

## LIFE UNDERGROUND

### The Linnean Learning Video Series

The Linnean Learning video series is a project initiated by Ross Ziegelmeier and Leonie Berwick with the aim of sharing the Linnean Society's incredible collections with a greater number and wider constituency of people.

Digital mediums like podcasts and videos are highly valuable tools that enable the Society to reach not only our global membership, but students, schools and the general public as well. In a fast-paced world with information only a finger swipe away, people want to engage with high quality content that is both inspirational, instructive and easy to consume. Videos, such as those being produced for this project, break the standardised 'talking head' approach and interpret our collections in a way that has never been seen before.

The goal of the project has been to engage with different audiences on varying levels, so that there is at least one series to draw the casual (and not so casual) viewer into the world of Carl Linnaeus, taxonomy and biology. Three separate video series have been produced, each targeting a specific group—primary school viewers, secondary level education and the general public. The first series, 'Life Underground', explores the collections in pseudo-noir style, playing with the idea of biologists as sleuths in the natural world. Each video delves into mysterious stories about Linnaeus's specimens, housed within the vault below London's streets. Told by a plethora of talented scientists and communicators—Erica McAlister, James Maclaine, Miranda Lowe and Jon Ablett from London's Natural History Museum, and Chris

Thorogood from Oxford Botanic Gardens—this initial series was launched at the end of November: <https://www.youtube.com/user/LinneanSociety>. We'll ring in the New Year with series two, 'Clever Collections', which uses objects from the Society's collections as starting points for understanding the modern scientific method. Finally in February 2018 we will launch series three, 'The Curious Cases of Carl Linnaeus', a beautiful and fully animated series narrated by Dr George McGavin FLS that looks at Linnaeus and his innovations.

The videos have been stunningly animated and produced by Ross Ziegelmeier, with help and support from the team at the Society. Ross started working for the Society in 2015 as our inaugural BioMedia Meltdown Project Officer. Since then, Ross (an experienced videographer whose work has included videos for the Wellcome Trust, UK Space Agency and Edinburgh University) has been working on these series. Having also been awarded second place in a NASA live art video competition and having published video content with National Geographic, Deutsche Welle and Krautreporter, the Society's series have been in excellent hands.

Follow us on Twitter and Facebook to track each video's release, and feel free to share or retweet them in support; we'd love to know how people are engaging with our content!

Ross Ziegelmeier, Education Project Officer  
& Leonie Berwick, Special Publications Manager

BELOW: The beautifully animated 'Curious Cases of Carl Linnaeus' will be online in 2018

© The Linnean Society of London





# Merry Christmas from Everyone at the Linnean Society

We'd like to take this opportunity to wish you a very Merry Christmas from a chilly London. The Society is closed from 23 December, re-opening on 2 January 2018, but we look forward to seeing you again in the New Year!

All the very best,

*the Linnean Society team*

## WOMEN IN SCIENCE EVENT

21 March 2018

*"I was taught that the way of progress was neither swift nor easy." Marie Curie*

Join us in March 2018 for our first ever Women in Science event, taking place shortly after International Women's Day. Celebrating not only the Society's 230th anniversary but also our first female Fellows, this day meeting will include talks and sessions looking at the current research of women biologists. Kicking off this inspiring day will be a key note speech from renowned Physicist and *Guardian*/*Occam's* corner writer Professor Athene Donald DBE FRS, followed by discussions on issues facing women scientists today—to round it all off there will be a themed cocktail reception in our stunning library.

Everyone welcome—please keep an eye on our events page ([www.linnean.org/events](http://www.linnean.org/events)) and Linnean News for details of registration.



## 2018 IS THE YEAR OF INKQ

### A NEW ART PUBLICATION BY INKY LEAVES PUBLISHING

Building on the success of Leafscape, botanical artist Jess Shepherd FLS will be publishing a new sci-art newspaper in 2018. Printed on recycled, lightweight paper, INK Quarterly is being designed to be a piece of art in itself; something beautiful that can be collected and even framed. With an emphasis on art and the natural sciences, Jess will contribute alongside other artists, academics and scientists from a wide range of disciplines. Each edition will be a limited run of a few hundred and only available by post to subscribers.



