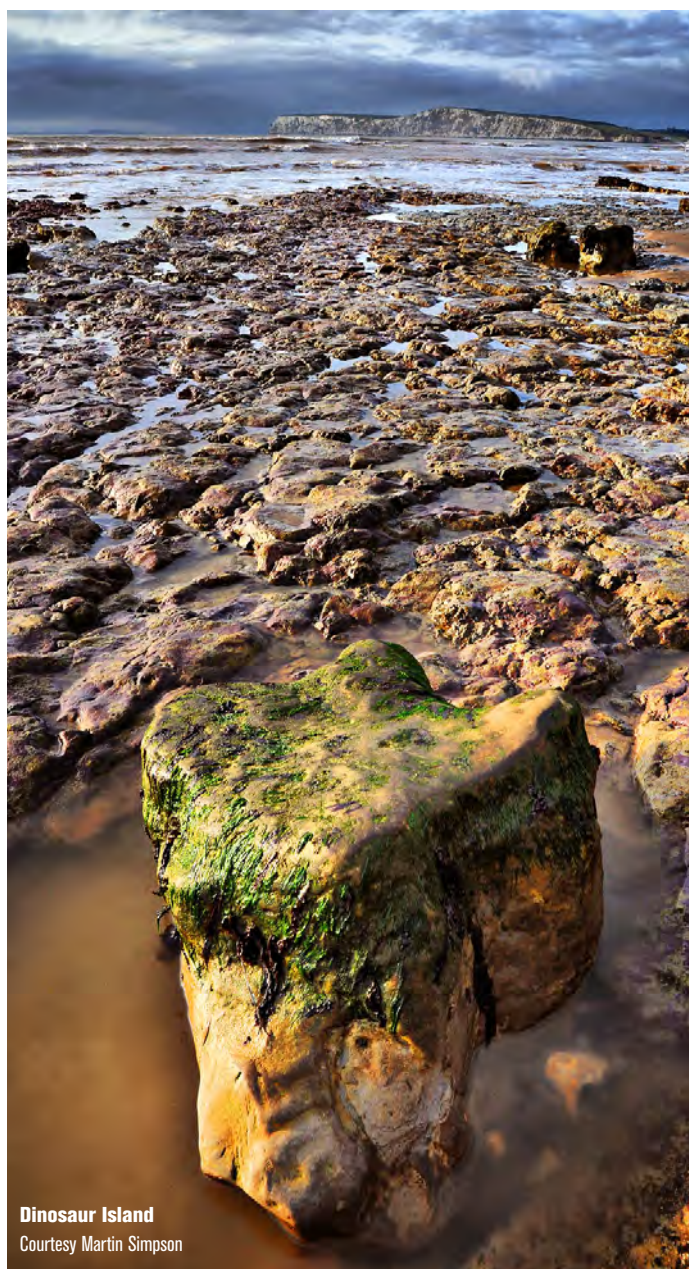


Dinosaur ISLAND

Just off the south coast of the UK rests the Isle of Wight, a small island of vital importance to the field of palaeontology. Even from a global perspective, some of the richest fossil-bearing rocks of the Early Cretaceous period (146Ma–100Ma) are found here. The island is part of the Wealden Supergroup, an area of strata in the south of England composed of alternating sand and clay deposits. Rocks of 'Wealden' age are exposed along the south coast of the Isle of Wight, mostly in the rapidly-eroding cliffs (at the rate of about 1m per year), and here are found the fossils of dinosaurs and plants from over 100 million years ago. Given the comparatively limited amount of rock exposure (only about 15km along beaches) on the Isle of Wight, incredibly this *Dinosaur Island* boasts more named species of dinosaur than many other places around the world. These fossils and what they can tell us about prehistoric species and environments are of undeniable global importance—there are actually relatively few places on Earth where rocks documenting this particular slice of time, the Early Cretaceous, can be found. This part of the geological record (the Early Cretaceous towards the end of the 'age-of-dinosaurs') seems to have been an important time in dinosaur evolution, yet it remains little understood when compared, for example, to the later stages of the Cretaceous.

Dinosaur Island is distinct in its capacity as a concentrated source of many fossils from an important age in the Mesozoic era (252Ma–66



Dinosaur Island
Courtesy Martin Simpson

Ma), and is one of the best places in Europe to collect the remains of dinosaurs. The University of Southampton actively promotes the geological and palaeontological importance of the Isle of Wight, both locally and globally. However, even in the Southampton area many people are not aware of this considerable fossil resource—a resource with the potential to tell us so much about evolution and climate change.

