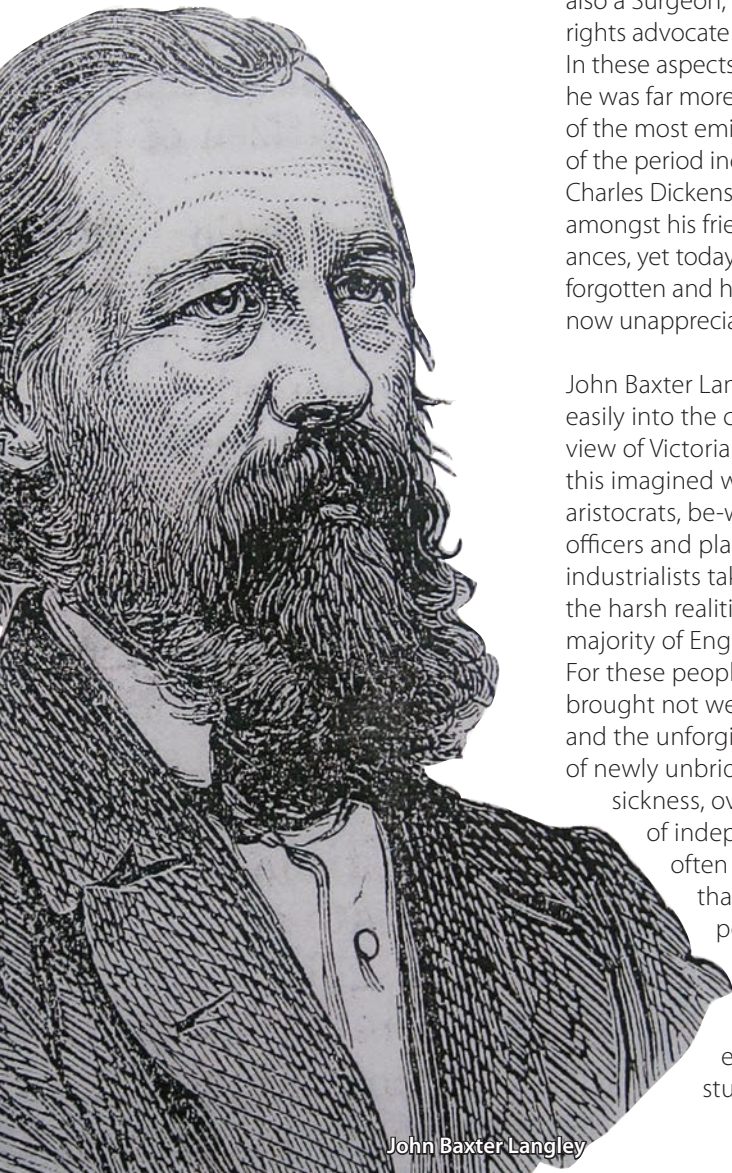
These lines, mourning a deceased lover, were written by the Victorian poet and Fellow of the Linnean Society of London, John Baxter Langley. Langley's literary works took a variety of forms; poetry, plays, novels and even political satire, but popular recognition eluded him. However, Langley was also a Surgeon, a Trade Unionist, human rights advocate and political activist. In these aspects of his varied career he was far more successful. Some of the most eminent personalities of the period including Karl Marx, Charles Dickens and T.H. Huxley were amongst his friends and acquaintances, yet today Langley has been forgotten and his contributions are now unappreciated.

John Baxter Langley does not fit easily into the current, romanticised view of Victorian England. In this imagined world top-hatted aristocrats, be-whiskered cavalry officers and plain speaking Northern industrialists take precedence over the harsh realities of life faced by the majority of English men and women. For these people Industrialisation brought not wealth but poverty and the unforgiving environment of newly unbridled capitalism brought sickness, overcrowding and a loss of independence. It is in this too often unrecorded environment that Langley, a life-long political agitator and activist, law-breaker and provocateur made his mark. As a result he has, even amongst academic studies of the period, been