To subscribe visit <https://www.inkyleavespublishing.com/inkq/>. If you are interested in contributing content to the newspaper email Inky Leaves Publishing at [office@inkyleavespublishing.com](mailto:office@inkyleavespublishing.com)

ABOVE:

© Pixabay / Daria Yakovleva

FAR LEFT:

Winifred Brenchley FLS (1883–1953) at Rothamstead Research Station  
© Rothamstead Research Ltd

LEFT:

© inkyleaves.com



# A CHRISTMAS GIFT

**Christmas has come early at Burlington House as we celebrate the launch of the Linnean Society's first online archive catalogue.**

The Society's archives are a treasure trove of unique and exciting material just waiting to be further explored. However, access has long been impeded by the lack of a single searchable archive catalogue, meaning that there has never been a way for external researchers, or even Society staff, to directly locate details about the archive collections. A further problem is that many of the collections only have paper finding aids, ranging from index cards and hand written lists inside boxes, to some electronic records, such as Word documents or Excel spreadsheets. As a result all enquiries have to come through Collections staff who have access to the various finding aids. Since starting as the Society's Archivist in September 2016, I have been working on opening up the archive collections to Fellows and wider researchers. My long-term plan is to catalogue all of the archive collections, thus producing detailed descriptions of all of the archival material, which will be full-text searchable. A key part of this is launching our online archive catalogue as this will make it quicker and easier to search the contents of our collections, thus opening them up for the first time to a global audience. It also provides a means of condensing all of the information about the collections (currently spread in various paper and electronic formats) into one location.

## Time to Explore

With the catalogue, researchers can now easily browse the contents of our holdings and potentially stumble across research gems that they might otherwise not have known about. Given our focus on natural history, you might expect to find items like the research notebooks of Alfred Russel Wallace or correspondence of Charles Darwin. Yet there are also some more unanticipated finds, like the volume produced by Alexander Shaw (Ref: MS/100) containing bark samples collected on the voyage of Captain James Cook, as mentioned in the 2016 Annual Review. Or a travel diary belonging to John Timothy Swainson (1756–1824)—one of the seven original members of the Linnean Society—documenting a trip in the summer of 1799 from London to the Lake District including observations of places, landmarks and local customs witnessed along the way. The diary (Ref: MS/174a) offers a fascinating insight into English life at the turn of the 19th century. A brief sojourn to Manchester, with its "various machines of the manufactories turning unceasingly", is far from positive, with the travellers concluding: "Populousness and trade were not what we were in search of. A breakfast was all we wanted in Manchester."

Another fantastic item is a small photo album (Ref: MS/569) dedicated to the former president of the British Mycological Society, Arthur Anselm Pearson. The photographs show the Society's members having rather formal dinner in the middle of a forest in Spa, Belgium, complete with white tablecloths, floral table decorations and waiters in white dinner jackets serving food from silver platters.

For further exciting discoveries, take a look at our new online catalogue ([www.linnean.org/research-collections/archives](http://www.linnean.org/research-collections/archives)). As always, please get in touch if you have any questions as Collections staff are always happy to help with any research queries. Happy exploring!

Liz McGow  
Archivist  
[liz.mcgow@linnean.org](mailto:liz.mcgow@linnean.org)



LEFT: The Society's online archive catalogue was launched in early December  
All images © The Linnean Society of London

BOTTOM: The British Mycological Society enjoying a formal dinner in the middle of a forest in Spa, Belgium







# A FOOL'S EXPERIMENTS

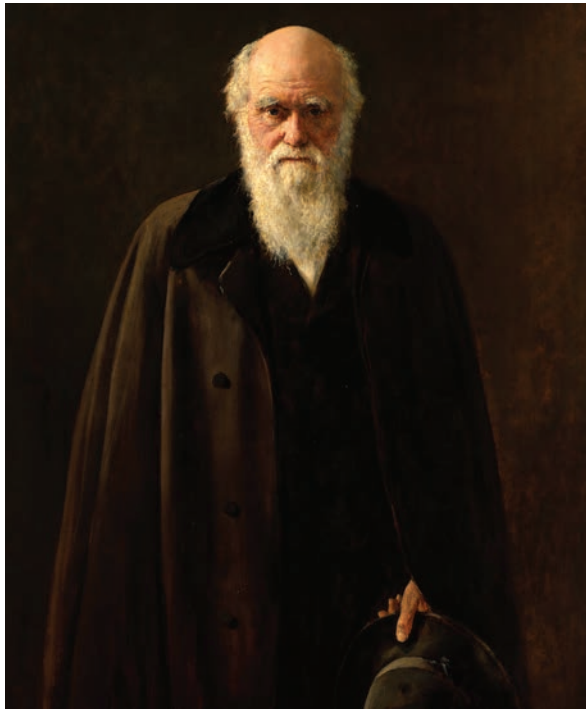
## LESSONS FROM AN INVETERATE EXPERIMENTISER