The Biological Journal of the Linnean Society has produced a special issue dedicated to this *Dinosaur Island*. Based on papers from an international conference held at Southampton's National Oceanography Centre in October 2013, the issue looks closely at the Isle of Wight and areas of similar age, like those in western China where more recent discoveries of feathered dinosaur species, early mammals and early angiosperms have been found. The papers synthesize the study of both the geological and palaeontological aspects of the island, including papers on the world famous dinosaur footprints found there, from species like *Iguanodon* and *Neovenator*. Papers also include descriptions of new fish, mammals and crocodiles found on the Isle of Wight, and give insight into this critically undersampled section of the geological past.

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Access abstracts for the *Dinosaur Island* Special Issue: <http://onlinelibrary.wiley.com/doi/10.1111/bij.2014.113.issue-3/issuetoc>

Watch the *Dinosaur Island* video:
<https://www.youtube.com/watch?v=Wtx9eIEJIUM&feature=youtu.be>



Merry Christmas and a Happy New Year to all our Fellows

from everyone at the Linnean Society of London

The Society will be closed over the Christmas period (25 Dec–1 Jan) but we look forward to seeing you in 2015!



© Leonie Berwick

Systematics Research Fund 2014–15 Apply Now

The 2014–2015 application round for the Systematics Research Fund (SRF) is now open. Providing grants for small-scale research projects in the field of systematics, the SRF was set up by the Linnean Society of London and the Systematics Association, and typically supports fieldwork expenditure, the purchase of scientific equipment or expertise, specimen preparation (including the cost of temporary technical assistance) and publication costs. Projects of a more general or educational nature may also be considered, provided that they include a strong systematic component. Successful projects are selected by a panel of systematists who represent a wide range of conceptual interests and taxonomic groups. The main applicant must be a current member of the Linnean Society of London or the Systematics Association to be eligible for funding. (Please note that projects already substantially funded by other bodies may be disadvantaged.)

Deadline for applications: Friday 16 January 2015.

For more information or to apply visit:
<http://www.systass.org/awards/srf.shtml>

Chemical Reaction Iron Gall Ink Corrosion

Here at the Linnean Society of London, the Conservation team works with a plethora of objects that may need care. Sometimes, the type of damage, as well as the object itself, can have an interesting history. One type that we occasionally encounter is iron gall ink [IGI] damage. IGI was the ink of choice from the Middle Ages until the development of synthetic dyes in the early 20th century. Popular due to its ease of manufacture (inexpensive and readily available ingredients), IGI could be also be created at home using the same ingredients, though the manufactured variety is likely to have been of a higher quality. It could even be dried for re-hydration and use whilst travelling, and was perfect for important documents due to its indelibility.

However, a side effect of IGI is corrosion. An autocatalytic chemical reaction, acid hydrolysis and iron catalysed oxidation eventually causing the breakdown of cellulose in the paper. Identifiers include colour change and opacity, discolouration near the ink itself and cracks and losses in the paper. Ink corrosion has many factors affecting it, including components of the ink itself, the paper's thickness and size, and the document's environmental surroundings.

Mechanical damage is, for a Conservator, the most disturbing to come across and is shown here. The paper has been saturated with ink and is very brittle; cracks form, interconnect and are exacerbated through handling. Even within the Society's own collections there is evidence of historical ink corrosion, however our collections store and archives room provide excellent environmental conditions. Recent digitisation and conservation projects are now enabling us to monitor the most damaged documents and minimise further damage.

Though ink corrosion can pose a threat to cultural heritage, in reality some of the oldest collections aren't necessarily those most damaged. Collections managers conduct risk assessments and identify possible damage, a prerequisite for projects and surveys, which can further stimulate support and funding for future research and treatments. For example, did Linnaeus use home-made ink? Did our founder, Sir James Edward Smith, use bought or home-made ink in his Grand Tour diary?