A contemporary picture of the accident at Kirtlebridge



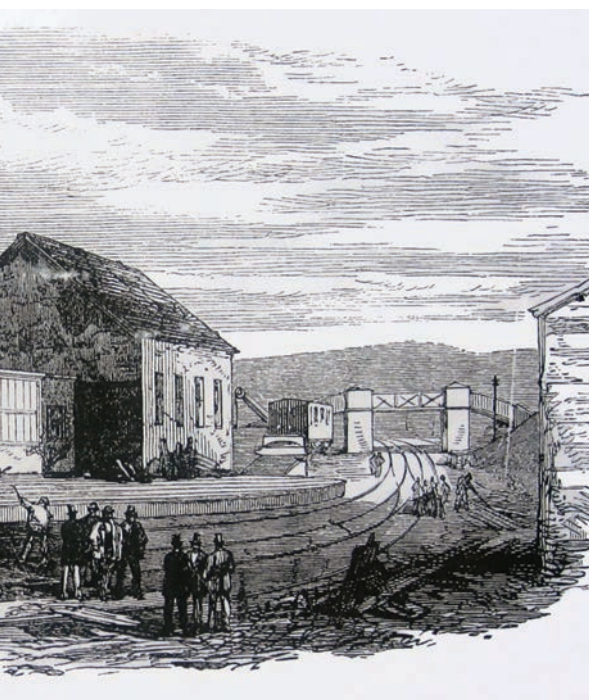
negotiate entrance were met by police violence and for a moment it appeared that the right to demonstrate, like the right to vote, had been defeated. Some of the demonstrators noticed that whilst the main entrances had been secured, railings nearby had been left unguarded and were in some places quite flimsy. Langley was amongst these men and women and, once the railings around Marble Arch had been torn down, led the crowd as



John Baxter Langley

they triumphantly entered the park. Such was the crowd's determination that they successfully resisted furious attempts by mounted police to evict them from the area. The events proved a public relations disaster for the government; Spencer Walpole, the Home Secretary, was forced to resign and a second reform bill was soon passed. Furthermore the right of public assembly was established beyond the whim of individual governments to extinguish.

2) Steam trains are nowadays looked on with a nostalgic appreciation. The privately run lines, whilst garnering huge profits for shareholders, were run with oppressive military discipline for those actually employed. Hours worked were unregulated and a single shift could easily run to 19 hours without a break. With such a workload both drivers and points operators often made mistakes and accidents were frequent and often fatal. Companies simply attributed all accidents to human error and avoided culpability. Despite legislation which allowed employers to work together yet condemned any attempt at unionisation as an 'illegal combination', 1871 saw the formation of the *Amalgamated Society of Railway*



Servants. Unlike earlier organisations the A.S.R.S. attempted to represent all levels of railway employees and made no distinction as to which company was their employer. John Baxter Langley, although not a railwayman was elected as the first General Secretary.

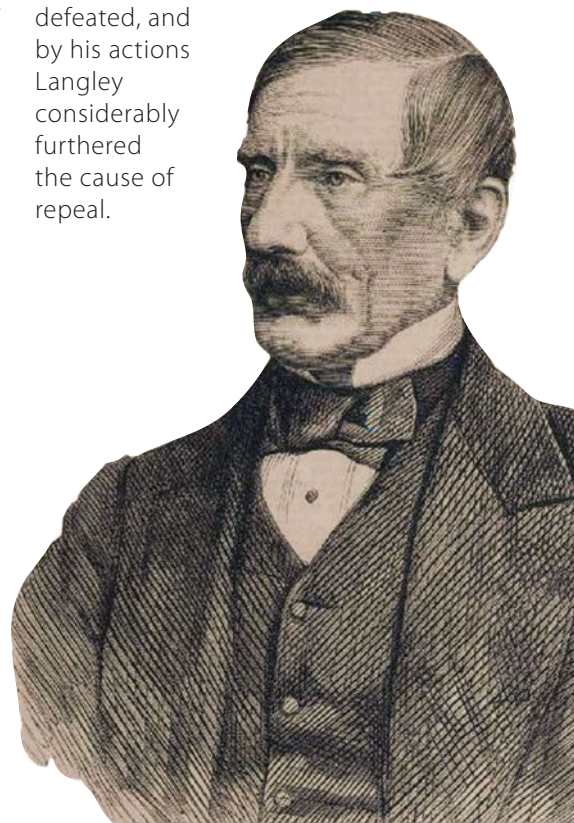
Rather than agitate for increased wages, Langley encouraged the men to challenge the railway companies'