ABOVE:  
Perhaps the last of the  
great country-house  
scientists, Darwin  
'experimentised' in the  
now famous greenhouse  
at Down

RIGHT: The famous  
portrait of Charles  
Darwin by John Collier  
All images courtesy  
James Costa, except  
Darwin portrait and  
manuscript pages  
© The Linnean Society  
of London

FAR RIGHT: Some  
bound pages of  
Darwin's manuscript  
for *The Formation of  
Vegetable Mould...*,  
held in the Society's  
collections

I imagine that all readers of *PuLSe* are familiar with John Collier's portrait of the aged Charles Darwin that graces the Linnean Society's Meeting Room. This portrait, executed in July 1881 at the request of the Society, has become perhaps the iconic image of Darwin, with his great white beard and brooding eyes. I like to think that behind the caped, melancholy-looking portrait was an enthusiastic *experimentiser*, in the parlance of the day, whose humour and boyish enthusiasms for on-the-fly experiments were appreciated by all who knew him.



As Darwin sat for that portrait in the summer of 1881 his final book was already in press: *The Formation of Vegetable Mould, Through the Action of Worms, with Observations on Their Habits* was published by John Murray that October. It was the book that brought Darwin full circle in a life of "fool's experiments", as he liked to call them. As suggested by the title, this book makes two arguments: the power of earthworms as a geological force slowly remaking the landscape, and the behavior of earthworms, showing these reclusive

creatures to have no small modicum of intelligence. Darwin's interest in worms dated back to the late 1830s, when his future father-in-law, Josiah Wedgwood II, showed him a field where cinders and stones had been scattered a few years before, only to have sunken uniformly below-ground. Wedgwood was sure that the constant undermining action of earthworms was responsible. Darwin's curiosity was piqued, and he commenced a study that was soon reported to the Geological Society of London. By the time this study was published in the Society's *Proceedings* in 1838 Darwin had not only become a confirmed transmutationist, he had also discovered the elusive mechanism for the process: natural selection. His early earthworm *experimentising* thus coincided with perhaps his earliest revelation of the true nature of the 'Tree of Life'.

Returning to earthworms late in life, Darwin was bookending his geological interests with far more quantitative studies of worms as earth-movers, as well as investigations that encompassed no less than the fundamental unity of life. He was convinced that the intelligence of the so-called higher animals had its beginning in the humblest, as shown by his curious experiments into the sense perceptions, social activity and problem-solving of earthworms. He gave varying paper cutouts to worms in his flowerpot wormeries to test their skill at figuring out how best to pull them into their burrows, and would observe the worms at night to monitor their behavior. He breathed on them and brandished a red-hot poker to gauge their sensitivity, and famously on one memorable



occasion conducted a musical trio consisting of wife Emma on piano, son Frank on bassoon, and grandson Bernard on pennywhistle, serenading his potted worms to test their response. Emma found it all very amusing, commenting wryly to their son Leonard that his father "has taken to training earthworms but does not make much progress, as they can neither see nor hear". But Darwin was convinced that they could effectively see, hear, had social sensibilities and a certain intelligence as well.



**RIGHT:**  
The family home at  
Down House was a  
veritable field station

**BOTTOM:** Darwin  
used the "lawn plot"  
at Down to document  
competition

His earthworm studies also illustrate the collaborative aspect of Darwin's experimental programs: his family, friends and far-flung correspondents were all involved in observing or collecting data in one way or another, from weighing soil displaced by burrowing worms to measuring subsidence of fallen stone blocks at Stonehenge. The family home at Down House was a veritable field station, and no family holiday lacked experimental pursuits: on one Darwin could be found feeding his toenails to sundews; on another he was thrashing wild foxglove plants, trying to simulate lashing winds to test its effects on pollination.