For further information about iron gall ink visit The Iron Gall Ink website:
http://irongallink.org/igi_index.html



ABOVE **Clumsy Linnaeus?**
An ink spill has corroded
part of this manuscript
© Helen Cowdy

Helen Cowdy
Project Conservator
helen@linnean.org



LEFT Dawn Saunders
FLS

BELOW Dawn and
Michael Holland FLS
list the necessary tools

Darwin Inspired Learning **Murderous Plants**

On 3 September, Dr Dawn Sanders FLS, Associate Professor at University of Gothenburg Sweden, and Michael Holland FLS, Head of Education at Chelsea Physic Garden, joined Mair Shepherd of the Education team to film a carnivorous plant dissection. The resulting video will form part of the Linnean Society of London's new A-level teaching resources (16–18), which are being produced in conjunction with the Charles Darwin Trust (CDT).

The CDT was founded by members of the Darwin family in 1999. Its aim is to show how Charles Darwin's own scientific investigations relate to modern science, and to ensure that his work and methods are available to inspire future generations of biologists—*Darwin Inspired Learning*. The three modules will look at how Darwin reached his conclusions, looking closely at three organisms Darwin himself studied in detail—pigeons, carnivorous plants and barnacles. The overall idea is for students to access his theories through both simple and more complex investigations.

The CDT's previous education materials have focused on pre-A-level age groups; the project between the Society and the CDT will see the first full A-level modules produced by both organisations. Experts from the CDT have outlined the modules and supplied the content, while the Society's team is editing the content, devising the overall layout and cutting together video footage to coincide with each topic.

Each of the three modules has been designed to help teachers engage their students with Darwin's scientific method, both inside and outside the classroom. They are directly linked to the current AS and A2 biology curricula, but have worldwide relevance to science education. Named *Funky Pigeons*, *Murderous Plants* and *Brilliant Barnacles*, the modules provide teachers with resources to teach major biological themes such as variation and adaptation, selection, genetics, classification and phylogeny. The materials also embrace how Darwin brought together data recorded from the living laboratory of his home and garden at Down House in Kent, and his observations on the voyage of the *HMS Beagle*.

Each module is accompanied by a video interview with a contemporary scientist who has expertise in the requisite field, and who also has had the chance to work with Darwin's own specimens. Not only does this bring Darwin into the present, it also gives students a more personal insight into how scientists work today.

Dawn Sanders, Fellow of the Linnean Society since 1998 and a



member of the CDT's education team since 2007, wrote the module *Murderous Plants*, which focuses on adaptation and competition in carnivorous plant species. The accompanying video, showing the dissection of a pitcher plant (of the genus *Sarracenia*) and the contents inside its digestive chamber, will allow students to see inside the organism and understand the process of carnivory in plants. Michael Holland kindly supplied the pitcher plants for dissection and joined Dawn onscreen in an informal interview about why these species have evolved to supplement their diets with insects. *Murderous Plants* also uses carnivorous plants and their habitats as a stepping-stone for exploring broader ecological concepts, in particular predation and the structure of an ecosystem.

This module was inspired by Darwin's passion for and work on the genus he described as 'My beloved *Drosera*'. Fascinated by plant nutrition in this carnivorous genus, his experiments led to the publication of *Insectivorous Plants* in 1875. He was particularly interested in why a plant might exhibit seemingly animal-like behaviours, and at one point was said to exclaim: 'By Jove I sometimes think *Drosera* is a disguised animal!'

The first module *Funky Pigeons* was launched in July, *Murderous Plants* will be launched by the end of 2014 and our final Darwin Inspired module, *Brilliant Barnacles*, will be available in early 2015.

To find out more visit www.linnean.org/darwininspired



ABOVE Removing
the contents of the
digestive chamber



A Carbon Copy?

A note on the term “tropical rainforest”

Tropical rainforests are the most structurally complex and diverse terrestrial ecosystems that have ever existed on Earth. They form the primary gene pool for flowering plants (angiosperms) (Morley 2000), and, globally, the highest plant diversity is found in the remarkable tropical rainforests of South America (Jaramillo *et al.* 2006). They are dynamic ecosystems that are thought to have modified their biogeographic ranges in response to the warming and cooling of the Earth’s climate (Morley 2000), with South American tropical plant diversity showing a sensitivity to global temperature changes on geological time scales (Jaramillo *et al.* 2006).