policy of passing responsibility for accidents onto employees. In the case of the Kirtlebridge Station disaster: in October 1872 an express had run into a stationary goods train killing some 12 passengers. The *Caledonian Railway Company* stated the entire accident had been the fault of the station-master who was then charged with Culpable Homocide. It failed to mention that the man had frequently been on duty for 17 hours and was expected to also work as a railway porter. For the first time the investigation was attended by defence solicitors, hired by the union, who pointed out the unsafe work practices the company employed. As a result, and much to the company's surprise, the man was found not guilty and blame attributed to 'understaffing and insufficient safety equipment'. This decision, which laid the path for modern health and safety legislation, was a major victory not only for railway employees but for English working people as a whole.¹

3) The British involvement in the Crimean Conflict between Turkey and Russia was hampered not only by the loss of the famed Light Brigade but by the endemic presence of syphilis and gonorrhoea amongst the troops. In some cases as many as a third of new arrivals were immediately invalided due to venereal disease. As a result, in 1864 the Contagious Diseases Acts were brought into law. This legislation placed blame for the infection not on the soldiers themselves but firmly on the women from whom they had caught the infection. Such women were, it was assumed, prostitutes, and any woman in the vicinity of a military base was immediately suspected of prostitution. Any 'suspicious' behaviour, e.g. speaking to a male member of the public or being out of doors after dark, could lead to an arrest, being taken before a magistrate and forced to undergo an internal examination.

If found to have venereal disease they could then be forcibly imprisoned in a 'Lock hospital'. Many felt such a law was an attempt to curtail the basic freedoms of Victorian women but also served to ensure prostitutes could be visited without fear of infection. Opponents organised and sought to undermine the Acts by questioning

prospective members of parliament. If they refused to condemn the Acts they then ran a rival candidate. The first and most successful campaign was in Colchester where John Baxter Langley ran against the Liberal Sir Henry Storks. Langley was attacked, vilified by the press and chased through the streets of Colchester by angry brothel keepers. But Storks was defeated, and by his actions Langley considerably furthered the cause of repeal.



Sir Henry Storks

In the two years I have been researching the life and campaigns of John Baxter Langley I have discovered very little in regard to his Fellowship of the Society. Langley was a trained surgeon but as far as I know not practicing so his admittance is curious. The documents detailing his entry have, inexplicably, gone missing. He was later expelled but the reasons for this are likewise unknown. Perhaps it was because by this time he was in prison; perhaps there was another reason. As supporters of the Society I am therefore asking for your help in solving this mystery. If anyone has any information in regards to his Fellowship, contributions or expulsion please contact me and by this means an influential but largely neglected man can perhaps become slightly less forgotten.

Dave George
davemgeorge@yahoo.com.au

¹ *Hampshire Telegraph and Sussex Chronicle* etc, October 5, 1872; L.T.C. Rolt, *Red For Danger*, (3rd edition), Newton Abbot, 1976, pp. 63-4.

Linnaea borealis is rare in Britain; even in its favoured Caledonian pine woods in the North East of Scotland, it is described as "very local". I had seen it years ago while camping in Scandinavia, but first encountered it in the British Isles on a visit to Curr Wood near Grantown on Spey in June 2002, having been invited by the wood's owner, Professor Henry Beker, to consider illustrating the plant for him.



Vertical section through ovary

Curr Wood was originally planted with pines in the late 1700s, largely felled in ca.1880, and allowed to regenerate naturally. It is home to Capercaillie, Pine Marten, Red Squirrel, Pine Hoverfly and many fungi (it is the only known UK habitat for some species). When the wood was threatened with clear-felling in the late 1990s it was purchased by Professor Beker (albeit with a quantity of standing timber already sold). It was then that he discovered he had also acquired what is probably the largest population of *L. borealis* (the county flower for Inverness-shire) in Scotland.



Top: Pale veins; Middle: Darker veins; Bottom: Strong staining

In addition to his distinguished career as a mathematician, Professor Beker is extremely interested in woodlands and their protection, as well as being a respected mycologist, specialising in *Hebeloma*. I first met him whilst teaching botanical illustration with my husband (Dr D.H. "Kery" Dalby FLS) at Kindrogan Field Centre.

