

The Linnean

Communicating nature since 1788

Vol 39 | No 1 | May 2023

A BOTANICAL MYSTERY
in three volumes

A bit of a
WILD OSTRICH CHASE

Tinged
with tragedy

*The unlikely friendship of James
Edward Smith and Mariamne Johnes*

Life Through a Lens
FOLLOWING A CAREER
IN MICROSCOPY

The
LINNEAN
SOCIETY
of London



About us

The Linnean Society of London is the world's oldest active society devoted to natural history. Founded in 1788 by botanist Sir James Edward Smith (1759–1828), the Society takes its name from the Swedish naturalist Carl Linnaeus (1707–1778), whose botanical, zoological and library collections have been in our keeping since 1829. These collections, awarded Designated status by Arts Council England, are of fundamental importance as a primary reference for the naming of plants and animals. They are enhanced by the Society's own rich library which provides key resources for scientific and cultural research.

Our vision is a world where nature is understood, valued and protected. To do this we aim to inform, involve and inspire people about nature and its significance through our collections, events and publications. Thanks to the wide-ranging expertise of our membership and our unique collections, we are a hub for science communication through interdisciplinary learning and engagement.



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Communicating nature since 1788

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Dear Fellows,

In this, our first issue of 2023, we'll explore some stories from within our collections, like that of James Edward Smith and his friendship and correspondence with the Johnes family of Hafod in Wales. Serving as a mentor to Thomas Hafod's daughter Mariamne, letters in our archives show that Smith, like Carl Linnaeus before him, valued scientific input from all.



Our President, Professor Anjali Goswami, tells us of her first 300 days in the role, and we follow the fascinating career of last year's Trail-Crisp Medal winner Frieda Christie in 'Life Through a Lens'. We also hope you'll join us in celebrating our medal and award winners for 2023.

We need your help with solving a mystery—three volumes of an herbarium have found their way to us. They seem to have been part of a set of four, but where is the missing volume and who put the herbarium together? Your insight may help us to solve this conundrum.

We have some terrific upcoming events so don't forget to register for those, and we hope to see you at the AGM/Anniversary Meeting, whether online or in person.

Leonie

Leonie Berwick

Editor, *The Linnean* & Publications Manager (leonie@linnean.org)

You can also find the online interactive version of this issue in the Members' Area.

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Contact us



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



+44 (0)20 7434 4479



info@linnean.org

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The Linnean is published three times a year, in spring, summer and winter (UK). All contributions are welcome, but please contact the Editor or see the *Guidelines for Contributors* document on our website before writing and submitting articles (www.linnean.org/thelinnean).

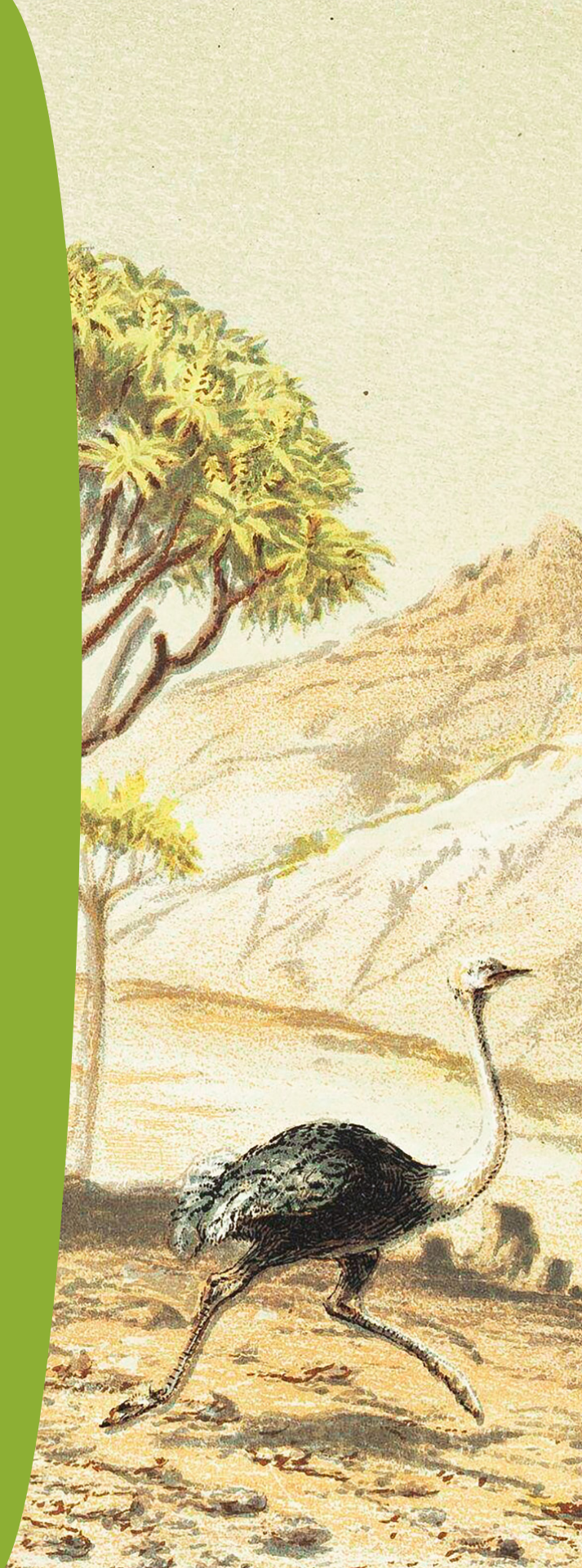
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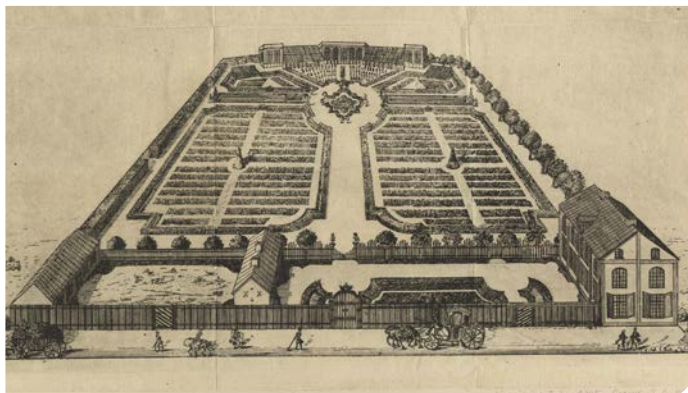
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What's on



THE LINNAEUS HOUSEHOLD: IDENTITY AND MATERIALITY

Speaker: Annika Windahl Ponten

23 May | 12.30 BST

The Linnaeus household was formed when Carl Linnaeus married Sara Elisabeth Moreae and they moved to the house in the botanical garden in Uppsala. It was a semi-public space where lectures took place, colleagues visited and collections were kept, and was an important part of all the work and achievements that made Carl Linnaeus pater so famous. Join Annika as she takes us on a tour! **(ONLINE ONLY.)**



AGM AND ANNIVERSARY MEETING 2023

Speaker: Anjali Goswami, President

24 May | 16.30–19.00 BST

Join us for our Annual General Meeting to hear about what's been happening at the Society over the past year. Hear from the Society's President and Treasurer and catch up with all of our news.

At our Anniversary Meeting in the second half of the event, we'll celebrate all of the fantastic winners of our Medals and Awards for 2023. We hope you will join us in offering all of our winners your congratulations. A wine reception will follow.

Members who are unable to attend in person can also attend and vote online. **(ONSITE AND ONLINE—REGISTRATION ESSENTIAL)**



BOTANY WALK: HUTCHINSON'S BANK, CHAPEL BANK AND THREECORNER GROVE

Guide: Mark Spencer

18 June | 13.00–15.00 BST (Nature Walk)

Under the care of the London Wildlife Trust, Hutchinson's Bank (and the nearby Chapel Bank & Threecorner Grove) in Croydon is one of the best places in the London area to see chalkland wildflowers and insects, particularly butterflies.

The steep slopes are home to several orchid species as well as other important and beautiful grassland plants that are increasingly at risk of extinction in the area.

Register and join botanist Mark Spencer for this enlightening walk exploring some interesting London wildlife. **(OFFSITE NATURE WALK.)**

To book for these and other events not shown, visit www.linnean.org/events



THE JEWEL BOX: HOW MOTHS ILLUMINATE NATURE'S HIDDEN RULES

Speaker: Tim Blackburn
21 June | 18.00 BST

Every morning, ecologist Tim Blackburn is inspired by the diversity contained within the moth trap he runs on the roof of his London flat. Beautiful, ineffably mysterious organisms, these moths offer a glimpse into a larger order, one that extends beyond individual species, beyond lepidoptera or insects, and into a hidden landscape. In this talk, Tim demonstrates how the contents of one small box can illuminate the workings of all nature. **(ONLINE ONLY.)**

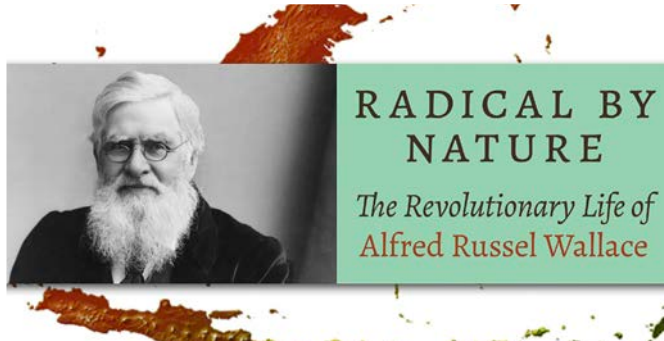
THOMAS BIRCH FREEMAN: VICTORIAN MISSIONARY AND BOTANIST

Speaker: Advolly Richmond
20 July | 18.00 BST

Rev. Thomas Birch Freeman (1809–1890) was an Anglo-African Victorian missionary and botanist. In 1869, the main coffee being grown in certain British colonies was *Coffea arabica*, which was being destroyed by the fungal leaf disease *Hemileia vastatrix*. Advolly Richmond will show how Freeman, among other accomplishments, was instrumental in distribution, via the Royal Botanic Gardens, Kew, in introducing a Liberian coffee in an attempt to save the coffee industry. **(ONSITE AND ONLINE.)**



Images: Tim Blackburn; James T. Costa; Advolly Richmond; The Linnean Society of London



RADICAL BY NATURE—A CELEBRATION OF ALFRED RUSSEL WALLACE

Speaker: James T. Costa
30 June | 18.00 BST (Special Event)

Perhaps the most famed naturalist of the Victorian age by the end of his long life in 1913, Alfred Russel Wallace's expeditions to remote Amazonia and southeast Asia became the stuff of legend: a collector of thousands of species new to science, he independently discovered natural selection and founded the field of evolutionary biogeography. Yet Wallace also courted controversy with his fiercely independent streak. James T. Costa celebrates Wallace in this presentation of his new Wallace biography, *Radical by Nature*.

This event will be followed by a drinks reception in the Reynold's Room at the Royal Academy of Arts.

(THE EVENT WILL BE ONSITE AND ONLINE; PLEASE REGISTER APPROPRIATELY.)

TREASURES TOURS

Guide: Members of the Collections Team
24 May (Members only), 1 June, 6 July | 14.00–15.30 BST

Join our expert staff on an in-depth, behind-the-scenes tour of our unique home at Burlington House in central London.

Book your place!



News

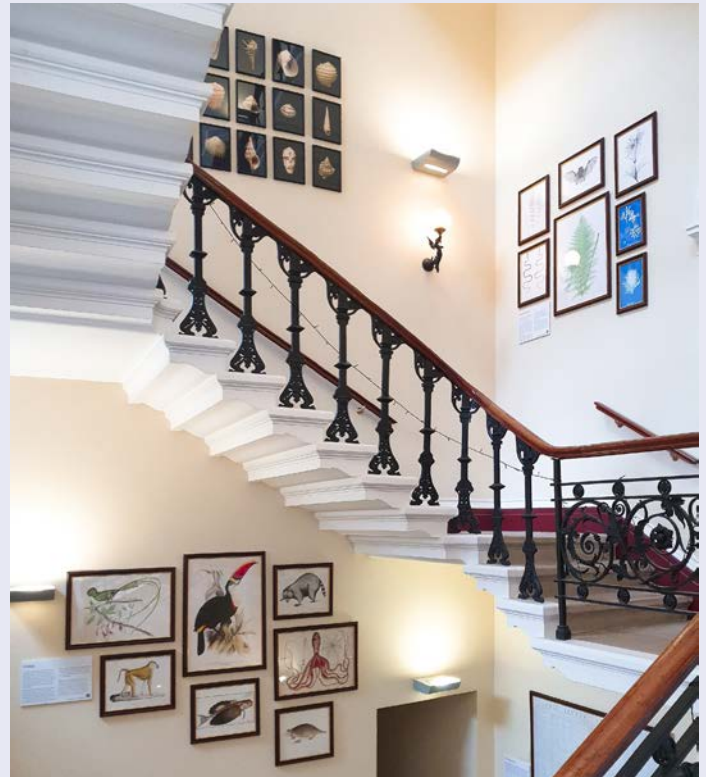
STEP BY STEP: LAUNCHING OUR NEW-LOOK STAIRCASE

At the end of February we ‘launched’ our new-look staircase, displaying images from within the Society’s collections. The staircase now looks brighter and more colourful, telling the story of our collections and appreciating the work of many past Fellow, as well as some ‘unsung’ heroes.

Our members-only event on 23 February was a terrific success, with over 105 Fellows, Associates and Student Associates joining us to celebrate. Head of Collections Isabelle Charmantier spoke about the Society’s various homes since its inception, and the full history of the learned societies’ homes at Burlington House since 1873. Digital Assets Manager Andrea Deneau and Publications Manager Leonie Berwick gave an overview as to what images were selected and why, and how the digitisation, editing, printing and interpretive text was pulled together. Additionally, a one-off display in our library worked in tandem with the staircase images.



Very generously, Agnes Arber Gin donated three bottles for a raffle held at the event reception, in support of our after-school nature club programme as part of The Wild Escape, an Art Fund scheme developed to connect schools with collections, and in the Society’s case, the natural world. The money raised was put towards transportation for children aged 7–11 from St Clement and St James Primary School, to bring them to the Society to present their own nature journals and see items from the collections. We also received some separate donations from Linnean Society members after the event, for which we offer our sincere thanks. The students had a wonderful time during their visit, made possible by your generosity.



CLOCKWISE FROM LEFT: Our staircase has become a place to discover more about our collections; The area looks brighter, inviting and includes details about previously under-represented groups; Agnes Arber Gin very generously donated three bottles for our raffle—a gin commemorating the first woman to receive the Linnean Medal.

CONNECTING THROUGH NATURE

Our Education Manager Ayesha Meredith-Lewis has been working hard since the start of the year on projects that will have a lasting impact on students and their relationship with the natural world.

GREAT SCIENCE SHARE

In November 2022, the Society was invited to create some resources to be released as part of the Great Science Share for Schools (GSS, based at the University of Manchester) in 2023. The annual programme encourages young people to get involved in STEM—the Society decided to develop resources relating to fungi to help fill the knowledge gap in this area, and tied it in with classification.

Education Manager Ayesha Meredith-Lewis and Multimedia Content Producer Ross Zeigelmeier worked with experts to provide three different resource packs for students at differing levels (KS 1, 2 and 3). Specific overarching questions were asked for each learning level:

- **KS1:** Are mushrooms plants?
- **KS2:** Can we identify and classify living things around us?
- **KS3:** Is there much room for mushrooms in our future society?

A series of six videos were made, with relevantly linked resource materials like worksheets and enquiry-based learning activities.

GSS began hosting our resources on 27 February and they will remain live until June, when the Society will add further resources, including those aimed at Early Years students, where a professional storyteller will outline the life cycle of a mushroom to an animated background.



ABOVE: The team put together videos and resources for several Key Stages studying the world of fungi for the Great Science Share.



ABOVE: The Society's Education Manager Ayesha Meredith-Lewis (with OCR's Ruth Carter) spoke about the development of the new GCSE in Natural History at the BGEN conference at RHS Wisley.

BGEN AT RHS WISLEY

On 12 January Ayesha attended the Botanical Gardens Education Network (BGEN) conference at RHS Wisley.

Organisations like the Eden Project and Chester Zoo were in attendance, with a view to helping all organisations provoke more interest in the botanical world. Attendees included science communicators who have been researching ways of increasing engagement with, and interest in, the botanical field. Researchers who had recently started to pursue a career in botany gave talks about looking into different pathways into its study.

Education Manager Ayesha and Ruth Carter from OCR (a leading UK Awarding Body) spoke together about the future of botany, and how the upcoming GCSE qualification in Natural History could help to boost interest and engagement and increase personal interest in the subject in younger people. Discussions centred around changing attitudes towards plants. There is a decrease in pure botanical study, with botany only making up 5% of the syllabus for many university biology courses; the main interest is megafauna. Yet, the current climate crisis shows that botany is a core subject of study with regard to the food we eat and how plants support ecosystems. Ayesha and Ruth asked the audience what they would like to see included in the GCSE with reference to botany, and some great ideas were forthcoming, such as the inclusion of palaeobotany, the study of neolithic man and agriculture, and looking at climate change in relation to plants.