Tropical rainforests as we know them today, irrespective of their geographic location, are defined using climatic and botanical criteria (Richards 1996; Morley 2000). They grow at less than 700m above sea level in a climate characterised by at least 1,800mm of annual rainfall; for nine months of the year the monthly level of rainfall is over 100mm (Burnham and Johnson 2004). Regions supporting rainforest growth in the tropics have a mean annual temperature greater than 18°C, with a range of less than 7°C (Burnham and Johnson 2004). Almost all tropical rainforests are frost-free, and a cold month mean of 18°C is a widely used defining climatic criterion (Wolfe 1979; Morley 2000). Plants with entire-margined, large mesophyllous leaves of greater than 42 sq.cm in size are characteristic of tropical rainforests, and drip tips, ridding the plants of excess rainwater, are present in 25–70% of plant species (Burnham and Johnson 2004). Existing tropical rainforests are dominated by angiosperms, with more than 80% of species of over 10cm in diameter belonging to either dicotyledonous angiosperm families or the monocotyledonous palm family Arecaceae (Burnham and Johnson 2004). Plant diversity is high in tropical rainforests—there are typically more than 40 tree species per hectare (Wright 2002).

Such climatic and botanical characteristics can be difficult to measure in the fossil record and consequently the origin

of tropical rainforests is poorly understood. However, fossil pollen grains have been used to estimate tropical plant diversity through geological time (Jaramillo *et al.* 2006). Assemblages of fossil leaves have shown that tropical vegetation with climatic, taxonomic and leaf physiognomic characteristics comparable to present-day tropical rainforests were growing in northern Columbia 58 million years ago (Ma) (Wing *et al.* 2009). Tropical rainforests are an iconic component of the Earth’s current plant life; the tropics have historically supported the growth of some remarkable vegetation types.

Among the most distinctive and well studied of these ancient ecosystems are the Carboniferous Coal Forests, which flourished during the Pennsylvanian Subperiod from 323–299 Ma (e.g. DiMichele *et al.* 2001). These forests were composed of tree-like arborescent lycopsids and, depending on the flooding regime, an understory of tree ferns, seed-ferns and horsetails (DiMichele and Phillips 1994). They have been described as “tropical rainforests” in the literature (e.g. Falcon-Lang 2004) and the suggestion that Pennsylvanian Coal Forests are an ancient equivalent to extant tropical rainforests seems reasonable considering the “climatic and structural characteristics typical of tropical rainforest are probably as old as the Palaeozoic” (541–252 Ma) (Burnham and Johnson 2004, p.1596). Similarly, another botanical attribute that is characteristic of present-day tropical rainforests is an abundance of high climbing plants (Burnham and Johnson 2004). The medullosan seed-ferns, which were an important group of plants in the Pennsylvanian Coal Forests (DiMichele 2014), are thought to have included plants that grew with a climbing habit (e.g. Wilson and Fischer 2011).

In our view, however, the use of the term “tropical rainforest” to describe the Pennsylvanian Coal Forests is misleading and inappropriate. The biogeochemical function of this Carboniferous vegetation type is significantly different to that of present-day tropical rainforests. The Pennsylvanian Coal Forests were

TOP A reconstruction of a Pennsylvanian Coal Forest, from the Field Museum, Chicago. The fallen tree trunk will eventually become incorporated into the peat that is forming in this environment. Protected from oxidation, it will become coal; its carbon content will transfer to the long-term reservoir of carbon in the geological record. Courtesy Ian Glasspool





RIGHT **Seed-ferns like *Alethopteris* were prevalent in the Pennsylvanian Coal Forest understory**
Courtesy Prof Dianne Edwards

BELOW **Rainforest showing *Ceiba pentandra*, which will eventually decompose, its carbon content returned to the atmosphere in the form of carbon dioxide**
© Ammit Jack 2014, Shutterstock.com



vast swamps in which huge quantities of plant material were accumulated and buried, subsequently becoming coal and coaly shales (e.g. Berner and Canfield 1989). A long-term geological sink for organic carbon, the capture of organic matter in these ecosystems involved the production of oxygen and the consumption of carbon dioxide (Berner 2004). It is partly for this reason that, within the Phanerozoic geological era, the Carboniferous atmosphere is thought to have contained relatively low levels of carbon dioxide and relatively high levels of oxygen (e.g. Berner 2004).