His enthusiasm for field work was nothing new: Darwin was an inveterate experimenter. Even while on the *Beagle* voyage he tested the sense of smell of vultures, and monitored gas production by certain marine invertebrates to determine if they were photosynthesizing or respiring. The results of several of his home-spun experiments are given in *On the Origin of Species* (1859), including his years-long study of the viability of seeds in saltwater, dangling duck's feet in aquaria to determine the likelihood of hitchhikers, his famous "lawn plot" and "weed garden" investigations documenting competition and struggle and a classic pollinator exclusion study with clovers. Darwin's backyard experiments provided insights with universal implications and some are now considered foundational in the history of ecology.

### One Longer Argument

After the *Origin* Darwin authored some ten additional books, more than half of them botanical in nature. Their subjects might seem like so many pet projects of an eccentric Victorian naturalist, but in fact they are all of a piece. If the *Origin* was "one long argument", as Darwin called it, his subsequent works constitute one longer argument. His first post-*Origin* book, on orchids, explores structural variations-on-a-theme, both undermining natural theology (no one saw that the book "bears on design, that endless question" he commented to botanist Asa Gray), and underscoring the importance of out-crossing, a topic that was to become central to Darwin's later books on flower structure. Along the way Darwin discovered the significance of heterostyly, cleistogamous flowers, and the many Rube Goldberg-like contrivances that flowers employ to entice insects and ensure cross-pollination.



Another object was to understand the fundamental unity of plants and animals, evidence in support of the evolutionary unity of all species. Darwin had long appreciated the blurred plant-animal identity of some marine invertebrates, groups such as the so-called "zoophytes" whose very name underscored the point. These were seemingly simple animals with plant-like properties, a favourite of Darwin's transmutationist Edinburgh mentor Robert Grant. Later he pursued plants with animal-like properties: carnivory, for example, notably those like sundews and fly-traps that had some sense perception and could actually digest insects. Climbing plants, too, provided object lessons by presenting another fascinating example of botanical sense perception, as well as structural variations-on-a-theme with regard to climbing and clinging adaptations (some do this with modified leaves called tendrils, others use the lead shoot, still others climb with modified roots, and even petioles). His investigations with climbers led Darwin to discover the phenomenon



of circumnutation, and, later, recognise this as an adaptive elaboration of seemingly universal circular movement of plant shoots during growth.

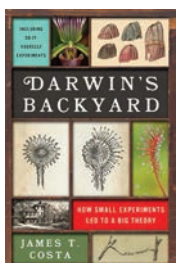
### The Wide-Reaching Effects of a 'Fool's Experiments'

Darwin's method is as instructive as it is amusing, worthy of our notice for its implications for science education today. Darwin lived and worked in a period that saw a shift from science conducted largely by wealthy gentlemen in their town- or country houses, to a professional scientific community utilising dedicated labs within research institutions. Darwin was perhaps the last of the great country house scientists, and, wealthy though he was, a key attribute of his science of interest today is its *accessibility*. Indeed, consider that Darwin's science represents scientific inquiry at its most essential: seeing familiar things in new ways, asking questions, and putting those questions to the test—easily emulated in homes and schools today. Darwin's experiments present us with a treasure-trove of possibilities for hands-on exploration of such subjects as competition, diversity, evolution, adaptation, structural variation, pollination ecology, plant physiology, behavior, and more.

If, as Proust said, "the real voyage of discovery consists not in seeking new landscapes but in having new eyes", Darwin's experiments are blueprints for a novel approach in science education, enabling us to follow Darwin's lead and see beneath the surface of things to the underlying patterns and processes of nature—like glimpsing his beloved earthworms in action, silent and unseen yet incessantly remaking the world.