Ideas from this and additional discussions have been recorded, and will help inform OCR's development of curriculum content.

BLANCA HUERTAS FLS AND SEÑAL COLOMBIA

The Linnean Society has been part of a documentary for Colombia's public television station Señal Colombia.

The documentary, which has been broadcast in Colombia and other parts of the Americas, followed Blanca Huertas FLS in her work as a scientist in the UK, highlighting role models, women in STEM and diversity and inclusion in science, raising the Society's visibility in many Spanish-speaking countries.

Blanca filmed at several locations, including the Society, detailing both her career at London's Natural History Museum, where she is Senior Curator of Lepidoptera, and her work as a Trustee and Vice President of the Linnean Society. Congratulations, Blanca!



Welcome to New Staff

GEORGIA COWIE

Georgia joined the Society in January in the newly established role of Journal Officer. Having recently graduated from the University of Leeds and gaining a degree in Zoology, Georgia has gone on to gain charity work experience as a Monitoring and Evaluation Intern for UNEP-WCMC, as well as practical experience as a research intern investigating the effects of forest type on the behaviour of Thraupidae tanager species in Costa Rica.



Georgia says: 'I am eager to use the knowledge and skills I have developed to help raise awareness of the journals at numerous levels, encouraging young people to take an interest in nature in the process.' Please join us in welcoming Georgia.

DANIELLE CROWLEY

Dani joined in April 2023 as our Education Officer and has explored a range of roles in zoology and science communication, most recently as the Education and Communication Officer for the Irish Marine Institute's Explorers Education Programme. She's taken part in five offshore research cruises on Irish, French and English vessels, including a trip to Iceland on the RSS *Discovery* as a marine mammal observer.



As an artist and researcher of the intersection between culture and ecology, Dani is excited to use the wealth of history and science of the Society to inspire the public about nature, as well as highlight the stories of LGBTQ+ people and other marginalised groups. Welcome, Dani!

Bye-Laws Revision Update

An Extraordinary General Meeting (EGM) was held on 23 March 2023, to discuss and vote on approving the adoption of a new Charter and Bye-Laws for the Linnean Society. This comes after a three-month consultation with Fellows about the proposed Bye-Laws. We received 71 votes in total, by post and at the EGM itself, which was in-person and online. The results were: For: 67, Against: 1, Abstain: 3. The votes in favour met the threshold of two-thirds, and therefore the vote was carried. The Privy Council must now approve the Charter and Bye-Laws before they can come into effect, which is likely to be a matter of months.

Thank you to all of our Fellows for your involvement and support.

Tricorn Tidings

The first 300 days

As I write this, it has been just over ten months since I was elected President and took over the helm of this unique and wonderful Society. Having shadowed our previous President, Sandy Knapp for the last year (and having previously served on Council twice), I had anticipated that the biggest challenge of my new role might learning how to doff my hat (thanks to David Pescod for lessons!, *BELOW*), but I quickly learned otherwise. Between the drafting of new Bye-Laws, implementation of the last recommendations of our governance review, initiating development of a new strategy, launching a new journal, setting up an in-house editorial team, appointing new Editors-in-Chief for three journals, and continuing to negotiate with the Government to secure our long-term tenancy of Burlington House, I have barely had a chance to catch my breath! Fortunately, we have an extraordinary staff and Council to lead and support on these many initiatives, and it has been especially wonderful to have started this role just as we were reopening Burlington House to Fellows and visitors after two years of closure due to the pandemic. However, there have been many changes and challenges, and balancing what we want to do with what we can do has not been easy, particularly given the changing financial landscape.



Championing our Society

In contrast, the most effortless part of my role is to champion our Society, with the aim of attracting new members and

supporters and increasing our impact at local, national, and global scales. This comes easily because I believe strongly that the Linnean Society is an unusual and rare community that has much to offer anyone interested in the natural world, to say nothing of our magnificent collections, distinguished history and innovative programmes. What other learned society brings together



people from different backgrounds and sectors, all united by a shared passion for nature? As an example, I often relate the story of my first day as a Fellow of the Linnean Society. I had recently started as a new lecturer in evolutionary biology at University College London (before my more recent move to the Natural History Museum, or NHM), and I knew very few people in London. A colleague suggested I apply for fellowship, and at the library reception after I signed the Roll and Charter a group of long-standing Fellows invited me to dinner and immediately made me feel part of this community. That's something that has rarely come easily to me, as an Indian-American (now British too) woman in a scientific field where I am always an outlier, and it meant a great deal to me in those early years of settling into a new career and a new country. As President, and especially as the first person of colour in this role in the 235 years since this society was founded, I want to ensure that people from all backgrounds benefit from that same positive experience and have the opportunity to contribute to the distinctive community that forms our Society.

Our global reach

Growing and supporting a vibrant, diverse and engaged membership is also critical for fully leveraging our ability to inspire people around the world to protect nature. We all know that the biodiversity and climate crises threaten everything that we hold dear, and yet not nearly enough is being done to prevent further catastrophic effects. The Linnean Society, because of our global reach, the breadth of interests and expertise of our members, can and should play a key role in supporting and informing the research, education, policy and action needed to solve the environmental crisis. Our staff and

members are already leading the way with programmes that engage and educate the public and policymakers, but every one of us can and must do more. The Linnean Society is already synonymous with transformational changes in understanding the natural world, and by the time I pass on the hat, I hope we will be similarly associated with transformational changes for its protection.

Hope and Science



My own scientific interests often stretch far from the modern times, generally closer to the last mass extinction than to the looming one of our own creation. Alongside the many accomplishments in the Linnean Society over this past ten months, I had the bittersweet experience of completing a seven-and-a-half-year-long project on the evolution of the vertebrate skull. It's striking to recall that I was considered early in my career when it started—in fact, I was awarded the Bicentenary Medal in 2016, in the first year of the project. A photograph from that evening shows me (heavily pregnant with my second child), alongside the late Georgina Mace, one of the greatest and most influential scientists of our time and that year's Linnean Medal winner, and Thomas Halliday, who won the John C. Marsden Medal and is now winning many more awards for his amazing book *Otherlands: A World in the Making*.

In the years since this photo was taken, I have been engrossed in trying to reconstruct the evolution of diversity in vertebrates. This involved my NHM team and I travelling around the world to over 50 institutions, collecting data from specimens spanning over 300 million years of evolutionary history, and ultimately analysing thousands of specimens to understand the underlying factors as to why species evolve the way they do. Members of my team focussed on different

clades, but I kept my favourite group, mammals, for myself. Inevitably, I overestimated how much time I would have to gather and analyse a massive dataset while running a lab, whilst overseeing postgraduate education at the NHM and raising two small children. It wasn't until the first COVID-19 lockdown, before online meetings became commonplace and before homeschooling was taken very seriously, that I found time to concentrate on the immense task of analysing all the data we had gathered, culminating in a paper that graced the cover of *Science* a few months ago.

The cover image of Hope—the blue whale that hangs in the NHM's Hintze Hall and a specimen in our study—invokes many emotions for me. This particular photograph was taken during lockdown, when the NHM, like Burlington House and many other places from which I draw inspiration, was closed. Hope hanging alone in an empty hall in the middle of the day perfectly captures the immense loneliness of that period, which few of us will ever forget. One of the results of the analysis poured salt on that wound by demonstrating that social mammals evolve faster than solitary ones, which felt very much like a cruel joke while running analyses alone in my loft, without the usual banter and brainstorming of colleagues and lab members. However, that discovery, extracted from deep in time, will help us understand why different species may have divergent responses to changes in their environment. With this new knowledge, we can more accurately predict future outcomes and then work with policymakers and conservationists to develop targeted plans to mitigate the effects of climate change and habitat destruction. And we must engage with the public to demand that those actions are then taken to prevent human-driven extinction. Of course, I don't know how to do any of that myself, but I know a place where I can meet people who do—and I look forward to seeing you all there.

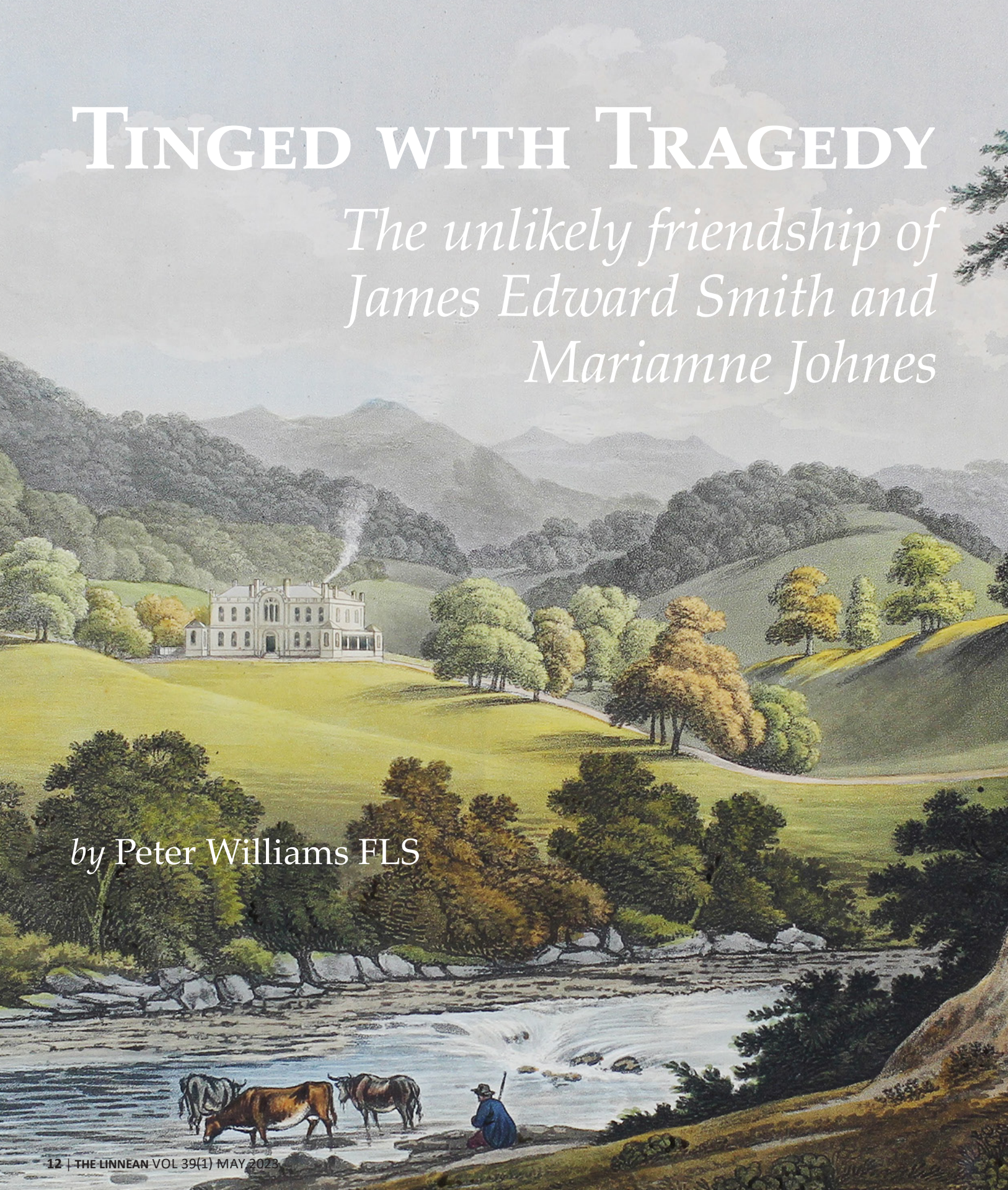


Anjali Goswami
President of the Linnean Society of London
president@linnean.org

TINGED WITH TRAGEDY

*The unlikely friendship of
James Edward Smith and
Mariamne Johnes*

by Peter Williams FLS



Though Mariamne Johnes (1784–1811) had only a relatively short life, dying at just 27, she enjoyed a close friendship with the Linnean Society’s founder, James Edward Smith (1759–1828), who admired her enthusiasm for natural history. She lived with her wealthy parents, Thomas and Jane Johnes, in West Wales. Thomas (1748–1816) was an MP and Lord Lieutenant of Cardiganshire and the owner of Hafod Uchtryd, a large estate not far from Aberystwyth, during the latter part of the 18th/early 19th centuries. Thomas had inherited the land from his father, a wild paradise set amongst the Welsh countryside with ravines, natural waterfalls and woods. There, he set about creating a romantic landscape along fashionably picturesque lines. He also built a mansion in the grounds that was to house a significant library. Into this dramatic, rural environment Mariamne was born. She was a much-wanted child who delighted in collecting beetles, identifying flowers and studying the mosses and lichens that were to be found in abundance on the estate.

LEFT: An illustration of Mariamne’s home on the Hafod estate near Aberystwyth, Wales. From James Edward Smith’s *A Tour to Hafod* (1810).

Its fame as a location of wild beauty spread and Hafod became a place of pilgrimage amongst travellers and the literati of the day. Poets William Wordsworth and Samuel Taylor Coleridge came, as well as James Edward Smith whose book *A Sketch of a tour on the Continent in the years 1786 and 1787* (1793) had made a strong impression on Johnes. James Smith became a frequent guest at Hafod and was very taken with Mariamne who, at an early age, accompanied him on walks and displayed a precocious interest in the plants and insects to be found there. So strong was their mutual interest in botany and entomology that they became regular correspondents, exchanging specimens, drawings of plants (Mariamne was also a talented artist), and delighting in each other’s finds. Although a comprehensive flora of the area no longer exists (if indeed it was ever put together), we understand Mariamne was herself able to identify most of the plants on the estate herself and took an active interest in her father’s horticultural activities which included extensive tree planting and landscaping. She also learned much from the estate gardener, Mr Todd, who had gained experience of plants and horticulture working in the Royal Botanic Garden, Edinburgh.

Letters from Mariamne to Smith, in beautiful copperplate writing, survive in the archives of the Linnean Society and serve to illustrate the strength of their relationship, this despite the disparity in their ages. Smith was 25 years older than Mariamne, but in many ways they were similar in character. Smith came from a well-off family, was home educated and had been fascinated by plants from an early age with access to botanical writings and floras. Mariamne, the only living child of wealthy parents, was likewise home tutored and able to immerse herself in the beautiful landscape of the lower Ystwyth Valley. Like many gentile daughters of wealthy families of the time, an interest in music, art and botany was encouraged. Thomas Johnes himself was a doting father who encouraged his daughter’s interest in such activities and commissioned Dr James Anderson to design a flower and shrub garden within the estate specifically for Mariamne’s use.

What Mariamne lacked were companions of a similar age. Society in the Ystwyth Valley was sharply divided between the aristocratic, English-speaking landowners and the local, poor mining community of Cwmystwyth who spoke Welsh with little formal education. Small wonder Mariamne gravitated towards older, educated men like Smith who shared her passion for natural history. Smith saw her as ‘an example of early ardour’, while Mariamne described herself in her letters to him as his ‘affectionate little friend’. James Smith not only corresponded directly with Mariamne but wrote and received frequent letters from her father, who kept him apprised of his daughter’s health and

53 26
 Received April 12th 1796
 My Dear D^r Smith
 I should have answered
 your Letter ere this, but apprehensive
 I should become a troublesome Correspon-
 dent, made me defer that pleasure. I
 must now beg you will accept my most
 grateful thanks for your last kind favor
 & for the great trouble you have taken
 about my Cabinet. I am likewise in-
 finitely oblig'd to you for so kindly wishing

to send me a living Tortoise, it is a
 thing that I have not the least desire
 to have, therefore, I must beg you will
 not give yourself any further trouble
 about it. I have sent you by this post
 a drawing of some very Curious old
 gold things found in a Field near
 Dolecotby. Papa thinks they must
 have belonged to some of the old Romans
 who had great works there. Papa has
 given me leave to go with my Aunt Eliza

ABOVE: Letters from Mariamne to Smith survive in the Smith Correspondence within the Society's archives. In this letter from April 1796, she writes to Smith, gently deterring him from his offer of sending her a live tortoise for her 'Cabinet': 'it is a thing that I have not the least desire to have, therefore, I must beg you will not give yourself any further trouble about it.'

RIGHT: James Edward Smith at about 30 years old; Smith was slightly older than this when corresponding with both Thomas and Mariamne Johnes. (In pencil and red crayon by Anna Louisa Lane.)