Present-day tropical rainforests store carbon mostly as above-ground biomass, and measurements of variables taken in monitored forest plots (for example, tree trunk basal area, tree growth, stem number, stem recruitment and tree mortality) show a pattern of increasing plant growth over the last 40 years or so (e.g. Phillips *et al.* 1998; Phillips and Lewis 2014). Tropical rainforests contain around 40% of the world's carbon, stored as terrestrial biomass (Phillips *et al.* 1998)—it has been suggested that increases in tropical rainforest biomass may slow the rate at which anthropogenic emissions of carbon dioxide accumulate in the atmosphere (Phillips and Lewis 2014). Yet, little organic matter in normally well-drained soils is preserved in the geological

ACKNOWLEDGEMENTS

Thanks to Ian Glasspool for sending us the image of the Pennsylvanian Coal Forest, and to Oliver Phillips for providing literature and discussion of carbon storage in modern tropical rainforests.

record because it is rapidly oxidised by the respiration of soil microorganisms and detritivores (Berner 2004). Consequently, carbon removed from the atmosphere and accumulated in the above-ground biomass of present-day tropical rainforests is contained in a short-term reservoir of carbon, which is unlikely to enter the long-term reservoir of carbon found in the geological record.

The crux of our note is that naming the Pennsylvanian Coal Forests as “tropical rainforests” ignores considerable differences in the patterns of carbon storage and the biogeochemical function of these two vegetation types. The carbon stored as coal produced by the Pennsylvanian Coal Forests is held within a relatively stable geologically long-term reservoir, whereas the carbon stored as above-ground biomass in present-day tropical rainforests culminates in a relatively unstable and geologically short-term reservoir. The irony is that a considerable amount of carbon stored as Pennsylvanian coal has been released into the atmosphere which will not be returned to the geological record by present-day tropical rainforests.

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THE FRENCH

The International Reach of the Smith

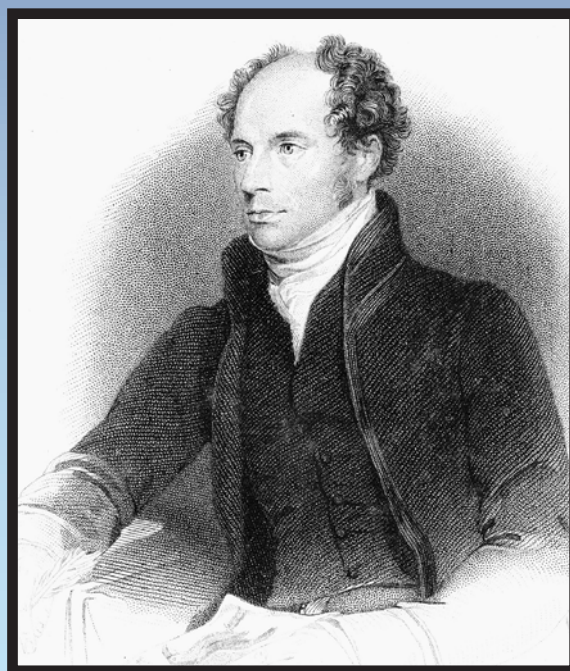
The Smith and Swainson correspondence collections in the Linnean Society of London's possession are part of a network of letters spanning through several countries. Both Sir James Edward Smith (1759–1828) and William John Swainson (1789–1855) shared the characteristic of maintaining strong bonds with foreign naturalists, and through these international connections came many specimens, material and much information.

Examining scientific data exchanged with French correspondents (amongst others) gives a sample of the global potential of such links. An inspection of the close connections that this material has with other archival collections in France and the UK suggests that these correspondences share some common characteristics.

An information network

Smith's and Swainson's correspondents were no random French naturalists, but those that were already in correspondence with other British naturalists of their time, thus revealing a transnational network of scientists whose letters are currently in the archives of different scientific organisations and institutions, most notably in Paris and London.

Smith and his good acquaintance Sir Joseph Banks (1743–1820) shared the same network of French correspondents. In particular, both were in contact with pro-Linnaean naturalists Charles Louis L'Héritier de Brutelle (1746–1800) and Pierre Marie Auguste Broussonet (1761–1807), who acted as scientific links between France and Britain; and, as a result of Smith's journey to Paris in 1786–87, the naturalists René Louiche



Desfontaines (1750–1833), Jacques Labillardière (1755–1834) and Antoine Gouan (1733–1831) were also added to the group. L'Héritier's letters to Banks and the Swedish botanist Jonas Dryander (1748–1810) in the British Library and in the (then) British Museum of Natural History are somewhat complementary to his correspondence with Smith: together they formed a cluster of botanists whose interest in the publication of new genera and species spanned across borders and national institutions. The chain continues on, as letters from botanist Alire Rafféneau Delile (1778–1850) can also be found amongst the Smith Papers, Delile later being an important correspondent of the Scottish botanist, and eventual President of the Linnean Society, Robert Brown (1773–1858).