James T. Costa FLS

Highlands Biological Station, 265 N. Sixth Street, Highlands, NC 28741 USA &  
Department of Biology, Western Carolina University, Cullowhee, NC 28723 USA



*Darwin's Backyard* by  
James T. Costa

Ideas and resources for following in Darwin's footsteps can be found in *Darwin-Inspired Learning*, edited by Carolyn Boulter, Michael Reiss and Dawn Sanders (Sense Publishers, 2015) and James T. Costa's book *Darwin's Backyard: How Small Experiments Led to a Big Theory* (W. W. Norton, 2017). A-Level modules are also available: [www.linnean.org/darwinlearn](http://www.linnean.org/darwinlearn)

# A KNOTTY PROBLEM

## The Invasion of Japanese Knotweed

Japanese knotweed [*Fallopia japonica*, a member of the Dock Family (Polygonaceae) native to East Asia], was first made known to the western world by the 18th-century German physician Philipp Franz von Siebold (1796–1866) who, when on secondment to the Dutch trading outpost of Dejima in Japan, found the plant growing in some profusion on the montane slopes of certain volcanoes. In 1847 he shipped some specimens back to his horticultural nursery in the Dutch city of Leiden, where the species' bamboo-like stems became popular as cattle fodder in spring and summer, and its woody stalks as bedding in autumn and winter. The beautiful white florets were much in demand for bridal bouquets and interior decoration, and it was also widely planted to stabilise shifting sand dunes. Three years later, in August 1850, Siebold sent a specimen to the Royal Botanic Gardens at Kew, amongst about 40 other specimens from his collections. The specimen in question arrived labelled *Polygonum sieboldii* (later to be changed to *Polygonum cuspidatum*, before *Fallopia japonica* was finally settled upon), and had been procured in Nagasaki; within a few years the species had become widely available in horticultural nurseries throughout Britain.

### Day of the Triffids

By the turn of the 19th century, Japanese knotweed had escaped from cultivation into the wild, and in Britain occurred in Lancashire, Glamorgan and the then county of Middlesex. Nevertheless, that doyenne of British horticulture, Gertrude Jekyll (1843–1932), highly recommended it as an ornamental shrub for British gardens. By the outbreak of the Second World War it had spread west to western Cornwall, the Scilly Isles and to County Galway in eastern Ireland, north to Perthshire and Stirling in Scotland, to northern Suffolk in England and south to the Isle of Wight. By 1970 Japanese knotweed was widely distributed throughout much of Britain apart from the extreme north of Scotland, and much of Ireland had also been overrun. In the early '90s, it was discovered that just 0.7gm of the species' rhizome was enough to cause a new plant to spread. By 2014 it was easier to say where the species did not occur than where it did. "The day of the triffids," as one tabloid journalist put it, "had arrived."

**P. CUSPIDATUM.**—Smaller than the previous species in every respect, and usually attaining a height of 4 ft. to 6 ft.; the branches, too, spread in a similar manner. The leaves are ovate-cordate in shape, suddenly narrowing into a cuspidate point, and are generally from 3 in. to 4 in. long. The axillary flower-spikes are much branched, and the flowers are white, hence, in this one respect, it is more effective than *P. sachalinense*. It is equally suitable for the wild garden or shrubbery, and should be planted a little nearer to the front. It is a native of China and Japan, and a good figure may be found in *The Botanical Magazine*, t. 6503.

It was not long after its naturalisation in the wild that it became apparent what a pernicious weed *F. japonica* could become. Growing to a height of 2m and with immense strength (like the European Mole *Talpa europaea* it has no difficulty in penetrating tarmac) and rapid growth, it easily outcompeted all native British species. In 1981, Japanese knotweed was included in Part II of Schedule 9 of the Wildlife and Countryside Act, under which it became an offence to plant the species in the wild.

### Biological Control and the Cost of Eradication

Unfortunately for those attempting to eradicate *F. japonica* it is an

extremely tenacious species; as mentioned previously, it does not spread by pollination in Britain but purely by the regeneration of fragments—every plant in the country has precisely the same DNA sequence as the one brought back to Leiden by Siebold in 1847. Normal attempts at eradication e.g. by cutting, poisoning or digging (its root system can be up to 3m deep) only have the effect of helping it to spread—it thrives on disturbance, and can lie dormant underground for up to a decade.



Japanese knotweed is unlikely ever to be eradicated in Britain, (where it currently costs the nation an estimated £170 million a year) and where eradication (were it to prove possible) would cost around £1.5 billion. Clearing Japanese knotweed from the 12 hectares site of the 2012 Olympic Games in east London alone cost over £70 million.