Linnaea is found in several colonies in Curr Wood and a number of visits were made to see and draw it *in situ*. However, I was also permitted to make modest collections of living material to work from in the studio, and began a large number of studies, some of which are shown here, in order to become thoroughly acquainted with this wonderfully characterful plant.

This phase of exploration, with pencil and microscope, is always, for me, the most exciting and rewarding part of a botanical illustration; it is this investigation that allows me to make my own discoveries of structures and colours. *Linnaea* certainly lived up to—and exceeded—expectations in this respect, being well-furnished with ornamental details. My only regret is the inability to portray the flowers' surprisingly powerful, sweet scent.

The corolla (bilaterally symmetrical if studied extremely carefully), though a uniform pale pink on the outside, is decorated inside with a range of embellishments, from a delicate vein pattern to a strong deep pink staining merging to yellow as you approach the centre. Now to examine the hairs—small and colourless inside the corolla, silky ones on the ovary, long straight ones on the

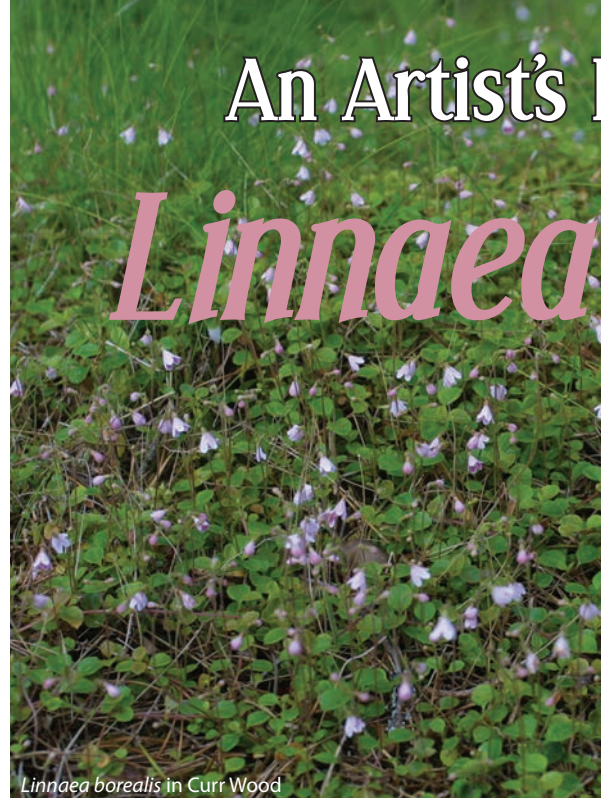


edges of the sepals, with even more striking "eyelashes" fringing the bracteoles. Most impressive are the glandular hairs, which are mostly concentrated on the bracteoles; they begin as a crowded mass of glistening greeny-gold globules, but change (as the expanding ovary turns a muted magenta and the bracteoles grow to accommodate it) to well-spaced colourless blobs with dark centres, rather like frogspawn on stalks. Strangely, although I saw many plants with developing ovaries, mature fruits proved

to be very rare indeed. In addition, a small number of exceptionally exuberant plants actually bore stems with four flowers.