TOP Digital collage
of James Edwards
Smith by Andrea
Deneau

ABOVE William
John Swainson's
correspondence was
far reaching

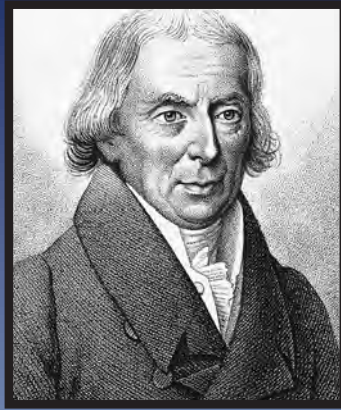
In parallel, Swainson corresponded notably with naturalists Charles-Lucien Bonaparte (1803–57) and Constantine Samuel Rafinesque (1783–1840), both of them being very well connected to international networks of naturalists, especially those in Britain and America. Some of Swainson's letters to Bonaparte are still preserved in the collections of the French Museum of Natural History in Paris (Ms 2612/3419–3429). Bonaparte in turn was connected with other British naturalists, including zoologist William Elford Leach (1790–1836), who sent him Swainson's synopsis of the birds discovered in Mexico by M. Bullock and his son (Museum of Natural History, Paris, Ms 2605/n°1870).

It is clear that the Smith and Swainson correspondences are part of a more global structure of exchanges whose core is an identifiable set of naturalists—integral cogs in a worldwide machine.

Highly mobile naturalists

Smith and Swainson's French correspondents were highly mobile naturalists, some being voyagers or collectors in the world, and some, particularly with regard to Smith's connections, were exiles trying to follow their scientific pursuits far from the French Revolution.

By way of an example, Smith (through Broussonet) came in contact with Abbé Durand, a French refugee and Catholic clergyman in Tangier, North Africa, who had fled the French Revolution. Durand went on to send African plant specimens and mineral collections to Smith. Smith offered botanical specimens to both Durand and Broussonet, and Durand subsequently thanked Smith in an 1802



LEFT René Louiche Desfontaines

CONNECTION

and Swainson Correspondences

letter, remembering his time in Tangier: ***I did not forget that, back in 1796, you wrote me to offer me plant specimens from New Holland. I still was at that time a wanderer and a vagabond.*** (Smith Papers 4.135, translated from the French)

War interrupted the correspondence, but the fact that Smith, an Englishman, was offering Australian specimens to Durand, a Frenchman expatriated in North Africa, is a rather interesting global pattern.

Swainson's French correspondents were even more mobile. With the exception of Achilles Valenciennes (1794–1865) residing in Paris, the majority were traveling naturalists, who lived in foreign countries, and even, like Rafinesque, spent their lives circulating in the world.

International data exchanges

These foreign connections channeled valuable specimens and data into the collections of the Society. Smith's letters to the botanist Jacques Philippe Martin Cels have a prolongation in the Museum of Natural History in Paris: the Parisian letters show that Cels was also integrated into a global network of British naturalists including William Aiton and Sir Joseph Banks, from whom he obtained scientific information from Botany Bay and the Cape of Good Hope. As Smith facilitated obtaining this data, in exchange, Cels offered Smith information regarding Cayenne in French Guiana, an experimental place for botany in the French empire, thus forming a chain of discovery (Museum of Natural History, Paris, Ms CRY 501/n°300).



LEFT Swedish botanist Jonas Dryander



LEFT The pro-Linnaean correspondent Pierre Marie Auguste Broussonet



LEFT Surgeon naturalist René Primevère Lesson

The correspondence between Swainson and Rafinesque shows the latter to be a kind of a wandering naturalist with scientific contacts on several continents, which resulted his sending some specimens from Sicily and America to Swainson. Swainson was also linked to a very important source for specimens and data collected on the famous French Pacific expeditions of the 1820s: surgeon naturalist René Primevère Lesson and his brother Pierre-Adolphe. The brothers took part in Louis Isidore Duperrey's 1822–25 and Jules Dumont d'Urville's 1826–29 circumnavigations respectively, as the naturalists on board the corvette *La Coquille* (renamed *Astrolabe* under Dumont d'Urville's command). Apart from those found in the Society's Swainson correspondence, autographs from Swainson to Lesson have been recorded in the Municipal Library of Rochefort sur Mer in France.