OPPOSITE PAGE: A simple etching of Mariamne Johnes, from a miniature.



activities. Mariamne and Smith believed that the real study of botany did not simply involve categorising the names of different plants, but lay in discovering the affinities between plants, as well as their medicinal properties. This was particularly pertinent in Mariamne's case as she suffered from frequent bouts of ill health, something on which Smith, having had a background in medicine, often advised. Mariamne had an underlining spinal curvature (scoliosis) and needed a brace to improve her posture. There were periods when she was immobilised and was sent elsewhere to improve her health, but there were other times when her health improved to the extent that she was able to walk for several miles within the estate, as well as finding enjoyment in her garden. However, the family had to countenance a major setback. Their home was destroyed by fire in 1807. The library, with its valuable books and documents, was lost, and while her father instituted a re-build, the family had to decamp while the work was being done. It was a severe blow to the entire family. Mariamne's relationship with Smith didn't flag however, despite the disruption and the fact he got married and went to live in Norwich, a considerable distance from Hafod. Their correspondence proved to be important in sustaining her interest in natural history. On one occasion he offered her a tortoise as a companion, but Mariamne turned it down, preferring to send him specimens and drawings and accounts of what was happening locally, with frequent expressions of hope that he would again visit the family when the new house was built.

Sadly, the bouts of ill health continued, ultimately resulting in her premature death in 1811. The cause remains uncertain, but it is known that scoliosis can compromise lung and heart function. Her father was devastated and went into a decline, as did the estate, which was eventually sold.

In her short life, Mariamne had displayed an unusual talent and enthusiasm which could easily have made her a botanist of distinction, but it was James Edward Smith who largely encouraged her in the pursuit of fulfilment through natural history. He was as devoted to her as her own parents were and remained a friend throughout her life. A statue to her memory, fashioned by the sculptor of the day, Sir Francis Chantry, was commissioned by her parents and stood in the local church, Eglwys Newydd, until it too was damaged by fire in 1932.



Peter Williams FLS (peter.r.williams@btinternet.com)

Acknowledgements

I am grateful to the Linnean Society's Archivist, Liz McGow, for directing me to the catalogue of letters between James Edward Smith and the Johnes family, and for showing me some of Mariamne's own letters. I was helped too by Tom Kennett's excellent account of the life of James Edward Smith and correspondence about the estate, as well as Smith's own account of Hafod in *A Tour of Hafod in Cardiganshire: The seat of Thomas Johnes*.

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Letters of Mariamne Johnes (GB/110/1/336) in the Linnean Society archives.

An Extensive & Choice Collection

A Botanical Mystery in Three Volumes

by Janet Ashdown

RIGHT: A page from one of our mystery volumes. Volume two, shown here, houses specimens numbered 484–1,034, of a total 2,208. The pages are beautifully laid out and labelled, but what is the true purpose of this herbarium?

Conservator Janet Ashdown tells the story of an unusual item that has come into the Society's possession—can you help us with this mystery? Who put this beautiful herbarium together, and why? And where is the missing volume?

Setting the scene

In 2015, botanical artist Claire Dalby donated a number of books to the Linnean Society's library, in accordance with her late husband Kery's will; Kery Dalby was a lichenologist and had been a Fellow of the Society since 1957. Amongst his collections was a set of three herbarium albums that he had been given by his colleague, Frederick Whitehead FLS (b. 1913). Frederick had been a reader in taxonomy at Imperial College, London and, before that, at the University of Oxford. It is not known how or when Frederick acquired the albums.

In the years that followed, Kery tried to discover the provenance of the albums, but without success. Claire was at a loss as to what to do with them and asked if I would take them back with me to the Linnean Society, in the hope that a suitable home could be found for them.

The only information we have with regard to the provenance of the albums is a label on the cover of album one, stating, 'Herbarium, an extensive and choice collection of Dried Flowers & Plants. 2280 specimens – collected and carefully mounted by a late Eminent Botanist'. This suggests that the label was perhaps made by someone other than the author. There are also stamps in each volume from the 'Science & Art Department Educational Library'—a library at Imperial College that was closed in 1899.

The albums, measuring 530 mm long, 345 mm wide and 35 mm deep, are constructed in a pamphlet style and covered in plain, handmade, heavy paper covers (perhaps flax paper). There are approximately 50 pages per volume, which are numbered one, two and four, indicating a missing third volume. The specimens themselves have now been numbered: volume one contains specimens 1–483, volume 2, specimens 484–1,038 and volume four, specimens 1,039–1,583. Using the aforementioned total outlined on the label for volume one ('2,280'), it shows that the missing volume should have 697 specimens. The pages in volumes two and four have been numbered by the author; volume one's pages are unnumbered.



689
Lavandula
 South of Europe 1868
spica



690
Galeopsis
 Britain
galeobdolon



691
Malva
 Spain Italy 1770
elusifolia



692
Geum
 Britain
urbanum



693
Gerbera
 Cap. 1765
rigens



694
Geranium
 Italy 1658
macrorrhizon



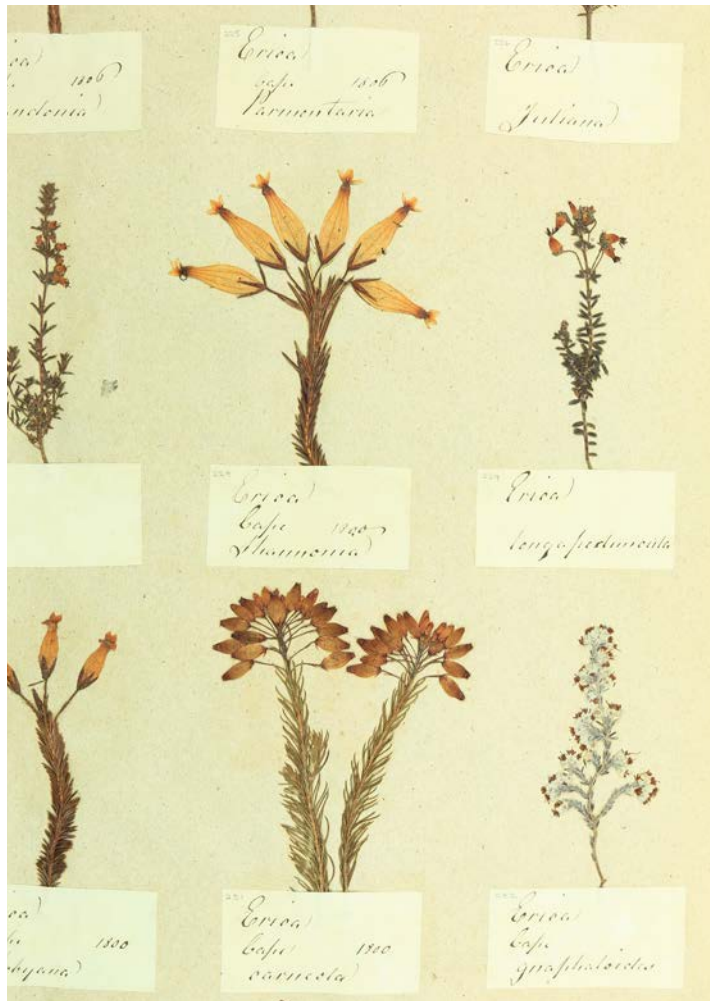
695
Solidago
 North America 1759
bicolor



696
Rubus
 North America 1774
odoratus



697
Paspiflora
 Tennessee 1791
muricata



ABOVE: Initial research began with the *Erica* specimens in the herbarium, as their introduction to the UK might assist with dating the albums.

The initial assessment

In consultation with the Linnean Society's Honorary Botanical Curator, Mark Spencer, and members of the Linnean Society Collections Committee, it was decided to accept these volumes on the basis that they were considered to be of significant interest. As the Society does not usually accept donations of biological material, except those relating directly to Carl Linnaeus (1707–1778) or founder James Edward Smith (1759–1828), it was recommended that their provenance be ascertained in the hope of finding a more suitable repository. And perhaps the missing third volume would come to light! Additionally, a suggestion that the collection should be kept as a teaching resource for educational purposes was declined as they were considered too important.

Starting research

To begin with, a small sample of the collection was listed on a spreadsheet to enable initial research. The Ericaceae were selected as their origins in South Africa's Cape Province might help with dating the albums. Later, the entire contents of the three volumes were added to the spreadsheet.

In the following months our botanical curator, Mark Spencer, botanist Mark Watson from the Royal Botanic Gardens Edinburgh (RBGE) and Charles Nelson studied the data and the albums in the hope of finding an approximate date and purpose. The following suggestions were put forward:

PURPOSE OF THE ALBUMS

Is it the collection of a botanist? This was considered unlikely as the order is non-scientific and there are many cultivated plants. The physical arrangement on the pages leans more towards artistic display.

Could it be a nurseryman's catalogue? Before photography, horticulturalists would advertise their plants with the use of dried mounted specimens. However, in contrast to the volumes under discussion, these were often in a smaller and more portable format.

A training collection? Perhaps these specimens could have been collected by a student gardener.

A hobbyist's collection? If this were to be the case, it would be the collection of someone of means or well-connected, as many of the plants identified would only have been found in special collections (e.g. botanic gardens and stately homes). There was a suggestion that, contemporarily, the artistic arrangement of specimens might make it more likely to be a woman.

DATE

Some of the *Erica* specimens are from the Cape of Good Hope, so the date the plants were collected could be between 1770 at the earliest and 1806 at the latest. It would have taken a few years for the plants to become established enough to allow the taking of specimens. There was a period after the original specimens came from the Cape when newly-established plants died and it was some years before they were reintroduced. A more in-depth analysis of the specimens might shed further light on a possible date.

A more detailed analysis

WHY?

Charles Nelson FLS studied the volumes and realised that due to the large proportion of small fragments in bloom (of plants from the southern hemisphere, most of which were grown by enthusiasts in British gardens in the early decades of the 19th century), as well as the more common garden plants and information that can be deemed 'habitat' data, this collection seemed to be based on plants cultivated in British gardens. He also noted that the arrangement of the plants is usually quite random, although some are grouped by generic names, e.g. *Erica*, *Aster* and *Saxifraga*. The plants are arranged on the pages according to size, shape, etc., usually with 12 per page, and the albums are very carefully prepared, perhaps to be admired or as a catalogue.

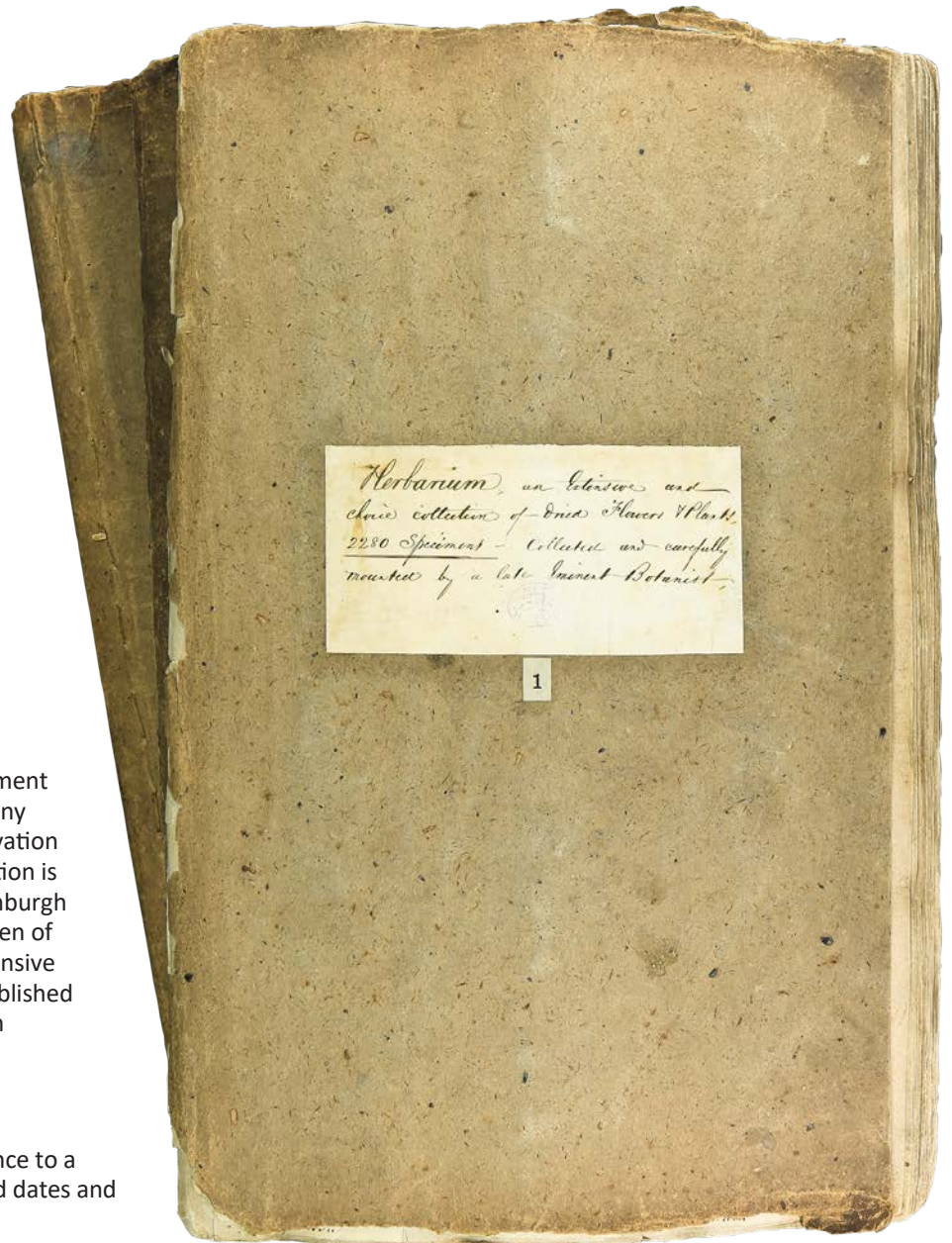
Some of the plants were contemporarily expensive, so removing even a small fragment to press would have been a 'sacrifice'. Many required a glasshouse for successful cultivation in Britain, so it is probable that the collection is from a botanic garden such as that in Edinburgh or the royal garden at Kew, the large garden of a wealthy owner (Woburn has a very extensive collection of *Erica*, for example, with a published catalogue), or one of the top-rank London nurseries.

WHEN?

The author named the plants with reference to a labelled collection and probably extracted dates and localities from *Hortus Kewensis* (ed. 2.).

The dates on the labels relate to the date of introduction to Britain. Given that the plants are in flower, they would have required several years of growth to become established before these specimens could have been taken (especially the *Erica* and the Australian shrubs). The estimated period of the albums is therefore the 1820s, though dating the paper might also establish a date before which they could not have been made.

Mark Watson suggested that someone might recognise a particular specimen as only having been cultivated at a certain location at that time—this applies to many of the *Erica* specimens (most of which died out in the 1830s and 1840s). One of them was labelled 'bandoniana', a name that was not published before 1808. Other *Erica* names can easily be compared with Nelson and Small's *International Register of Heather Names*, to obtain dates of publication, all of which are likely to be post-introduction dates.



ABOVE: Initial research began with the *Erica* specimens in the herbarium, as their introduction to the UK might assist with dating the albums.



ABOVE: Not all entries are specimens; shown here is *Sempervivum arachnoideum*, taken from William Curtis's *The botanical magazine* (vol. 2, pl. 69, 1788). To cut up *The botanical magazine* in this way is an indication of extravagance.

Additionally, a small cutting of printed paper found between the pages of the first volume contained the line 'keenest labors of the toilsome plain'. Charles Nelson discovered two versions of this line from a poem by Henry James Pye (1744–1813) printed in 1778 and 1787. In the absence of any watermarks on the album pages this may give an indication of the earliest date possible, assuming the fragment was from one of these two editions and that it was inserted by the author.

AND FINALLY, WHO?

Charles also observed that many of the introduced plants are from Australia and South Africa. There are a large number of *Erica* specimens—could this be botanist Richard Anthony Salisbury's (1761–1829) collection?

Another name suggested in connection with the albums is William McNab (1780–1848) who worked at Kew (1801–1810), and then Edinburgh (1810–1848), and had a particular interest in the Ericaceae. However RGBE librarian, Graham Hardy, notes that the handwriting on the labels is not that of McNab.

Could it be the herbarium of James Niven (1776–1827), whose *Erica* collection is at Kew? Charles Nelson doubts it, as Niven used numbers rather than names, and his main collection was left to his grandson. It is unlikely he would have made a secondary randomly arranged collection.

Charles also suggested nurseryman John Kennedy (1759–1842) of Lee & Kennedy in London, or his son-in-law Henry Cranke Andrews (1794–1830). Nurseryman George Loddiges (1786–1846) might also be a candidate. Any of these men could be the 'eminent botanist'.

Reopening the investigation

The proposals so far are based on the *Erica* specimens in the collection but now that all the specimens have been listed, more ideas may emerge. Sadly, the COVID-19 pandemic halted the original train of enquiries, but in publishing this article we hope to resurrect the quest to discover the mystery 'eminent botanist', and to locate the missing third album.