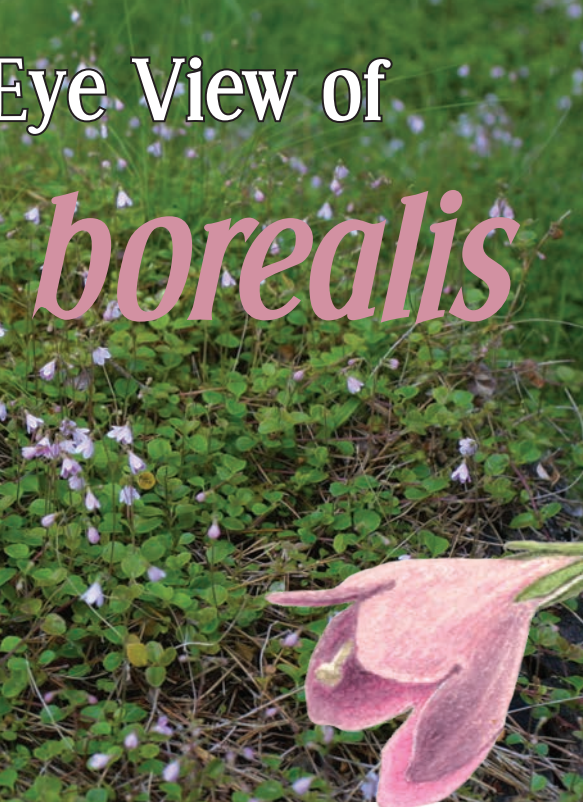


Bracts and pedicels



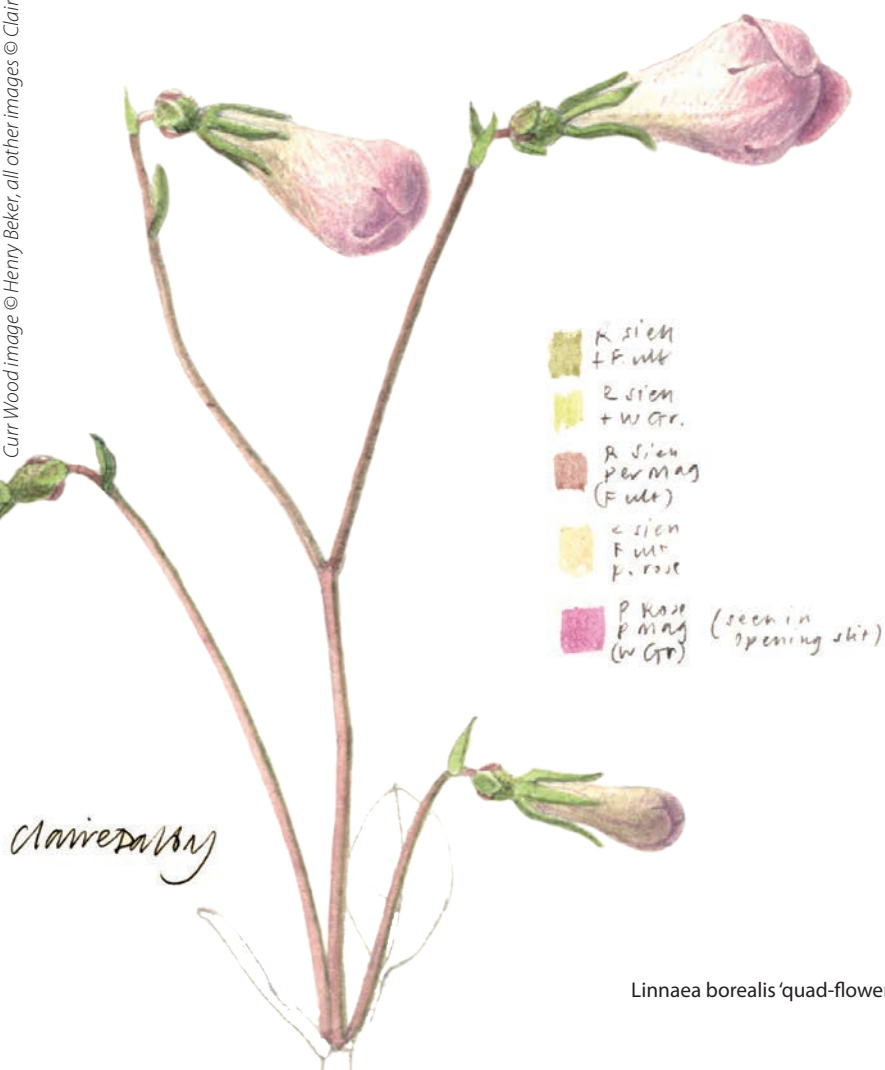
Linnaea borealis in Curr Wood

An Artist's *Linnaea*



Eye View of *borealis*

Curr Wood image © Henry Beker, all other images © Claire Dalby



Linnaea borealis 'quad-flower'

For the finished illustration I decided to show the creeping habit life size, and superimposed an enlarged (x3) portion for a little more detail plus an element of visual impact. Other enlargements and dissections were placed, in the traditional manner, at the bottom.