The Society's archives hold a wealth of correspondence that helps to determine the global impact of these multiple connections. They make it possible to analyse the flow of data that has entered an institution, and the way that data has contributed to the institution's success. What these letters highlight, above all, is the increasingly international profile of an 18th-century scientific network. The exchanges between French and British naturalists were not limited to France and Britain, but were eminently international and of great global significance.

Thérèse Bru
UMR 8533 CNRS (IDHES)
Paris 8 University, France
Current research: data transfers between
French and British naturalists
(18th and 19th centuries)

A Very Fine Swan Indeed Art, Science and The Unfeathered Bird

RIGHT **Musculature
of a cormorant**
© Katrina van Grouw



Begin 2015 at the Linnean Society where ornithologist and artist Katrina van Grouw will talk about the work behind her magnum opus *The Unfeathered Bird*. Including no fewer than 385 illustrations of 200 species, the drawings were all made from actual specimens, many of which are shown in lifelike positions using a set up similar in style to that of John James Audubon. Virtually all the complete skeletons were prepared and reconstructed at home from specimens donated from zoos, wildlife hospitals and conservation charities.

Join Katrina on 15 January as she explains her aims and inspirations, shares her insights about birds beneath their feathers, and relates how her home was turned upside down as more and more specimens joined the queue. Visit www.linnean.org/unfeathered for more information.

FORTHCOMING EVENTS 2015

- | | |
|--|--|
| 15 Jan
Evening Meeting
18.00–19.00 | A Very Fine Swan Indeed: Art, Science and The Unfeathered Bird
Speaker: Katrina van Grouw
No registration required |
| 29 Jan
Day Meeting
9.30–17.00 | Systematics and Botanical Illustration
Joint meeting with the Systematics Association
Organisers: Mike Fay (Royal Botanic Gardens, Kew) and Robert Scotland (Plant Sciences, University of Oxford)
Registration essential www.linnean.org/SBillustration |
| 19 Feb
Evening Meeting
18.00–19.00 | Coffee and Climate Change: Understanding the Problems and Finding the Solutions
Speaker: Dr Aaron Davis (Royal Botanic Gardens, Kew)
No registration required |
| 4 March
Lunchtime Lecture
12.30–13.00 | Birds and Music: A Violinist's View
Speaker: Paul Barritt (Permanent Guest Leader of the Hallé Orchestra)
No registration required |
| 19 March
Evening Meeting
18.00–19.00 | Arthropod Evolution
Speaker: Dr Greg Edgecombe (Natural History Museum, London)
No registration required |

Please check our website for other events not listed here



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Percy Sladen Memorial Fund and Portrait

The Trustees of the Percy Sladen Memorial Fund have generously offered to support the restoration of the portrait of W. Percy Sladen, by H. T. Wells, hanging in the Society's Meeting Room. The Fund was established in June 1904 by Mrs Constance Sladen FLS, to commemorate the life and work of her deceased husband, Walter Percy Sladen (1849–1900). For ten years he served as Zoological Secretary for the Linnean Society, but died at the early age of 51.

A leading authority on echinoderms, Sladen was asked by Sir Charles Wyville Thompson to describe the great number of echinoderm specimens collected on the *Challenger* oceanographic survey of 1872–76. This task led him to describe 34 new genera and 184 new species. His own collection of specimens, the culmination of a lifetime of research on both fossil and living species, was left to the Royal Albert Memorial Museum in Exeter, where it still remains. More details on Sladen's research and collections can be found in a biography by David Nichols, published in 2003 as Special Issue no. 4 of *The Linnean*, accessible through www.linnean.org/thelinnean.

Constance Sladen herself was among the first group of women to be elected as a Fellow on 17 November 1904. She is among the women depicted in the Society's painting by James Sant RA, a large picture which hangs in the building's main stairwell, and celebrates the admission of the first female Fellows on 19 January 1905. She stands, with her hands together, next to the seated Botanical secretary D. H. Scott.

The Percy Sladen Memorial Fund also offers funding opportunities in support of field work in the life and earth sciences.

The deadline for the next round is 30 January 2015. For more information or to apply, visit www.linnean.org/awards



Constance Sladen can be seen standing to the left, hands clasped