Janet Ashdown, Conservator (janet@linnean.org)

Note: A spreadsheet of all the specimens in the albums is available on request. If any reader can help with information or has suggestions, please email Janet at the address shown above.

Acknowledgements

Very many thanks to the following for their investigative insights, notes and contributions—Charles Nelson FLS, Henry Noltie FLS, Mark Spencer FLS, Mark Watson FLS and Graham Hardy.

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Hail to the *Chiefs*

As our long-serving Editors-in-Chief of the *Botanical Journal of the Linnean Society*, *Zoological Journal of the Linnean Society* and *Biological Journal of the Linnean Society* step down in 2023, we wanted to pay tribute to their many fantastic achievements. Read, in their own words, about their favourite aspects of the role and how our journals have progressed.



PROFESSOR MICHAEL F. FAY

Editor-in-Chief, *Botanical Journal of the Linnean Society* (2008–2023)

Could you share a bit about your background, and what inspired you to seek out a scientific career?

I'm from just outside Manchester, and as a small child we had a very inspirational family friend who was a keen plants person, named Amy. Amy encouraged me in that it was okay to be interested in plants. She was a Latin teacher, so we used to talk about plants by their Latin names and take snippets of plants home to identify. I can even remember the first bee orchid I ever saw, and where I saw it. That's how I got started in botany.

I went to university in Aberystwyth, Wales, where I studied agricultural botany with a specialisation in genetics; a careers advisor had thought that forging a career in pure botany would be difficult. I stayed on and did my PhD at the Welsh Plant Breeding Station (now the Institute of Biological, Environmental and Rural Sciences) on wild species of clover. I later applied for a job at the Royal Botanic Gardens, Kew, in 1986, and I've been there ever since. I was originally employed to be in charge of the micropropagation unit (using in vitro techniques for propagating plants), but I was fascinated by the stories of these plants, and why they needed this help. It was normally because they were rare species, like the jellyfish tree (*Medusagyne oppositifolia*) from the Seychelles. When molecular systematics began at Kew, with technology including DNA sequencing and fingerprinting, we realised there were opportunities to study the genetics of these plants and advise on how best to conserve them. I moved to this new unit in the mid-1990s as a trial.

You have a long history with the organisation, becoming a Fellow in 1990, elected to Council three times and chosen as Vice President in 2006. You were also awarded the Society's Bicentenary Medal in 2000—what did that mean to you?

Having moved 'sideways' from working in the living collections at Kew to science, it was very significant in the sense that it helped people to take me seriously in this new field. It was also the first external award I'd received and hugely important. My parents were incredibly proud—as a gift, they bought me a restored 1814 edition of Society founder James Edward Smith's *An Introduction to Physiological and Systematical Botany*. They probably paid more for it than any other book they'd ever bought, and it is a very valued possession. When the Society started the AdoptLINN book conservation scheme,



we adopted several books, one being a book about the flora of Denmark—it was written in Latin, so celebrated Amy, who had also encouraged me to spend time as an exchange student in Denmark. It tied everything together.

You took over as Editor of the *Botanical Journal of the Linnean Society* (*BotJLS*) in 2008. How did that come about?

I took over from Stephen Jury. I had worked for the Commonwealth Agricultural Bureau which published abstract journals; I wrote abstracts in English, translated from Scandinavian languages. I had also been the Editor-in-Chief of Faba Bean abstracts in the 1980s, so I had a background in editorial work.

In the broadest sense, scientific outreach is part of my work and Kew encourages its staff to be on editorial boards; I was a member of the editorial board for *Annals of Botany*, but I stepped down from this to become Editor of *BotJLS*.

The journal's Impact Factor (IF) was 1.3 at that time, but by 2018 it had risen to 3.124. How much does Impact Factor come into play when you're reading through submitted papers?

It had been explained that there was a disparity between the IFs of the three journals, so during the first two years I did focus on soliciting papers to boost it, like publishing Angiosperm Phylogeny Group (APG) III in 2009. *BotJLS* is an international journal, rather than a British one, so is a great platform, and an increased IF then attracts more high-quality papers.

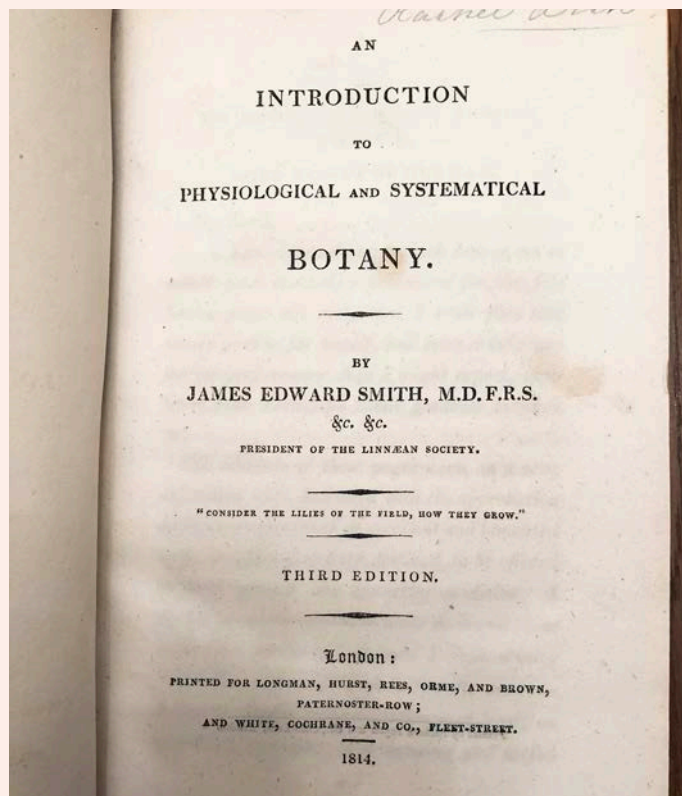
What role do you think altmetrics will play in the future?

Impact Factors are easier to predict, and people in certain countries receive supplementary payments depending on the IF of the journals they publish in. We're still at an early stage with altmetrics and we have no real control over it. Though sometimes it *can* be predicted—for example, a paper about holly leaves only retaining prickles at lower levels, where animals can browse them, was published just before Christmas so we knew it would do well on social media; it was also an early paper dealing with epigenetics. Another paper on cord-forming Palaeozoic fungi in terrestrial assemblages was the top scoring paper for three years on social media, possibly because it was a 'controversial' organism (there was debate over whether it is a fungus or a plant), and for some reason I still haven't got to the bottom of, it was picked up by television!

Have there been any special issues that you're particularly fond of?

For Darwin's bicentenary in 2009 I commissioned reviews from authors on Darwin as a botanist, rather than as an evolutionary scientist. We had papers on the pollination of orchids, oceanic islands, climbing plants... It was a really fun project and we published seven reviews which were then bundled together in a special issue in 2010. The editorial was written by Maarten Christenhusz, who was an Associate Editor (and photographed images for one of the papers), Mark Chase (the Society's Editorial Secretary) and myself, so there was a very 'Editorial Committee' feel to it.

In 2022, three of my Associate Editors—all women from Brazil—brought together 25 papers on Neotropical biodiversity (with a focus on plants) for a special issue. It demonstrated the diversity of not just the papers but the Editorial Board. One of the things I'm proud of is that we've gone from a very male, English-speaking board to one that spans six continents (c. 30 countries), and is about 40% women.



Going forward, how would you like to see the journal develop?

Something I've been keen to continue is the publication of longer papers on comparative anatomy of large groups of plants, continuing the work of people like Sherwin Carlquist. It's an important thing that we've been able to offer, and can help improve the visibility of the journal.

I was a latecomer to social media but once I started, I managed to drive our Twitter following up to over 3,400. Going forward we're centralising the social media across the journals which I think will really help.

Maintaining an active Associate Editor group, and generally bringing in bright young people, is great for the journal. Inviting review papers early in a person's career is a skill that I would advise any Editor-in-Chief to develop.

Lastly, I don't accept a paper unless I've read it, and I think this is something that has been appreciated by authors in the past. Of course, doing detailed editorial work can take you away from the further development of the journal. Working with the team at both the Society and our publishers to make sure the quality is high is important, as there is scope for the journals to go onto greater things.

DR MAARTEN CHRISTENHUSZ

Editor-in-Chief, *Zoological Journal of the Linnean Society* (2019–2023)

What drew you to studying the life sciences?

I was raised in a town called Hengelo in the countryside of the eastern Netherlands. My father was active with the Scouts and we would always be out in the forest and camping. My paternal grandmother was also very into nature and she would collect wild plants, planting them in her own garden to show to me. (I would actually go on to write a children's book about this, *Nan's Flower Garden*, in English and Dutch in 2018.) As a teenager I was active with the IVN (the Institute for Nature Education), who organised tours with specialists to see birds, or to identify mushrooms—great fun and this further inspired my interest in biology.

I went on to study biology at Utrecht University. I really wanted to study birds, but I was also fascinated by evolution, and in this regard plants are much easier to study. You can look at their morphology up close and study their interactions more easily—plants are key organisms. I did my thesis on the history of botany on a collection of plants brought to the Netherlands from Japan in the 19th century by Philipp Franz von Siebold (1796–1866). I still needed a final Master thesis subject and my professor showed me an old leatherbound book, which turned out to be the oldest dried plant collection from the Low Countries, dated 1566 and collected by an apothecary named Petrus Cadé. The perfect thesis subject.

Where did your career go from there?

I took a position at the University of Turku in Finland where I studied Amazonian ferns (Marattiaceae). The team was looking at soil gradients using satellite imagery; understory plants were collected which were abundant and could be part of quantitative studies. Soil samples were taken, and ferns and palm seedlings were collected—my job was to identify and research the ferns. I completed my PhD doing field work all over South America and the Caribbean. I then worked for Dr Sandy Knapp at the Natural History Museum, London, on the Flora Mesoamericana project in 2008–2010. In my spare time I founded and edited the journal *Phytotaxa*. From 2011 I was hired by the University of Helsinki to curate their botanical garden collections. Eventually I moved back to the UK and worked on projects at the Royal Botanic Gardens, Kew, including co-writing the book, *Plants of the World* (2017).



What led to you taking on the Editor role of the *Zoological Journal of the Linnean Society* (ZooJLS) in 2019?

The previous Editor, Dr Louise Allcock, had done an amazing job but wanted to step down. Calls had been put out but there had not been a viable candidate. I had already been working on the *Botanical Journal of the Linnean Society* (BotJLS) so understood all the processes. I had to learn the Zoological Code and shadowed Louise who has always been helpful, as well as expand the Editorial Board using my network. They helped me to make the journal a success. I was teaching on a NERC DTP field course and when we started the journal's social media the zoological students on the course enjoyed being involved with this. Several went on to become Fellows.

The Impact Factor when you started was 2.685 in 2019, and by 2022 was 3.834—what do you bear in mind when choosing papers?

We are just choosing the best papers that we think will be cited. There are some that we publish on lesser known animal groups that we know are excellent but will receive less attention. One way to help the Impact Factor is with special

issues or with good editorials that cite these lesser-known papers. Referencing papers on Wikipedia can also help, but can be time consuming.

Which highly cited papers have been a pleasant surprise for you?

Papers on tardigrades have performed very well, but one that springs to mind is a paper by lead author Marianne Nyegaard describing a new species of sunfish (*Mola tecta*) found in New Zealand, published in 2017. It had been accepted under the Editorship of Louise, but I then published a follow-up paper when the same species showed up in California, which was picked up by the news. We also had papers by David Norman on *Scelidosaurus*, one of the earliest dinosaur species found in Britain. David redescribed it and placed it into a phylogeny, and it turned out to be a transition form between *Stegosaurus* and *Ankylosaurus*.

Do you have a favourite special issue that you have been a part of?

I really liked the one we published on animal song, with papers outlining new species based on their song, from a frog, to a bird, to a fish! Ross Ziegelmeier (Multimedia Content Producer) put together an amazing ‘animal symphony’. That issue was great fun to do.

What role does social media play in the future of the journal?

It is important to be visible, and visual, on social media as the next generation is getting all of their information from social media. This is time-consuming but necessary. It is also one of the ways to recruit papers. Ross Brooks wrote a paper for the *ZooJLS* looking at same-sex sexual behaviours in nature in ‘Darwin’s closet: the queer sides of *The descent of man* (1871)’ in 2021, that coincided with LGBT+ History Month, with a follow up in 2022, both of which did very well on social media. Review papers are also great for the journal as all of the information is in one place which makes it easier to cite and share on social media.

You are getting about two papers submitted per day—have you noticed any trends?

I noticed during the pandemic that we started receiving a good number of papers dealing with the deep sea—these researchers could continue their work because they use remotely operated vehicles (ROVs), controlled from the shore. The *ZooJLS* is also one of the few relatively high-ranking zoological journals that still publishes new species.

What have been some highlights, and what are your ideas for the future?

I really liked the paper published about the bite force of the sabre-toothed tiger; it was one of the first papers that was promoted by the Society with an animation on YouTube. With Rachel Przeslawski, I also produced an editorial on deep-sea discoveries in 2022 which was very enjoyable to work on.

In the future it would be interesting to explore more regarding LGBT+ in biology, both on sexuality in animals, and on the historical role of LGBT+ scientists. Also, when students write their theses, they often provide an overview of their topic of research, which make great review papers. This will involve the next generation of scientists in publishing. And finally, Open Access is brilliant in practice—we all want research to be freely available online, but OA fees can eat into research budgets. Maybe authors should be paid for good copy in the future? Some universities pay their researcher for published papers, but this is not the case everywhere. The *ZooJLS* receives submissions from many independent researchers and from almost every country in the world.

PROFESSOR JOHN A. ALLEN

Editor-in-Chief, *Biological Journal of the Linnean Society* (1997–2023)

Can you tell us a little bit about your background?

I was born in Reading in Berkshire in 1946 and educated there, before studying zoology (in the area of population genetics) at the University of Edinburgh in Scotland. After meeting my wife Eleanor, who was studying geography, we decided to move to the tropics. I had two applications accepted at the same time—one at the University of Freetown, Sierra Leone, the other at the University of Dar es Salam in Tanzania. We chose Tanzania and had a fantastic time, living there for five years. They were my formative years in teaching, and there was so much biodiversity to work on. In the end, I focused on snails and butterflies. After various twists and tales, I got a job at the University of Southampton, where I stayed until I retired! I was lucky: not only was I teaching and trying to do research, I then became Editor of the *Biological Journal of the Linnean Society* (*BioJLS*).

You became Editor in 1997—how did that come about?

I had been a contributor to the journal, and was attracted to it partly because of its association with Sam Berry, who was an



active member of the Population Genetics Group, which still thrives today. I had edited a special issue of the journal for him on frequency-dependent selection. In June 1997, I took over from David Lees, who was Editor-in-Chief at that time.

What were your ambitions for the journal?

The thing that I hated most was that things were done so manually—copies of manuscripts in Jiffy bags were sent in from the authors, referees were found, cover notes were sorted and sent—then everything was revised, sent back and forwarded in batches to the publisher for setting—Academic Press in those days. I could see that there were larger technological changes taking place, so when the opportunity arose around 2006, I jumped at the chance to try Manuscript Central. It just revolutionised everything.

What else have you seen change?

The number of submitted papers increased, and at one point (around 2015–2017) it was at about 600 a year. This coincided with a peak in special issues; we now produce more of these than ever before. There was a time when so many manuscripts were being submitted that I considered limiting the numbers concerned with ecomorphology (adaptive morphological changes in species), but in retrospect continuing to accept them paid off, and we even had a virtual issue on the subject.

I also wanted to make sure that guest editors received the right recognition, which is something we do well across the journals.

You were an early adopter of social media as a tool to promote the journal. What impact has it had?

In my opinion it hasn't traditionally attracted authors, but it has been good for engaging the public with the journal. However, I do think that it will have more of an impact on future authors who engage with scientific research online. Regarding papers that have caused a stir, there was one published that posed the question 'Does the sixth mass extinction really exist?' (i.e. caused by human activity) and it received a lot of attention. I feel I've been quite receptive to more controversial papers. You have to take risks.

Thinking about special issues and virtual issues, are there any that you are particularly proud of?

There was one special issue that looked at palaeontological species and related organisms across the Wealden in the south of England. I had noticed in the University of Southampton weekly bulletin that there was going to be a conference on this subject at the Oceanography Centre. The whole special issue was based on the Isle of Wight: 'Dinosaur Island'. To my amazement, someone who had been at the conference asked me to write a paper about my father's work—he was a well-known Wealden geologist—which was then reviewed and included. Every special issue I have really enjoyed being involved with—I found it fascinating dealing with all the guest editors and watching their special issues come to fruition.

During your time as editor, what have been your highlights, and would you have done anything differently?