When Professor Beker decided to share his picture with his friends, I oversaw the production of a limited edition of giclée prints (75 per cent of the original size). He presented the first of these to the Linnean

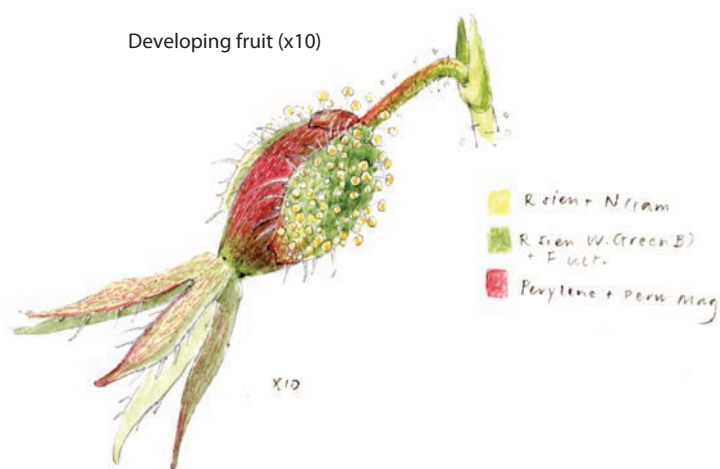
The specimens are well-established and have colonised a second raised tray, as well as some of the surrounding area; they need little maintenance, barring occasional watering or removing large growths of moss after excessive rainfall.

Claire Dalby RWS RE is a freelance water-colour artist (landscapes and still lifes as well as plants), printmaker and illustrator. She designed the Linnean Society's Bicentenary logo, letterhead and rubber stamp, has inscribed names on Society certificates since 1985 and in 1994 was awarded the Jill Smythies Prize for her lichen wallcharts and other published scientific illustrations. Her botanical cards are usually available from the Society.

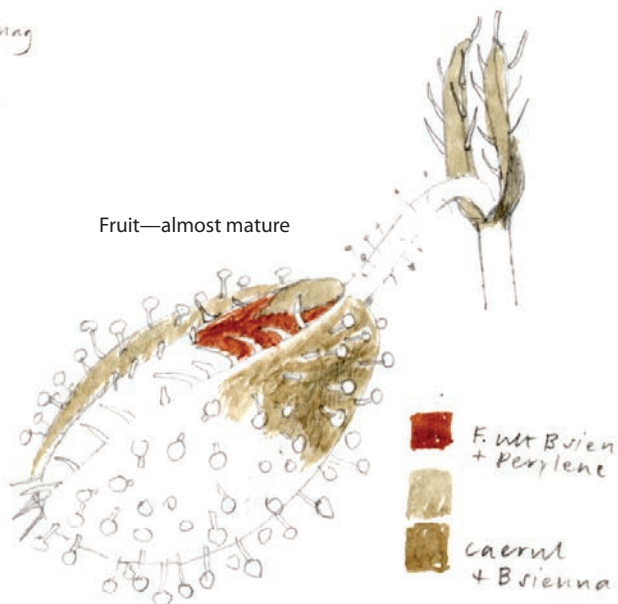
Claire Dalby RWS RE

Professor Beker no longer owns Curr Wood.

Developing fruit (x10)



Fruit—almost mature



Society (which now hangs in the Library) and this image in turn was chosen, to my surprise, to appear on the Society's 2011–12 Membership card.

The specimens used for the basis of my study are still flourishing by the north wall of our Perthshire glasshouse; after taking root in an ordinary plastic seed tray, the specimens were then moved outside and raised on bricks in an attempt to mimic the conditions of a particular *Linnaea*-festooned pine stump in Curr Wood.

A Glimpse of the Field Trip to North Norfolk

During the expedition to the North Norfolk coast, despite it being one of the coldest and wettest Junes on record, we managed to escape any real dousing and the sun even shone at times! The RSPB Bird Reserve at Titchwell Marsh, where we walked down to the sandy beach past reed beds and shallow lagoons, was teeming with species. Although the bittern didn't boom, a marsh harrier cruised over the reeds and we were delighted to spot a Chinese water deer.

'Mr Bean's' boat took us to Blakeney Point, a three-mile-long dynamic sand and vegetated shingle spit, creating an ever-changing scene as the storm clouds rolled around in the distance. Led by Terry Preston and John Pearson of University College London (UCL), we visited the former lifeboat station and UCH field centre facilities, before re-embarking to view the teeming ternary and basking seals.