The only hope seems to be some sort of limited biological control. To this end, research by the Centre for Agricultural Bioscience (CABI) in Berkshire has revealed that of almost 200 species of insects known to feed on Japanese knotweed, one, *Aphalara itadori*, a psyllid plant louse (Order: Hemiptera), feeds exclusively on the sap of Japanese knotweed, causing it to produce more, but smaller, leaves, thus inhibiting the plant's growth; *A. itadori* is not itself eaten by any native British species and appears able to survive a British winter, and may thus be suitable as a controlling agent. Experimentally, *A. itadori* has been released on Japanese knotweed at a number of sites in England and Wales—incidentally the first time that the release of an alien insect has ever been sanctioned by the European Union. These trials have shown initial encouraging and positive results.

### BELOW LEFT:

*Fallopia japonica* (then named *Polygonum cuspidatum*) described in *The Gardening World Illustrated* (4 Oct 1884) as "equally suitable for the wild garden or shrubbery"  
© The Linnean Society of London

LEFT: A stunning illustration of *Fallopia japonica* from Curtis's *Botanical Magazine* (1880)

© The Linnean Society of London





In 2014, when the Anti-Social Behaviour, Crime and Policing Act empowered local Councils and the police to use Community Protection Notices to compel landowners to at least attempt to control Japanese knotweed (its mere presence is not itself illegal) and other noxious invasive weeds on their properties, the Home Office said that “those plants threaten our native biodiversity by crowding out native species and destabilising river banks. They can also cause damage to forestry, agriculture and infrastructure—. Breach of any requirement notice—would be a criminal offence”, making the culprit liable to a fine of up to £2,500. In 2017, police in County Durham, England, became the first force in the country to take action under an amendment to the 2014 Act by obtaining from the Environment Agency a Community Protection Notice requiring a landowner at Burnhope north-west of Durham to take whatever action was deemed necessary to attempt to rid his land of *F. japonica*, the cost of which has been estimated at several hundreds of thousands of pounds.

Christopher Lever FLS

## What's in a name?

The species *Fallopia japonica* is known in its native Japan as *itadori*. Loosely translated this means ‘remove pain’, most likely because the plant is used in both Japanese and Chinese medicine to treat infections, in part due to resveratrol, a type of stilbenoid produced by the plant when besieged by infection.

The invasive and dogged quality of the species has also earned it English common names that may reflect this, like monkey fungus and Hancock's curse. The latter references a possibly apocryphal tale of a man in Cornwall named Hancock who left the species to run amok in his garden, so much so that it ended up devaluing his neighbour's property.



## References

Conolly, A. P. 1977. 'The distribution and history in the British Isles of some alien species of *Polygonum* and *Reynoutria*.' *Watsonia* 11: 291–311.

Knight, S. 2015. 'The Day of the Knotweed: Battling Britain's most destructive invasive plant.' *Harper's Issue*: May. [https://harpers.org/archive/2015/05/the-day-of-the-knotweed/2/ - Accessed November 2017]

ABOVE:

*Fallopia japonica* is a tenacious invasive species, with rapid growth and root systems up to 3m deep  
© Pixabay / HOerwin56

LEFT: Philipp Franz von Siebold's *Flora Japonica* (1835); Siebold introduced Japanese knotweed to Europe  
© The Linnean Society of London

BOTTOM:

© WikiCommons

# FORTHCOMING EVENTS 2018

**10 January**  
Lunchtime  
Lecture  
12.30–13.00

**What Hope for Corals in this International Year of the Reef?**  
**Speaker:** *Prof James Crabbe FLS, University of Oxford*  
**Registration is essential:**  
<https://www.linnean.org/events>

**18 January**  
Evening Meeting  
18.00–19.00

**Reproduction in Sponges: Genes, Structures and Ecological Patterns**  
**Speaker:** *Dr Ana Riesgo Gil, Natural History Museum, London*  
**Registration is essential:**  
<https://www.linnean.org/events>

**7 February**  
Lunchtime  
Lecture  
12.30–13.00

**The Island as the Origin of all Species**  
**Speaker:** *Elaine Charwat FLS, Linnean Society of London*  
**Registration essential:**  
<https://www.linnean.org/events>