I haven't used Associate Editors in the way that our other journals do; authors dealt directly with me and as a result, papers could be processed quickly. However, Associate Editors and the publishers have provided essential support in challenging situations concerning publication ethics. Above all, I always had good relationships with authors and reviewers—I was quite informal in how I wrote to people to engender warmth and I strived to make them feel valued. Being an editor is a very responsible but enjoyable role! I wouldn't have done anything differently.

An introduction to the newly-appointed Editors-in-Chief will appear in the next issue of The Linnean

Medal and Award Winners 2023

‘The Linnean Society of London has celebrated excellence in science since it awarded the first Linnean Medals to Joseph Hooker and Richard Owen in 1888. Since then, the Society’s awards have grown, and encompass achievement in areas both inside and outside of academia—achievements that have furthered our knowledge of the natural world.

This year we had many nominees, which gives a heartening insight into the incredible work being done in the field, in the lab and with the public all over the world. Our 2023 winners represent innovative thinking, inspiring breakthroughs and just an all-round vibrant passion for understanding nature, and protecting it. We offer our warmest congratulations to all of them.’

Professor Anjali Goswami, President

Linnean Medal (for services to science)

PROFESSOR SANDRA DÍAZ

‘Natural history weaves together natural science, social science, arts and lots of passion. In the face of the challenges of today, natural history is more relevant than ever, to the point of becoming indispensable. I feel immensely honoured by this award, and very humbled, looking at the list of previous awardees, which includes several of my most admired scientists.’

Professor Sandra Díaz is a globally renowned plant ecologist, whose work on functional traits has changed the way we look at how plants partition resources and adapt to their environments. She was one of the first to show that function and benefits of an ecosystem are better predicted by the combination of organisms and their specific traits, known as ‘functional trait diversity’. In 2019, Díaz was named by *Nature* as one of the ‘ten people who mattered in science’.



Image: Daniel M. Cáceres

Darwin-Wallace Medal (for major advances in evolutionary biology)

PROFESSOR ZIHENG YANG FRS

'I am extremely honoured to receive the Darwin-Wallace Medal from the Linnean Society of London. It is humbling to receive such a great compliment from this prestigious society.'

Professor Ziheng Yang FRS has made unparalleled contributions to evolutionary biology, with his original insights and methods underpinning almost all research that uses genetic information to understand species divergence, adaptation and gene flow. Yang has invented a multitude of novel statistical models and methods for comparative analyses of sequence data that are now the foundation of the standard toolkit in molecular evolutionary biology.



Bicentenary Medal (in recognition of the work of a biologist under 40)

DR TANISHA WILLIAMS

'I am overwhelmed with gratitude to have been selected to receive the Bicentenary Medal from the Linnean Society of London. I am accepting this award with great honour and continuing to task myself with advocating for and advancing great science and service.'

Dr Tanisha Williams's doctoral work studied the response of South African Pelargonium species to climate change, including a substantial portion doing fieldwork abroad and generating an impressive long-term phenological dataset from a century's worth of herbarium collections. She has since won several awards for her work in science and outreach, having expanded plant-related research opportunities for students through her expertise in climate change biology and population genomics, as well as making it more inclusive for those who are otherwise marginalised in its study.



Trail-Crisp Award (for an outstanding contribution to biological microscopy)

DR LARA GONZÁLEZ CARRETERO

'I am deeply honoured to receive the prestigious Trail-Crisp Award from the Linnean Society of London. I am incredibly happy and grateful for this recognition of my work.'

Dr Lara González Carretero's work on charred cereal foods for her 2020 PhD provided a breakthrough for archaeobotany. The carbonised remains of food have proved stubbornly resistant to identification, but González Carretero was able to establish clear and replicable criteria to identify cereal species under the microscope. Her best-known work concerns bread material from Jordan that represents the world's oldest known to date.



Irene Manton Prize (for the best doctoral thesis in botany, in a UK university)

DR BROGAN HARRIS

'It is an honour to receive the Irene Manton Prize and to be recognised for contributions to plant sciences. The work would not have been possible without the enthusiasm and effort of my fantastic supervisors and collaborators.'

Dr Brogan Harris's research on the hotly debated topic of the evolution of stomata concluded that bryophytes form a monophyletic group, rather than a paraphyletic grade, resolving a significant controversy. His research also suggests that the first embryophytes possessed stomata that were more sophisticated than previously thought. Harris's research has changed the way we think about early land plant evolution.

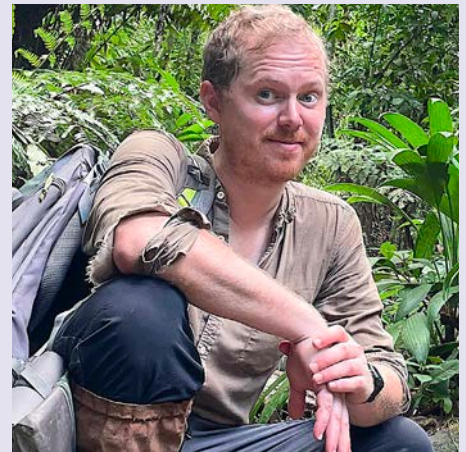


John C. Marsden Medal (for the best doctoral thesis in biology, in a UK university)

DR TOMOS POTTER

'I am delighted, honoured and humbled to receive the John C. Marsden Medal. I am very grateful to my thesis supervisors Tim Coulson and Ron Bassar for their guidance, and also to David Reznick, Joe Travis, and Anja Felmy for their invaluable support. Thanks too to the guppies, for being such fascinating little creatures!'

Dr Tomos Potter's PhD involved complex statistical analyses of observational data, and theoretical modelling. Studying the freshwater stream ecosystem of Northern Trinidad, his focus was on guppies. This work revealed how eco-evolutionary feedback could result in environmental impacts on phenotypic trait expression and cryptic evolution, and involved the analysis of one of the largest pedigrees ever constructed for a free-living population of fish; it is destined to become a classic.



H. H. Bloomer Award (awarded to an amateur naturalist for their contribution to biology)

DR MARGARET E. BRADSHAW MBE

'To be told I had been awarded this Medal came as a complete surprise. I was surprised that my efforts to encourage people to conserve the Special Flora of Teesdale [in Northern England] had been noticed by a Fellow of the Linnean Society. I look forward to receiving it. I thank the Linnean Society for bestowing this honour upon me.'

Dr Margaret E. Bradshaw MBE is a nationally renowned amateur botanist, known for her work in plant conservation. Aged 96, she has devoted much of her life to the study and conservation of the rare flora of Upper Teesdale (an SSSI in Country Durham, England). The data she has collected is invaluable and shows there has been a decline in important rare species in the locality since she began in the 1970s.



Jill Smythies Award (for outstanding diagnostic illustrations in botanical art)

SUE WICKISON

'I am overwhelmed, humbled, excited and absolutely delighted to receive the Jill Smythies Award. It means so much to me, but reflects the knowledge, encouragement and inspiration from the various people I have been lucky to work with over the years, so is a team effort.'

Sue Wickison is an extremely accomplished botanical artist with field experience in many areas, namely the Solomon Islands, where she collected and recorded orchids. She has also worked on endangered species, depicting their life cycles, and has most recently illustrated Kew's *The Plants of the Qur'an: History and Culture* by Dr Shahina Ghazanfar, with an accompanying exhibition running until Sunday 17 September at the Shirley Sherwood Gallery of Botanical Art.



John Spedan Lewis Emerging Leader Award for the UK Natural Environment (for initiatives that have had a notable positive impact for the UK natural environment)

KWESIA (CITY GIRL IN NATURE)

'I am delighted to receive the John Spedan Lewis Emerging Leader Award for my work in engaging communities with the natural environment. Too often, members of my community feel excluded and marginalised from the green spaces around them, yet it is often these very same places that bring joy and healing to our lives. This award gives me the encouragement and motivation to keep enabling these opportunities, and to keep telling stories of nature empowerment for all.'

Growing up in inner-city London, Kwesia underwent many challenges, including homelessness. A British Exploring Society expedition to the Peruvian Amazon allowed her to encounter nature in a way that presented positive opportunities, forming bonds with fellow nature enthusiasts. As a result, Kwesia developed 'City Girl in Nature', and became a 'nature connection activist', establishing a YouTube channel, website and social media presence to help others from her community connect with the natural world.

Images: Mysterex, Sam Lynch

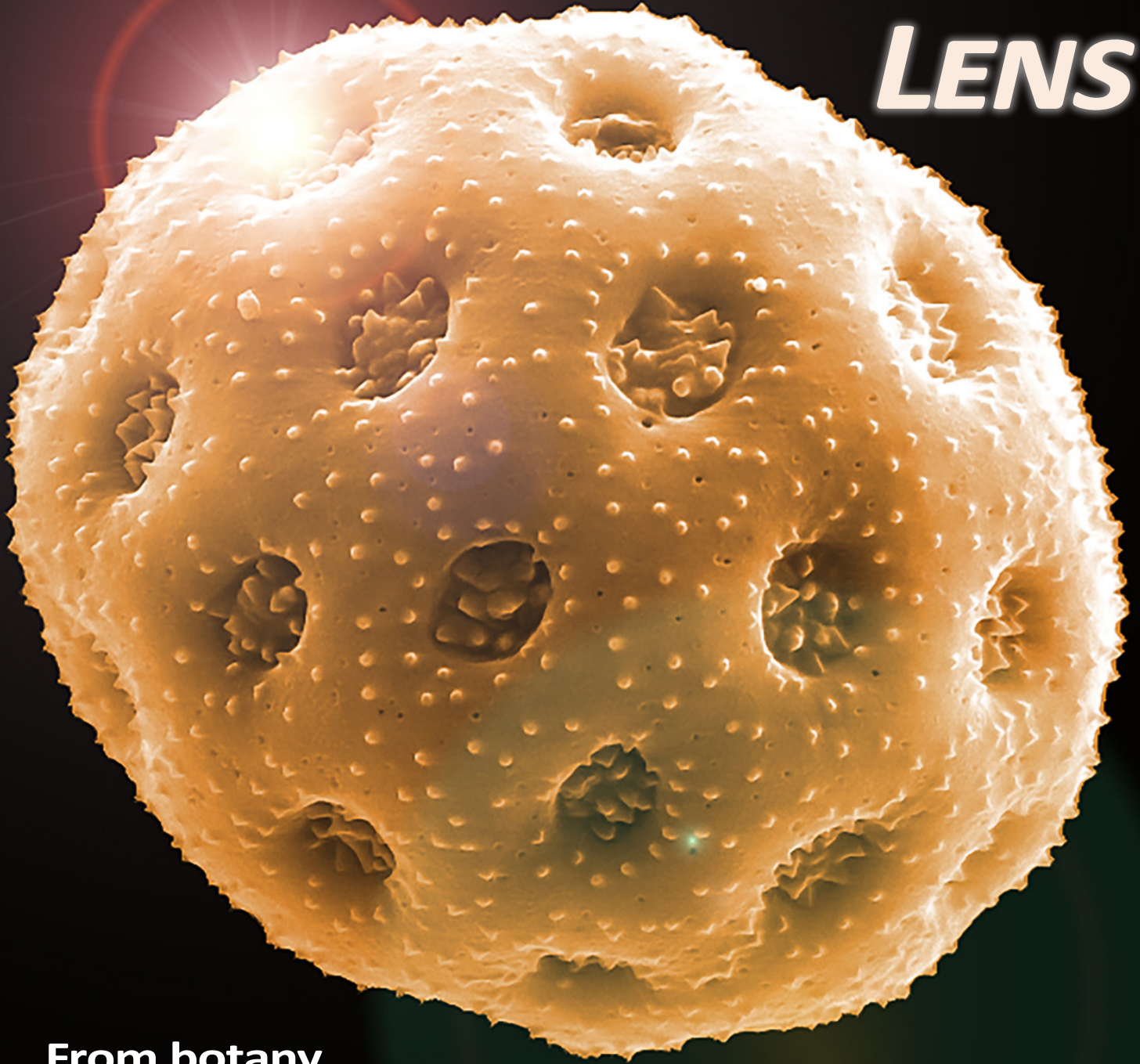


Congratulations to all of our winners, and thanks to our members for their nominations!

ALL MEDALS AND AWARDS WILL BE OFFICIALLY PRESENTED AT THE SOCIETY'S AGM/ANNIVERSARY MEETING ON 24 MAY.

MEDAL AND AWARD NOMINATIONS FOR 2024 WILL OPEN AT THE ANNIVERSARY MEETING. VISIT WWW.LINNEAN.ORG/MEDALS TO NOMINATE.

LIFE THROUGH A LENS



**From botany
and heart valves to
yaks and exhibitions**

by Frieda Christie

PREVIOUS PAGE: A *Silene* pollen grain, under the microscope.

BELOW: Frieda Christie at the Society's Anniversary Meeting in May 2022, receiving the Trail-Crisp Medal for her contribution to microscopy.

Frieda Christie, winner of the Trail-Crisp Medal in 2022, takes us through her career in microscopy.

As a student on the biology degree course at Stirling University in Scotland I spent hours every week in practical sessions learning how to set up and use microscopes, as well as illustrating and interpreting what I saw. I also gained some experience using a transmission electron microscope (TEM) and was fascinated with the idea that this microscope could enable me to see things so far beyond the naked eye.

From the time I started university in 1979 to my graduation, the UK unemployment rate rose from 5% to 11.5%, so in order to make myself more employable I felt I should leave university with some practical skill as well as a degree. When it came to choosing my final year project, I sought one that allowed me to develop my microscopy skills. My task was to study the ciliate protozoan *Blepharisma* using light microscopy and TEM. This might have been straightforward, were it not for the fact that *Blepharisma* has pigment granules in its outer surface layer (or pellicle) which are extruded when exposed to bright light, killing the organism. Moreover, I had few references and my chosen growth medium almost wiped out the cultures. Somehow, I had to take photos of live cells while trying not to kill them and the few cells that remained were to be sectioned for TEM. Several lucky TEM action shots of granules erupting from the organism gave me enough to finish the project. Needless to say, I would not have succeeded without the assistance of the technical staff who trained, advised and encouraged me when things didn't go well. In particular, Tom Forrest, who has remained a good friend, and Tim Christie, who I later married!

Encouragement to learn

I graduated in 1983, straight to the end of the unemployment queue. I spent 12 months searching for that elusive first job. While unemployed, I took up weight training to keep fit and pass the time, and at one interview the interviewer mentioned she had picked out my application because she was interested to see what a weight trainer looked like! At 5 feet tall (1.52 m) and 98 lbs I don't think I was what she was expecting, but I got the job, packed my bags and headed south to London.

My first full-time job was as an electron microscopy technician in the Histopathology Department at St



George's Hospital in Tooting. A small TEM unit had been mothballed for several years, and my job was to open it up and get it all working again. For a graduate's first job I thought I'd struck gold. The unit comprised several workspaces for the preparation of samples, and a separate room for the Zeiss 109R TEM, a wonderful bright orange microscope that required a vacuum 'bake out' once a week and needed new filaments almost as often. The unit was situated in the basement of the hospital, located between the library and the mortuary so there wasn't much conversation. However, it was there that I honed my skills in preparing and sectioning material for TEM. Most of the samples were renal, breast or skin biopsies, each material requiring specific treatment. I was fortunate to be mentored by experienced technical and clinical staff who shared their knowledge and encouraged me to learn.



ABOVE: An SEM image of an *Acropyle pancheri* female cone.

A change of scene

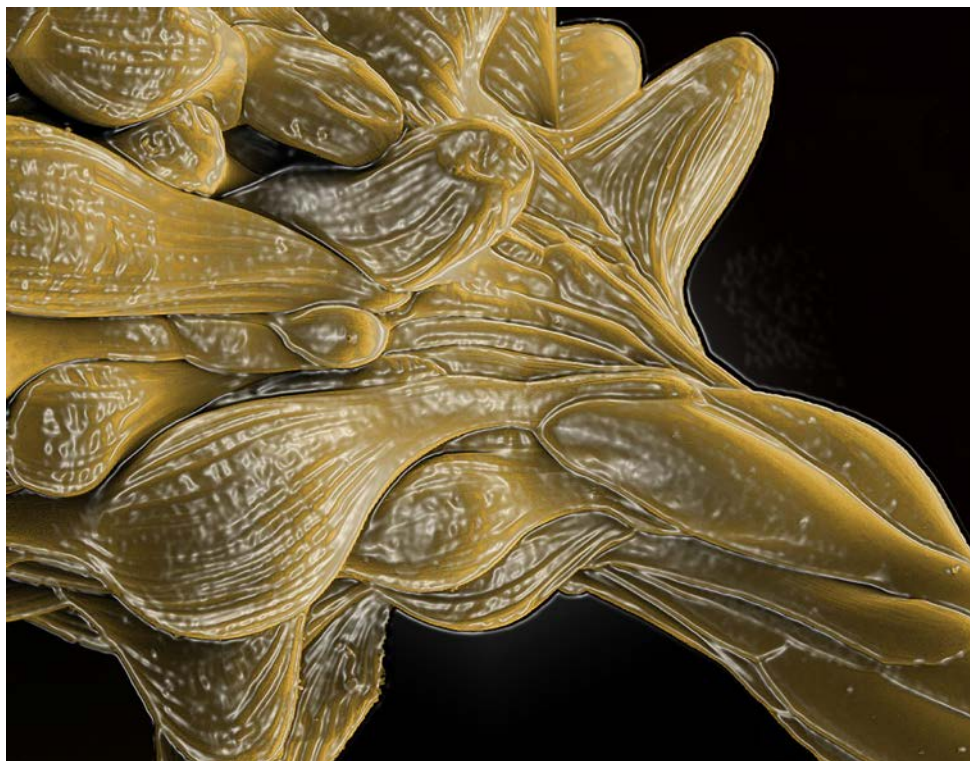
I really enjoyed my time in London but my upcoming wedding drew me back to Scotland. In 1985 I started work in an analytical lab at a maltings in Haddington, East Lothian. There, I spent my time carrying out tasks such as measuring starch damage in grain using Farrand units, checking fermentabilities with a gravity bottle and trying hard not to be frightened of the Kjeldahl apparatus which was used to boil up samples with sulphuric acid to assess protein levels.