© Elizabeth Rollinson

At West Runton, Adrian Lister of the Natural History Museum, London (NHM) gave us a guided walk along the beach/cliff in search of fossils—we didn't find another woolly mammoth (as was discovered there in 1990) but fun was had by all, and we were all so engrossed that the original plan to visit the Cromer museum was abandoned and we enjoyed the moment instead.

Elizabeth Rollinson
elizabeth@linnean.org
Executive Secretary

The Linnean Society Journals: A Global Phenomenon

Did you know that the three Linnean Society Journals (Biological, Zoological and Botanical) are available in almost 9,000 institutions globally? The journals are freely available via philanthropic deals to the world's poorest nations through the AGORA, OARE, INASP and PERI programmes. Articles from the journals were downloaded from 100,000 to 230,000 times in 2011, while the impact factors continue to rise year-on-year, as do rankings within their respective sectors. The most read articles in 2011 were those, respectively, on the grey short-tailed opossum in Brazil, the phylogeny of modern birds, and Angiosperm phylogeny. The special issue *Science and development of government policy post-Global Strategy for Plant Conservation: lessons for the future*, was downloaded more than 2,400 times in 2011.

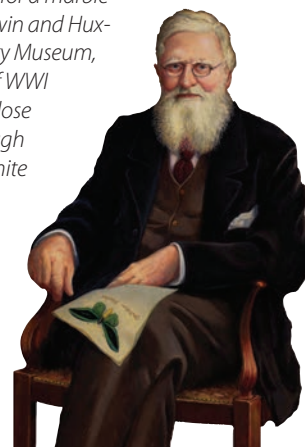
More information about these and all of the Linnean Society's events can be found at www.linnean.org or contact Samantha Murphy on +44 (0)20 7434 4479 ext. 11, email: samantha@linnean.org

A Bronze Statue of Wallace: A lasting legacy of 2013

With 2013 being the 100th anniversary of the death of Victorian naturalist Alfred Russel Wallace, there are many events lined up to celebrate the work of this renowned scientist. A campaign to raise funds for a bronze statue of Wallace, whose joint paper with Charles Darwin on the theory of evolution was read at the Linnean Society, has just been launched by the Wallace Memorial Fund. The Fund is determined to raise the £50,000 needed for the project in order to commemorate Wallace's life and place in scientific history.

Background from the Wallace Fund's website:

[T]he 'original' Wallace Memorial Fund, which was set up by eminent biologists soon after Wallace's death in 1913 aimed to raise money for a marble statue to match those of Darwin and Huxley in the NHM [Natural History Museum, London]. However, the start of WWI meant that the Fund had to close early and there was only enough money to pay for a circular white marble medallion featuring a side profile of Wallace's head and shoulders[.]



© The Linnean Society of London

The Fund has already managed to raise £10,000 towards the project. Please visit <http://wallacefund.info/> statue to find out how you can contribute.

Forthcoming Events 2012

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| 20 September 2012, Day meeting : 10.00–17.30, followed by evening meeting | Meeting on Online Taxonomy
Organised by Malcolm Scoble and Paul Wilkin
Registration required (www.linnean.org), £20 fee |
| 27 September 2012, 18.00 | The Remarkable Nature of Edward Lear
Robert McCracken Peck |
| 8 October 2012, 18.00 | The virus, the cancer and our response
Darwin Lecture 2012—A joint meeting between the Linnean Society and the RSM
Professor Sir Leszek Borysiewicz |
| 15 October 2012, 18.00 | Do we need pandas? Choosing which species to save
A joint meeting between the Linnean Society and the Society of Biology
Registration required (www.linnean.org) |
| 17 October 2012, 18.00 | Why did Darwin Change his Mind about Sex Ratio?
Professor Elliott Sober |
| 18 October 2012, 18.00 | F. W. Frohawk (1861–1946), zoological artist and butterfly specialist: A window on the world of Victorian and Edwardian Natural History
June Chatfield |
| 23 October 2012, Day meeting: 10.00–17.00 | Indian Ornithology, British Botany and Allan Octavian Hume (1829–1912)
Organised by Robert Prys-Jones, Honor Gay and Roy Vickery |
| 15 November 2012, 18.00 | Linnean Society Debate
Organised by Andrew Sheppy |
| 3 December 2012, 18.00 | Thomas Bewick, Engraver and Naturalist
Jenny Uglow |



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