**15 February**  
Evening Meeting  
18.00–19.00

**Ways of Thinking: From Crows to Children and Back Again**  
**Speaker:** *Prof Nicky Clayton, University of Cambridge*  
**Registration essential:**  
<https://www.linnean.org/events>

**7 March**  
Lunchtime  
Lecture  
12.30–13.00

**Will Reefs of Calcifying Algae protect Marine Biodiversity against Climate Change?**  
**Speaker:** *Dr Federica Ragazzola, University of Portsmouth*  
**Registration essential:**  
<https://www.linnean.org/events>

**15 March**  
Evening Meeting  
18.00–19.00

**A Bioenergetic Basis for the Three Domains of Life**  
**Speaker:** *Prof Nick Lane FLS, University College London*  
**Registration essential:**  
<https://www.linnean.org/events>

**Please check our website for other events not listed here**



The Linnean Society of London  
Burlington House, Piccadilly,  
London W1J 0BF UK

T: +44 (0)20 7434 4479  
E: [leonie@linnean.org](mailto:leonie@linnean.org)  
W: [www.linnean.org](http://www.linnean.org)

Manufactured in the UK, using paper with a minimum  
75% recycled content that is FSC accredited.  
Printed to ISO 14001 accreditation.

Charity Reference No. 220509



All articles welcome – please submit news, reviews, events and articles in MS Word format to the Editor at [leonie@linnean.org](mailto:leonie@linnean.org). Accompanying images must be a high resolution JPEG or TIFF with appropriate permission and copyright.

## A Fond Farewell...



### Alicia Fernandez

Alicia joined the Society in 2015 as our Events and Communications Manager, and in that time she has become a vital part of the team. Her enthusiasm and professionalism has resulted in some fantastic events, with her creative governance of the lunchtime lecture series increasing attendance by around 28%.

Alicia has also massively increased our social media presence, particularly on Twitter where followers increased from 3,708 in 2015 to 6,648 just two years later. She also started the Society's YouTube channel and set up Linnean News for information about the Society's daily stories and events. Importantly, she also organised (and delivered with flying colours) the Society's very first meeting for Fellows in the US. No mean feat when the event is in a completely different country!

Alicia is going to be sorely missed by everyone at the Society and we wish her all the best for her future.



### Rhys Grant

Rhys started his role as Education and Public Engagement Officer at the Society only last year, but in that short time he has done his utmost to increase awareness of the Society's educational resources and engagement with the Society itself. As well as starting the LinneanLearning Twitter feed to promote our educational

activities (with a fantastic engagement rate of 2.60%), 2016 alone saw 40,000 people engaged with our education outreach online.

Collaboratively Rhys has worked on projects with OneZoom and their Tree of Life, as well as being the touchstone for the first ever British Society for the History of Science (BSHS) Engagement Fellow (Verity Darke), which resulted in the mini-exhibition, *Unnatural Histories*.

We wish Rhys all the best with his new position back at the University of Cambridge, where he will be undertaking an incredible and newly developed interdepartmental public engagement role—we know he will be fantastic.

## ...and a Warm Welcome



### Leanne Melbourne

Leanne started as our new Events and Communications Manager in mid-November and we already know she is going to be a brilliant member of the team. Leanne has just completed her PhD at the University of Bristol on the effect of climate change on coralline algae, and is passionate about science outreach and communication. Having written

numerous blog posts and an article for the online platform 'The Conversation', Leanne has also volunteered at festivals and given talks about her research to varied audiences.

She is looking forward to creating a highly interesting and diverse event programme showcasing everything possible about current biological research. Leanne is also keen to increase our number of student associates and hopes to create an interesting platform for early career researchers. [leanne@linnean.org](mailto:leanne@linnean.org)



### Joe Burton

Joe took over as our Education and Public Engagement Officer at the very end of November, with his first task being to help with the launch of the Linnean Learning Video Series. Joe has been interested in science outreach ever since his favourite teacher's thoughtful, democratic approach led him to connect with the subject on a new level, and he has been pro-informal learning ever since.

Joe has been involved in education projects all over the world, in areas of both serious deprivation and of wealth, and has witnessed how student-led learning has helped people to see how science isn't just a subject but a way of thinking. Now Joe is eager to see how we can showcase everything the Linnean Society and the natural world has to offer in new and unexpected ways. [joseph@linnean.org](mailto:joseph@linnean.org)