The work was interesting, particularly during harvest when wagons queued outside the maltings, waiting for the lab technician to confirm their loads of barley or wheat met the standard for tipping! However I missed microscopy, so in 1988 I took a gamble and accepted a six-month MRC contract at the University of Edinburgh's Royal Dick Vet School.

I joined a research group that focussed on tracing neural pathways of the spinal cord using immunohistochemical techniques for TEM. Fortunately, my contract was extended by five years and during that time I worked closely with Dr David Maxwell developing methods of staining post-embedded ultra-thin sections using immunogold labelling. David was always generous with his time and ready to explain a subject I often found difficult to understand. As a result, this period was very productive, and we co-authored papers in several highly-regarded journals.

Royal Botanic Garden, Edinburgh

My MRC contract ended in 1993 so it was time to look for a new challenge. Fortunately for me, the Royal Botanic Garden, Edinburgh (RBGE) had just completed a million-pound upgrade to their laboratory facilities and were looking for a microscopist to run their new EM Suite housing both transmission and scanning electron microscopes (SEM). I had spent years working with TEM but my experience of SEM was limited to a small project I carried out at St George's Hospital assessing the



ABOVE: Magnificent magnification—the beauty of an SEM image of an *Aeschynanthus tricolor* seed.

SciArt opportunities and outreach

In the course of my career, I occasionally came across natural structures that were beautiful to look at, and in 1997 I submitted a couple of SEM micrographs to the Royal Microscopical Society for possible inclusion in their calendar. I was thrilled when one of the images was used on the cover of the Society's journal. After that, I started to use Photoshop to introduce colour to the images. This unveiled a new aspect to my job and led me to collaborate with artists on various SciArt projects and increased my science outreach work, which I always enjoyed. One career highlight was when my 'Beaming Down on Botany' exhibition of SEM images toured several venues around Scotland in 2000, including the prestigious Kelvingrove Art Gallery and Museum, Glasgow. I also had periodic success in scientific image competitions, which helped publicise the research being carried out at RBGE.

Inspiring the next generation

As microscopy lab manager, I often trained and advised people in microscopical techniques. Over the years I met everyone from work experience pupils from schools to post graduate students and visitors from all over the world who came to use the laboratory facilities at RBGE. I enjoyed introducing people to the wonders of the plant world at ultra-high magnification. It was always a pleasure to see their reaction, particularly if they hadn't used a microscope before.

I retired in 2021 after 28 years at RBGE, having been privileged to work in a career I have always enjoyed. In 2022 I was awarded the Trail-Crisp Medal which was huge honour and a lovely way to mark my retirement.

I would like to thank the Linnean Society for the opportunity to share my story, and I would also like to thank the many people who have helped me along the way.

potential use of pig pericardial muscle for replacement heart valves. The idea of maintaining an SEM and teaching others how to use it was quite daunting, and it was a very steep learning curve.

Much of my time at RBGE was occupied with carrying out projects on behalf of colleagues across the Garden. The work was varied and covered everything from TEM of algal cells and plant viruses to SEM of pollen and leaf scales. I worked closely with the Gesneriaceae research group and had an opportunity to use light and electron microscopy to study cytology, ontogeny, anatomy and plant evolution. I also carried out some external work, most memorably TEM of abnormal sperm samples from an under-productive breed of Himalayan yak.



A Bit of a Wild Ostrich Chase

Thomas Baines and the Great Tree-Aloe

by Glenn Benson FLS

During research into the provenance of Charles Darwin's vasculum (used on the voyage of the HMS *Beagle*), Glenn Benson, our Honorary Curator of Artefacts, came across this sketch of 'The Great Tree-Aloe of Damaraland' by Thomas Baines (1820–1875).

ABOVE: A close up of the sketch of 'The Great Tree Aloe of Damara Land' by Thomas Baines, 1861 (Linnean Society MS/147).

As a curator, I am interested in the provenance of the Society's artefacts, who created them and if possible, why. Linnean Lens, our popular online series of short presentations, has featured Charles Darwin's vasculum (<https://bit.ly/3N44K6W>) and I was curious to discover how this enigmatic artefact had come into our possession.



The Wynne connection

The vasculum was bequeathed to us by Brian Wynne (1848–1924) who, with his father, cared for the garden at the ‘The Mount’, the Darwin family home in Shrewsbury. Wynne became a Fellow of the Royal Horticultural Society in 1867, and went on to write for, establish and edit practical gardening magazines.

An important part of the vasculum’s story is an October 1925 letter in the Society’s archive (BL/7/22) from Brian Wynne’s daughter, Edith Mary Wynne (1873–1957). It details the items that her father wished to bequeath to the Society, though Brian Wynne was not a Fellow, so his decision as to why he did so remains a mystery. The letter lists the vasculum (given to Wynne by Charles Darwin’s sister, Susan Elizabeth (1803–1866)), a book by Thomas Baines about his travels in south-west Africa, a photograph of him, and his sketch of ‘The Great Tree-Aloe of Damaraland’. The latter items had belonged to James Flood FRHS (1835/7–1890); a botanist who travelled with Baines in Australia, and who was later a friend of Brian Wynne.

7 OCT. 1925.

Malvern Villa,
Camden Ave.,
Feltham,
Middlesex.
Oct. 7th 1925.

Dear Sir,

Before my father, the late Mr. Brian Wynne passed to the “Great Beyond” he expressed many wishes, and one of them was, that I, in his name, would ask you on behalf of the Linnean Society to accept his vasculum, a picture “The Great Tree Aloe of Damaraland” by Thomas Baines, and a book entitled “Explorations in South West Africa”, also by Thomas Baines, and a small portrait of Thomas Baines.

The vasculum was given to my father by the late Miss Sarah Darwin of ‘The Mount’, Shrewsbury when he was quite a young man, and was

* = Susan

one of his most prized treasures, it originally belonged to her brother, the late Charles Darwin, and was the one which he took with him on his famous voyage round the world in H. M. S. Beagle, which left England on Dec. 27th 1831 and returned on Oct. 2nd 1836.

The picture and book were given to my father by his very old friend the late Mr. James Flood, Mr. Baines fellow traveller.

It gives me the greatest pleasure to be able to carry out my father’s wish.

Believe me
yours truly
Edith M. Wynne.

Dr. Dighton Jackson.

TOP: Charles Darwin’s vasculum, given to the Society by Brian Wynne—‘one of his most prized treasures’; **ABOVE (LEFT AND RIGHT):** Edith Mary Wynne’s letter from 1925, explaining that her father (who was not a Fellow) wished to bequeath Darwin’s vasculum and Baines’s sketch to the Linnean Society: ‘It gives me the greatest pleasure to carry out my father’s wish.’

Thomas Baines the artist

Born John Thomas Baines in King's Lynn, Norfolk, in 1820, he left the market town at the tender age of 22 to South Africa, where he would work as a war artist. Also a skilled natural history artist and keen explorer, he would travel widely in southern Africa (perhaps most famously with David Livingstone (1813–1873) to Victoria Falls). Later, he explored Australia, where he was the artist on Augustus Gregory's (1819–1905) North Australian Expedition of the Australian interior, from Moreton Bay near Brisbane, to Adelaide. Baines River and Mount Baines carry his name.

Baines was a prolific, if not profitable artist, with nearly 4,000 works attributed to him. He was a diligent recorder, annotating his pictures with place and date, and often with the time of day, latitude and longitude. Sadly, in 1866 he was forced to sell 127 of his works at modest prices to his friend Robert White, admitting, 'it seems almost like parting with a greater part of myself'. His work also encompassed book illustrations, with several for Alfred Russel Wallace's *The Malay Archipelago* (1869), including the famous plate 'Ejecting an intruder', showing a python being unceremoniously extracted from Wallace's hut.

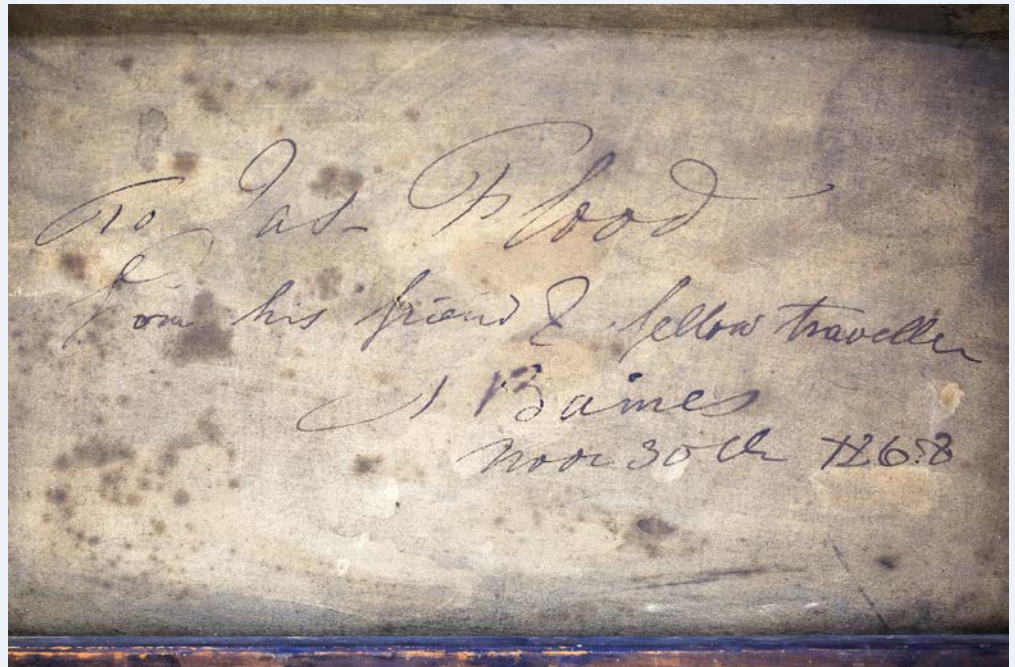
There are several biographies about Baines that recount his extensive travels through Australia and Africa. *Thomas Baines: An artist in the service of science in southern Africa* (1999) covers the life of Baines around the time the sketch of 'The Great Tree-Aloe' was undertaken.



The recipient, James Flood

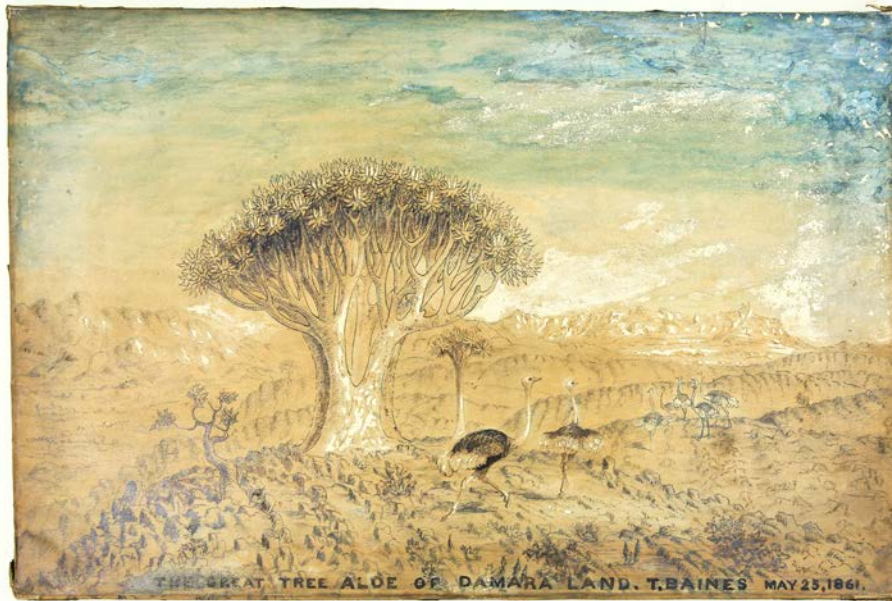
However, the same biographical output cannot be said of James Flood, friend to both Baines and Brian Wynne. Born on 15 April c. 1835/7 in Regent's Park, London, James and his father, John, assisted leading horticulturalist Robert Marnock FLS (1800–1889) in the layout, and later management of, the garden of the Royal Botanic Society within the park.

Flood, alongside Baines, also travelled with Augustus Gregory's 1855–1857 expedition to explore northern Australia. Aged 22, Flood was to assist in the collection of specimens for botanist Dr Ferdinand von Müller (1825–1896), who would himself become Director of the Royal Botanic Gardens, Melbourne after the expedition. Flood saw a good deal of Australia and spent time on the South Sea Islands before returning to London as Robert Marnock's clerk. By the early 1870s, Flood had joined the *The Garden*, a gardening journal launched by William Robinson FLS (1838–1935, proponent of the more informal cottage garden, as opposed to the very formal Victorian patterned gardens of the time). Flood was elected Fellow of the Royal Horticultural Society in March 1885, and would pass away just five years later on 4 May 1890.



TOP: Thomas Baines in 1866.

ABOVE: The inscription to James Flood on the reverse of the Society's sketch.



Spot the difference

In his book *Explorations in South-West Africa* (1864), Baines recounts seeing ‘the great tree-aloe’ (*Aloidendron barberae*) for the first time:

I noticed what seemed like an ordinary dragon tree, or baobab—a familiar object to the South African traveller. On approaching to sketch it more minutely, I found it was a gigantic aloe.

Though he hated making exact copies of his works (he claimed exact copies were usually failures), he did produce several versions of ‘The Great Tree-Aloe of Damaraland’. The main difference in each appears to be the number of ostriches present in the foreground!

The library of the Royal Botanic Gardens, Kew holds a much more finished version of ‘The Great Tree-Aloe of Damaraland’, painted in oil; it has seven ostriches under the tree, whereas the sketch in the Linnean Society has eight. Kew also holds a sketch by Baines...minus the ostriches.

All creatures great and small

Another version of the image, with just a single ostrich, appeared as a print to illustrate an article by Baines in the first volume of *Nature and Art* (1866):

I made the sketch which, without more artistic license than the interpolation of the solitary ostrich, is now placed in chromolithography before the reader (Baines 1866).

In it he recounts how, as he prepared to sketch the aloe, ‘I saw a troop of ostriches’.

Being fearful of the powerful birds, he hid until the ostriches were scared off by approaching wagons. Baines records that the circumference of ‘the great tree aloe’ was almost 3.6 m, the crown was 4.5 m from the ground, and the canopy some 6.1 m across. He uses the ostrich to add balance and show scale: the ostrich, the tallest and heaviest living bird, can reach 2.7 m in height and in the paintings is dwarfed by the great plant. And yet plant blindness operates even with larger species—during my research for this article, a museum (which shall remain nameless) had catalogued their copy of the 1866 chromolithograph as a print depicting ‘an ostrich’, with no mention of the enormous plant behind it.

In 1975, one century after his death, four different bronze medallions were struck, each marking a different period in the life of Thomas Baines. This one, depicting the ‘great tree-aloe’ and one single



TOP: The Society’s sketch, dated 25 May 1861.

ABOVE: A finished version in oil paint, held at the Royal Botanic Gardens, Kew.



ostrich, commemorates his time in what was then known as Damaraland, now Namibia.

I have chased ostriches across canvases, print and other media, and discovered the incredible life of a man of whom the singular term artist is not quite sufficient. However, it should also be acknowledged that contemporarily speaking, the story of Thomas Baines took place against a backdrop of colonialism, and the exploitation of the people and natural resources of Australia and southern Africa. Further

LEFT: Another version produced and published by Baines to illustrate an article in the first volume of *Nature and Art* (1866).

BELOW: This bronze medallion showing the 'great tree-aloe' and a single ostrich is one of a set of four, struck to commemorate the centenary of Baines's death.

investigation into his artistic output does capture some of this, but it also provides us with lasting images of the magnificence of the places, people, flora and fauna of these two giant continents.

Glenn Benson, Honorary Curator of Artefacts (g.benson@vam.ac.uk)

Acknowledgements

Thanks go to the Library and Archive staff of the Linnean Society for their help and patience in writing this article.

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If you are thinking of bequeathing something to the Society please read our collections and donations policy is here: <https://www.linnean.org/research-collections/donations-and-acquisitions>



PROFESSOR
GRENVILLE LLEWELLYN
LUCAS OBE HONFLS
(20 Dec 1935–12 Dec 2022)



Powerhouse plant conservationist and champion of the Linnean Society of London.

In December 2022 we learned of the unhappy news that our stalwart Treasurer of 20 years, Professor Grenville Llewellyn Lucas OBE, had passed away. It would be impossible to understate the impact that Gren had, not only on science at large, but on the Linnean Society of London and on members of its staff team. Amongst his myriad of well-known achievements (Keeper of the Herbarium at the Royal Botanic Gardens, Kew (RBGK), and making huge strides in plant conservation with the creation of the Kew Conservation Unit, which incorporated work on CITES) he was also known to give after-dinner talks for the Royal Horticultural Society's Chelsea Flower Show, and worked with Peter Scott on the development of the Barnes Wetland Centre (part of the Wildfowl and Wetlands Trust). Both Gren and his beloved wife Shirley were great supporters of the Surrey Naturalist's Trust (now Surrey Wildlife Trust), and Gren would be a part of the group advising on Nower Wood, a conservation area of ancient woodland that is now an education reserve. In 1980 he was rightly awarded an OBE for a lifetime of efforts in conservation.

LEFT: Gren Lucas, studying Carl Linnaeus's specimen of *Linnaea borealis* in the Society's strongroom.

The Society, through John Edmondson FLS, published an obituary on its website in December (www.linnean.org/GrenLucas). For this piece in *The Linnean*, we asked Professor David Cutler, Past President of the Linnean Society, colleague at RBGK and friend of Gren, to offer some personal stories and insights in remembrance.

I was delighted to be invited to offer some personal recollections of my friend and colleague, Professor Gren Lucas OBE, who sadly passed away on 12 December 2022. Extensive details of Gren's life and impressive career have appeared elsewhere in obituaries; these are my own reflections, and the memories of many others who were impacted by Gren will follow.

Gren the colleague

Gren was a great friend of mine for over 60 years. We were colleagues at the Royal Botanic Gardens, Kew, and I worked alongside him at the Linnean Society in the various offices we held.

Gren was a builder of bridges and worked effectively to bring together people in the different departments at Kew. This involvement extended beyond institutional issues, and he came to know many of the staff personally. When he and his wife Shirley knew that my wife, Sue, and I were looking to buy our first house, they invited us to their home in Ham and helped us with inside knowledge of the area—such was his concern for the welfare of others.



ABOVE: An older image of Gren (second from right) meeting with Past President Brian Gardiner (third from right) in the Society's foyer.

On that occasion I had a first glimpse of his very keen and informed interest in art, and later found that he supported and advised the botanical artists at Kew and further afield. He directly encouraged many young botanical artists and helped select candidates for the Jill Smythies award administered by the Linnean Society. Many of these people are now world famous.

As a colleague, it was essential to know how Gren conducted business when he was Keeper of the Herbarium at Kew. I often needed access to the herbarium collections for small samples for anatomical studies, or to ask for his support in collaborative projects. We had a messenger service in those days, and hand-written memoranda were sent via transit envelopes. I began to wonder if my requests had been lost across Kew Green because at first there was no response. It took on average three attempts before a reply came. Much later, Gren confessed that his method was to first 'file' items in the waste-paper basket, but if the sender was really serious and persisted, he would see if it was worth responding!

The leader

He managed in a paternalistic manner, both at Kew and as Treasurer of the Linnean Society. He knew his colleagues very well. His experience in the East African Herbarium, working with clever, competing and sometimes marginally eccentric colleagues fitted him well for both institutions. He was so well

informed and experienced in successful negotiations worldwide that he could often see several stages beyond the immediate aspirations of those he worked with. Many of them owe him a great debt in the development of their careers. Perhaps his management style would be stifled by today's perceptions and regulations—or would it?

The Treasurer

He kept a very close eye on the finances of the Society while Treasurer. He followed the stock market daily, and often told me how the investments were doing. He was always in touch with our fund managers and the excellent group of financial experts he had gathered as the Finance Committee. His suggestions were often acted on with little discussion, such was the respect he had earned. He was very successful in both ensuring that the relevant work of the Society developed and prospered, and the value of our investments grew steadily.

He was wary of allocating fixed budgets to the various sections and committees. While this wasn't always appreciated by the recipients, he always held enough in reserve to meet new needs when a good case was given, and money was spent wisely.

His many close personal friendships worldwide included people associated with potential sources of funding and that was undoubtedly a great asset. He was trusted and very well thought of as someone who could get things done. He lived through the ongoing threat of unaffordable rent for the Society, and remarkably managed to build up funds for supporting research into systematics, raise and allocate funds for redecoration, expansion of our accommodation to rooms above the archway, the provision of a lift and contingency reserves. All this was in addition to covering the normal costs of running the Society, adding to the library and other collections, and keeping our priceless historic collections and books secure, in excellent order and repair. He was a driving force behind the digitisation of the Society's collections and making them freely available online.

It is well worth looking at the glass ceiling in the lantern roof of the Library, and admiring the fine etched panes. Gren found out there were a few of the originals in the bowels of the basement, salvaged after bombing during World War II. His attention to detail, authenticity and prudent management means that we now have beautiful replicas in place, instead of post-war glass. He visited the basement on occasions when the boiler was dysfunctional and even struggled onto the roof from time to time; it wasn't the easiest of feats, requiring some acrobatic moves. His ventures there were usually related to water pouring through the Library ceiling and he wanted to find out first-hand what the problems were.

He would have liked to pass on his responsibilities as Treasurer much earlier than he did, but was devoted to working alongside a series of Presidents who greatly benefited from his knowledge, advice and support. In his retirement he gradually drew back from hands-on involvement in most of the bodies he had worked with over the years. His great passion for the Society and what it represents is reflected in the fact that he continued working with us to the end.

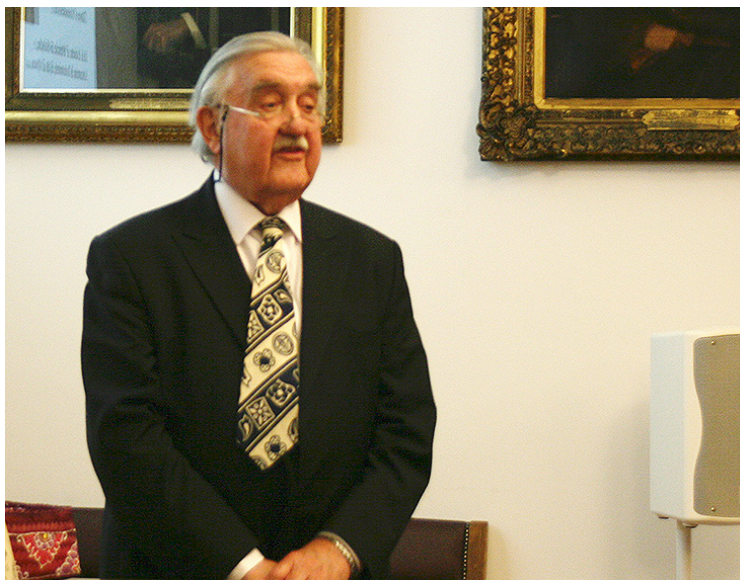


ABOVE: Then-President David Cutler presents a surprised Gren with the Society's Gold Medal at the 2007 Tercentenary celebrations.



Incidentally, Gren was so enthusiastic about most things that his written articles for publication by the Society, including financial reports, were peppered with exclamation marks that had to be edited out. I may have caught the bug myself...

Gren always prided himself on knowing about everything that was going on in the Society. As Treasurer, he could attend any of the committee meetings he wished and he made sure that he was available to staff, frequently talking with them. I can still remember his look of amazement and disbelief when I had the honour of presenting him with the Society's Gold Medal in 2007 at the Society's Tercentenary celebrations, for the exceptional work he had done for the Society over many years. He had no idea it was coming and afterwards quizzed me as to how it had escaped his radar.



The friend

He and Professor Keith Jones (Deputy Director of Kew and Keeper of the Jodrell Laboratory) developed a close friendship. When we were all retired, Keith would continue to invite us to his house for dinner, often in his garden. These were occasions of great reminiscences and insight into a wealth of experiences and many anecdotes. Of course, the old ways of doing things were so much better than they are now! It was there that we learned that Gren's early interest in chemistry led to youthful adventures in making minor explosives.

The last time we saw him, my wife Sue and I went for tea at his home late in 2022. Though he'd been ill on and off for some time, when we were leaving to walk along the path by the River Thames to Kingston train station he accompanied us on his electric buggy—even then we had to ask him to slow down!

TOP: Gren presents an award to his friend Sir David Attenborough HonMLS after his lecture 'Alfred Russel Wallace and the Birds of Paradise' at the Society's joint meeting with the Royal Society of Medicine in 2011.

ABOVE: Gren speaking at his retirement as the Society's Treasurer in 2016.

He will be fondly remembered

Gren was a cheerful, astute person with very wide knowledge and an excellent memory. He was always ready with interesting and humorous anecdotes and our journeys home from the Society on the Underground were never dull. He and our former President, the eminent botanist and Linnaean scholar Professor William Stearn, would often compete, and this would end up entertaining the whole carriage. It goes without saying that Committee meetings at the Society were always longer when Gren was there.

Through happy, challenging and sometimes worrying times at the Society, Gren could always be relied on for sound advice as a colleague. Most of all, he will be remembered as an enduring friend.

David Cutler, Past President of the Linnean Society of London (2006–2009)

Occasionally someone comes into your life and becomes the catalyst for good changes. Gren was one of those people for me...I met him after suffering from an illness that had left me at a very low point. He saw something in my artwork and encouraged me to submit an application to the Royal Horticultural Society (RHS). My work was accepted. Gren and I developed a strong friendship mostly by email. Although we occasionally spent time together when he came to stay with friends in Portugal.

He was my mentor throughout my first project for the RHS in 2021 for which I was awarded a gold medal. He continued to support and advise me during my present project of six paintings for the RHS which I'm hoping to exhibit next year. Sadly he didn't get to see the final painting fully completed.

Gren was a very special person with excellent eagle eyes and bundles of enthusiasm. He will be greatly missed. My sympathies and thought to Gren's family and friends on the passing of a very dear man.

TONI DADE, BOTANICAL ARTIST

Gren had a knack of making good things happen and was able to make connections with everyone. I have such positive memories of Gren, and I will never forget his pivotal role in supporting the decision that the Society would fund the Linnaeus Link project when I was struggling to get that agreed when the project was in its infancy. I send my prayers and thoughts to Gren's family and all his many friends through the Society family.

CAROL GOKCE, HEAD OF FUTURE DFE PROGRAMME MANAGEMENT

I and my colleagues linked to our little Saintpaulia Project are so very saddened by the loss of a wonderfully warm and kind supporter. Gren always found time for us when we visited the Society and was a constant correspondent when he retired. He was especially expert on East Africa with strong links to the research in Amani and the East African Herbarium, Nairobi. Artist Riziki Kateya was especially happy to exhibit in your library and the attached photograph demonstrates this.

We have jointly compiled 'A Maasai Artist on Safari' by Riziki and will publish it when her current work is included in the Wildlife Artist of the Year WAY 2023 and 2024 or perhaps sooner and I will suggest to Riziki that it should be dedicated to Gren.

It has been very wonderful to have had such support from the Society, your predecessors, Gren, Priya and Riziki's teacher Christabel King FLS.

COLIN WATKINS FLS

I first met Gren during his time with Plant Heritage, the charity responsible for National Plant Collections in the UK. He was a member of the first Council, was appointed a Trustee in 1982 and Vice President in 2002. We worked together as Trustees and his unfailing encouragement was inspirational. He loved to tell gardeners how wonderful they were when growing plants because he had spent all his working life with dead plants! Following our move to live in Portugal in 2004, we were lucky enough to have Gren (and his wife Shirley) visit us several times.

He was dedicated to demonstrating the need for plant conservation and the overwhelming importance of plants for people and the planet. His students at Kew are now at the forefront of plant conservation and they are a living testimony to his very special contribution to conservation.

ROSIE PEDDLE FLS VMM

When my Mother was in a care home in Sheffield we often stayed at a large commercial hotel nearby. One morning, on coming down to breakfast, we were amazed to see Gren and Shirley at an adjacent table. I do not remember why they were there but Gren was planning to take the opportunity to visit a local shop that specialised in embroidery materials. He needed to replace his own stock. I had not known about this and never saw any of his finished work, but he spoke enthusiastically about it as a relaxing and diverting activity.

Once I discussed with him the curious handedness of abutilon flowers (both on the same branch). He offered to give me some plants he had just grown from seed and I was to collect them at the Linnean Dining Club Anniversary Dinner to be



ABOVE: Gren with artist Riziki Kateya in 2012.

held at Kew soon that year. At the end of the evening I asked about the plants but he had forgotten to get them ready. Then, 'Hang on a minute!' The sight of him coming in from the dark, immaculate in black tie, dinner suit and muddy wellingtons, with plants in one hand and a garden fork in the other, was unforgettable.

DAVID PYE FLS

I was very fond of Gren. No one has done more for the Society over many years. I often think of us walking down Piccadilly to a second-hand bookshop to view a binding which had been suggested as suitable for the Society's copy of the 12th edition of Linnaeus's *Systema Naturae*. We met David Attenborough on the way. Gren and he welcomed each other warmly as old friends and I was introduced. Gren invited him to join us as we were having tea at Sotherens. Our mission was successful and we were able to enjoy Audubon's Birds of North America which had recently arrived. One of many happy fond memories.

SUSAN GOVE FLS, PAST-COLLECTIONS COMMITTEE CHAIR, LINNEAN SOCIETY



ABOVE: Gren checking the Society's historical medals and documents with Susan Gove FLS.

My first contact with the late Professor Grenville Lucas was in 1984 in Kew herbarium while I was doing my M.Sc. research in the first step of my career. He was then a great help and he had great influence in my admiration for the field of plant taxonomy. For that I am greatly indebted to him. Since then, our relation grew greatly through my frequent visits to Kew herbarium and the Linnean Society and he had always being there for me. One of his great reflections on my career was his valuable recommendation for me when he was chosen by my university (University of Khartoum-Sudan) as one of the assessors for my professorship status. I used to consult him a lot throughout my work with the Kew herbarium team in preparing the checklist of the wild plants of Sudan and South Sudan.

His absence as a great scientist is a great loss for everybody in the field of taxonomy and everyone belonging to this field internationally.

PROFESSOR MAHA A. KORDOFANI FLS, PLANT TAXONOMIST AND HERBARIUM CURATOR, UNIVERSITY OF KHARTOUM



ABOVE: With Maha Kordofani FLS at the *Conversazione* in 2012.

I first met Gren Lucas when I was just starting work for Max Nicholson and the International Biological Programme, which later had an office in the Linnean Society's basement. Gren then became part of my working life when I joined the Linnean Society as Librarian, remaining as a friend as we both retired.

My memories of Gren are varied, covering many interesting and unusual topics. For example, he casually revealed at our Library tea corner that his early career had involved exposure to potentially toxic fumes during laminate production, and fire risks. One company tested stiletto shoe heels, and another of his offices was found to have significant quantities of mercury beneath the floorboards! I remember him saying that when interviewing potential candidates for posts at the Royal Botanic Gardens, Kew, he always asked what they collected, appraising that collecting instinct irrespective of its focus.

An avid book collector, he was proud to have accumulated the full set of 29 Darwin Correspondence volumes and was eagerly waiting for the 30th. His papers from the IUCN Species Survival Commission are held by the Society and, with others, document the history of the worldwide efforts towards biodiversity conservation and

the key role he played. Gren's knowledge of the Library and Collections of the Society were the key to obtaining the funding for the Society digitisation projects for the Linnean letters and the specimen collections. His support for the internationally-important Linnaeus Link project has ensured its continuation as did his facilitation of the Linnean Society's role in establishing the European Botanical and Horticultural Libraries (EBHL) network. While we may have lost him, his achievements remain.

GINA DOUGLAS HONFLS, HONORARY ARCHIVIST AND PAST-LIBRARIAN, LINNEAN SOCIETY

As Head of Development for the Linnean Society of London (2006–2009) I had the privilege and pleasure of working closely with Gren Lucas. Gren was inspirational and always full of energy and ideas. In 2006, the Society began a programme of development and the President, Officers, Council and staff began the drive of major change as well as initiating plans for celebrating key anniversaries including the 300th anniversary of Linnaeus (2007), the 150th reading of the Darwin-Wallace paper on the theory of evolution (2008), Darwin 200 and the 250th anniversary of the Society's founder, Sir James Edward Smith.

Gren was integral to the planning and execution of all projects and provided the vision for the beautiful refurbishment of the premises which he tirelessly oversaw. No attention to detail was spared including the glass in the Library roof which was copied from a remaining piece of glass not destroyed by the bomb blast in the war. Notable projects included the substantial digitisation programme for all Society journals published since 1791, the 14,600 Linnaean taxonomic specimens and 20,000 botanical specimens of Sir James Edward Smith, and the conservation



ABOVE: Visiting good friends Alain Rzepecky and Rob and Rosie Peddle in Portugal.

and digitisation of the 4,000 letters written to Linnaeus from 600 correspondents worldwide. The Linnaean Plant Name Typification Project was completed in 2007 culminating in the publication of *Order Out of Chaos: Linnaean plant names and their types* (Jarvis 2007). All this was achieved by Gren's careful marshalling of funds and through fundraising initiatives, including support from the Fellows and a capital development programme.

It was a pleasure to meet up with Gren more recently at an evening reception at the Society, less mobile but as lively and inquisitive and engaged as ever. I am grateful for his mentorship and his friendship and for making my wonderful time at the Linnean Society intense, challenging and also great fun.

ELAINE SHAUGHNESSY FLS, LINNEAN SOCIETY TRUSTEE

What sadness to read of Gren's passing. Reading the tributes published, the full significance of his work struck me; the Linnean is not a wealthy Society yet under the guidance of Gren, it has accomplished much. His accomplishments are extraordinary and too many to list: the refurbishment and upgrade of our premises in Burlington House with installation of the new lift; room upgrades to allow for any potential growth in Room Hire; the securing of Mellon Foundation funding to finance the digitisation of the Societies Collections and records; the purchase of Toynbee House to provide premises for Society activities; protecting our Charitable Status by championing Educational Outreach; responding to legislative changes affecting our journals; the securing of an improved publishing deal that better underwrites Society finances...

There is no doubt much more to add, as these achievements just came off the top of my head whilst remembering and paying a mental tribute to Gren, and the privilege I had sitting on the Treasury Committee during part of his tenure.

JOHN BESWITH FLS, PAST-FINANCE COMMITTEE MEMBER

I have had the great pleasure and privilege to get to know Gren Lucas in 2017 Portugal where he used to come once or twice a year visiting our common friends Rosie and Rob Peddle. He was so humble and discreet about his many achievements, that gathering information about his rich career hasn't been easy. When he was in our greenhouse or in front of bookshelves, he still has that sparkle in the eye when seeing some specimen he used to see in the wild, when chatting about special features and strategies of adaptation to harsh environments, or when discovering a new book to purchase. He was a sweet man, very considerate, sharp, and I will always regret not having had enough time to question him about the IUCN and conservation challenges. My heartfelt condolences to his family, friends and colleagues, may peace be upon him.

ALAIN RZEPECKY

Gren's time as Keeper of the Herbarium at Kew was something of a golden age for taxonomy. He safeguarded the mutually enhancing roles of taxonomy and curation to good effect. More importantly he unfailingly supported, enabled, and developed the careers of his staff. Many, myself included, owe him a huge debt of thanks for his leadership and help. I will remember Gren's kind, generous, and warm personality.

DIANE BRIDSON FLS

We were deeply saddened to hear of Gren's passing. May his soul rest in peace, our thoughts and prayers are with his family. We knew Gren when he was Treasurer of the Linnean Society of London and our paths crossed many times when we visited the Society and when we organised a three-day international symposium on the 'Indus River; Biodiversity, Resources and Humankind' in 1993 at the Linnean Society. Gren was always welcoming and had a delightful sense of humour. He will be dearly missed by all his friends and colleagues.

AZRA MEADOWS FLS AND THE LATE PETER MEADOWS FLS

I heard the news of the death of Professor Gren Lucas with great sadness. But he will surely have re-joined the great cycle of nature and will take on his next exciting form in it.

I first met Gren when he couriered the Linnaean incoming correspondence to the Book & Paper Conservation Studio that I ran at Dundee University - it was part of the major conservation and re-housing project for the Linnean tercentenary. Although we worked in an academic environment, we had never met anyone like Gren - he discussed the letters and their writers, their conservation treatment, the pomegranate in art around the globe, and the elasticated waistbands of Marks & Spencer trousers with the same enthusiasm, knowledge and gusto. He was interested in absolutely everything! He wore his knowledge lightly and shared it generously, and it is a true privilege to have met him.

YLVA DAHNSJÖ FLS

I first met Gren in the early 1990s when I became involved with the Linnean Society, first as a member the Collections Committee and then Council. One evening, after drinks in the Library following a Society lecture, there was a word in my ear with Gren asking if I would allow my name to be put forward for election to what was then Zoological Secretary. Gren was integral to the Society, not just through his many years as Treasurer, but for the way he turned administration into an art form – it was a pleasure to see him operate. He got things done, persuasively and with charisma, and his prevailing and benign presence gave us all a sense of security and that the Society had a guiding presence. Our last communication was by email, after his hospitalisation in late 2021. Despite the seriousness of his condition, he wrote a breezy email, stoically

recounting his treatment, which was followed by a dose of COVID-19. He asked me to give his love to Dartmoor, where I live, and which he said he missed. All of us who knew Gren will certainly miss him as will the Linnean Society, which meant so much to him and to which he gave so freely.

MALCOLM SCOBLE FLS, PAST-SCIENTIFIC SECRETARY, LINNEAN SOCIETY

The first time I met professor Gren Lucas was during my first visit to the Linnean Society of London 2008. We became very good friends and wrote to each other via e-mail about everyday things as well as discussed interesting topics in the field of Linneana. He taught me how to make paper from the plant of *Cyperus papyrus*. In 2009, Gren Lucas became an honorary member of Swedish Linnaeus Society. I miss him lot. He was a very warm and caring person.

INGEMAR LUNDÉN FLS

Here in Uppsala there are many who sadly received the information about the death of Gren Lucas. I met him personally at the Linnean Society several times, and also here in Uppsala a few years ago, when the Swedish Linnaeus Society was celebrating its 100th birthday, and was very fond of him, as was everyone. I also know, of course, the important role he played when it came to put the Linnaean collections at the Linnean Society online, especially the Linnaean Correspondence. We have heard of him travelling to the University Library in Dundee, where the digitalization of the letters was performed, with two volumes at a time. He will be commemorated in the annual of the Swedish Linnaeus Society, *Svenska Linnésällskapets Årsskrift* (SLÅ).

EVA NYSTRÖM FLS

I was very sorry to learn of the passing of the great Gren Lucas, whom I considered a dear friend. He was an enthusiastic supporter of my writings, and published kind reviews of some of my books in *The Linnean* (in fact, that's how we met). His kindness, intelligence, and great sense of humour about life will be missed by many.

RICHARD MILNER FLS

I first met Gren in 2010 when I started working at the Society on a freelance project. During this time, with much credit going to Gren, the Library received a generous grant from the Andrew W. Mellon Foundation to conserve and digitise the Linnaean annotated library, the Alfred Russel Wallace notebooks, and the Buchanan-Hamilton watercolours. With this grant, the Society was able to purchase, for the first time, in-house digitisation equipment. Knowing my freelance project was coming to an end, and happy with the work I had been doing, Gren recommended that I take on the Digitisation

Project Officer role. He was very supportive during my first few years in the role, recognising the value of gaining on-the-job experience. He was always fascinated with the projects we continued to take on, and always took the time to ask lots of questions and really get to know what I was doing. Gren also recognised the importance of managing our growing digital collections, and it was his vocal support that led to the creation of my permanent role of Digital Assets Manager. While Gren's appearances at the Society became less frequent over the past few years, during those earlier years, I always felt I could speak to him about anything, and I would receive good, honest, supportive answers. But more importantly, we always just had lovely chats about anything and everything. It is Gren I have to thank for my now well-established career at the Society.

ANDREA DENEAU, DIGITAL ASSETS MANAGER, LINNEAN SOCIETY

I remember meeting Gren at my interview at the Natural History Museum in late 2005, for the role of bringing together all of Charlie Jarvis's fantastic work for his book *Order out of Chaos*. Gren was a friendly and generous man, and very keen to talk about book binding—not my field of expertise, but an enjoyable conversation nonetheless. After completing *Order...*, Gren offered me a role at the Linnean Society, where I would go on to produce many books and both our magazine *PuLSe* and newsletter *The Linnean*.

The thing about Gren was, he believed in people, which is more rare than you might think. He was a great master at harnessing the potential he saw, and making it something tangible. Years ago, I had put together a proposal with a colleague to launch the Society's first education programme, and we slipped it into his hands as he left Burlington House one day. He emailed us as soon as he got home, having read it on the train—I still remember his words, that he 'punched the air' and knew he had to find a way to make it happen. He did, and now we have a terrific education unit. All of his accolades and marvellous scientific endeavours aside, he was a powerhouse for people's potential and their development. On a more personal note, he gave my daughter her first bike. I will always remember that, and will miss him very much.

LEONIE BERWICK, PUBLICATIONS MANAGER, LINNEAN SOCIETY

Gren Lucas was a driving force behind a lot of the Linnean Society projects. Working at Kew, he could see what scientists needed from a Society like ours; he was not afraid to come up with ambitious projects for our collections, and was then adept at sourcing funding for them. I came onto the staff team for the last major Mellon Foundation grant we received, which included the digitisation, conservation and cataloguing of the Linnaean manuscripts. I owe Gren my dream job, working with the collections of the Linnean Society, and for that I will always be grateful. Gren endlessly championed projects like the Linnaean Plant Name Typification project, or the Linnaeus



ABOVE: At the Society's Tercentenary in 2007.

Link Union Catalogue—important projects that have made the Linnean Society what it is today.

ISABELLE CHARMANTIER FLS, HEAD OF COLLECTIONS, LINNEAN SOCIETY

I am so sad about the loss of Gren. Gren supported me so much in my PhD. His IUCN Red plant data book (1978) was an inspiration which I followed on my PhD, 40 years after its publication. He also supported me so much before my postgraduate studies and was the reason that I have been involved with the *Botanical Journal of the Linnean Society* for so long.

A beautiful and very welcoming human being! It was always a joyful moment to meet him at the Linnean Society; I remember every one because of the special way he welcomed me each time, and the way he appreciated my commitment to the Society.

My sincere condolences to his family and friends.

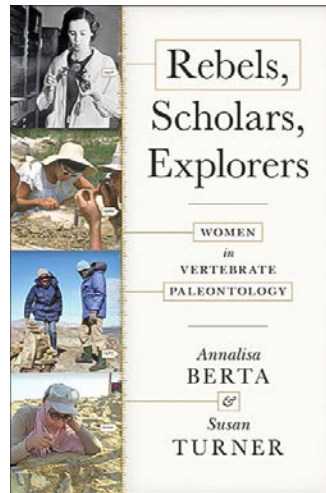
HASSAN RANKOU, JOURNAL EDITORIAL MANAGER, LINNEAN SOCIETY

Reviews

Rebels, Scholars, Explorers

Annalisa Berta and Susan Turner

352pp, Johns Hopkins University Press
2020 (Hardback)
ISBN 9781421439709
Bw illust. £37



Rebels, Scholars, Explorers is a long overdue publication highlighting the contributions made by women since the 18th century to the present day in the field of Vertebrate Palaeontology (VP). An enormous amount of effort has gone into capturing the names of, and what is known about, their amateur or professional lives over the time periods chosen. Present in every chapter is a table where the names of the women vertebrate paleontologists are arranged alphabetically, including their dates, country of origin and major contributions; this is followed by a brief description of what is known of the biography of each named individual arranged according to country—many of these make for fascinating reading, made even more so by their obscurity.

Most people will have heard of Mary Anning (1799–1847) in the early 19th century often considered the first woman vertebrate paleontologist, whose greatest contribution to VP was the discovery of a largely intact plesiosaur in 1824. This became an immediate international sensation; Georges Cuvier (1769–1832) even admitted to being wrong about the animal's structure and pronounced Anning's fossil a major discovery—the first plesiosaur—but nowhere in the description of this discovery is Anning's name mentioned. And this is the crux of this book—the fact that many women have made significant contributions for which they have received little-to-no recognition. This publication aims to right this obvious wrong. The role of women in both early and present day VP remains little known within a field dominated by men. A good example of the attitude of men to these early pioneering women is the comment of Martin Rudick

(1776–1848) who dismisses the contributions of women of 'all social classes', noting that 'their significance should not be forgotten, but neither should it be exaggerated in the interests of an anachronistic egalitarianism or in the name of political correctness'. With such comments it is little wonder that women's contributions to VP remained unheard of for so long, and that some women felt the need to emulate men to gain recognition. Two notable examples are Annie Alexander (1867–1950, plate 14 in the book) resplendent in breeches, tie, cowboy hat and carrying a pickaxe over one shoulder, and Pennilynn 'Penny' Higgins (plate 40) sporting a magnificent fake beard as part of the Bearded Lady Project, drawing attention to women in scientific fields stereotypically dominated by men.

Another major hurdle was the limited number of openings for women to study as undergraduates gaining graduate degrees, attaining membership of professional societies or obtaining PhDs. Many women have faced additional issues in the 21st century, namely child care.

The layout of the book has already been alluded to, notably with tables summarising the individuals' lives, origins and major contributions followed by more extensive biographies where known; this format prevails in chapters 1–6. Chapter 7 deals with challenges and opportunities in which gender parity issues in STEM (Science Technology Engineering Math) are discussed, with data presented on gender diversity in the various areas of geosciences and VP; again, geographical areas of the world are included. In 2006 it was estimated that men published 40% more papers than women; publication of peer-reviewed papers is a measure of scientific achievement and this low rate of women's publications illustrates gender bias. This is one of a number of biases, such as ethnicity, creed, race and lack of support from influential people, all mentioned in oral interviews and documented in Appendix I, pp. 243–254.

Clearly, the book is challenging, underpinning its objectives with a plethora of data written by Annalisa Berta and Susan Turner, two experienced modern day scientists. Included are clear black and white pictures of known women, some taken informally whilst researching in the field, others shown in a more formal pose as befitting the day. The book does not shy away from any contemporary issues, but it does suffer from a repetitive format which may be off-putting for the more general reader; perhaps in future editions this issue could be addressed.

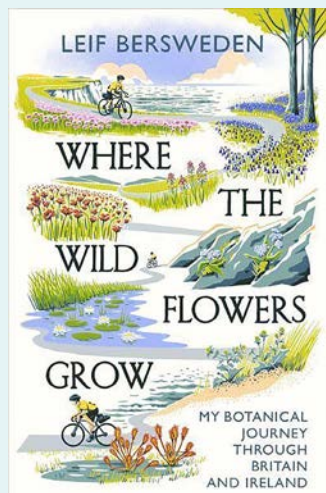
In my opinion this book represents very good value for money and ought to be read not just by vertebrate paleontologists, but those in all fields of science, particularly those in leadership roles so that they may be reminded of the difficulties women have faced—and still face—in their contributions being recognised.

Stephen Hoskins FLS

Where the Wildflowers Grow: My Botanical Journey Through Britain and Ireland

Leif Bersweden

400pp, Hodder & Stoughton
2022 (Hardback)
ISBN 9781529349535
Colour illust. £25



Leif Bersweden is a fortunate man. He has been able to unify two of his greatest loves—biking and ‘botanising’...wandering, observing and enjoying the company of plants, the stories of which he tells in his book *Where the Wildflowers Grow*.

I have never resolved what comes first—the love of excursions or the love of the natural world. As John Balfour said in the *Edinburgh New Philosophical Journal* (1848): ‘Excursions may be truly said to be the *life* of the botanist.’ Bersweden’s book is the outcome of a year of such excursions, spent around the UK and parts of Ireland. From fens and meadows, across beaches and mountaintops, to bogs and ancient woodlands, Bersweden sweeps across the country spurred on by an unquenchable urge to find plants. Luckily for us, plants are everywhere, and even in the most soul-crushingly concrete car park on the side of a motorway, one can find these slivers of life.

Fortunately, wildflowers grow almost everywhere, and this publication is, in essence, a travel book—one with a very specific leitmotif. It is always fascinating to ascertain what people see in a landscape or a map—each viewpoint an amalgam of experiences, beliefs and values. Unsurprisingly, Bersweden also sees a map in his own way, and interprets it to his needs, or in this case, what wildflowers need.

Each of the book’s chapters are concise narrations relating to unique habitats in the UK, or more precisely, a focussed hunt for a plant. Each essay is infused with local histories, vivid descriptions of the landscape and plants (‘Rock samphire sprouted from crevices like TV aerials’), records of past naturalists and travellers in the area, and cultural narratives. It is worth loitering around his meticulous lists of common names of the plants he encounters; like little potted histories, they outline a plant’s place in society, culture and human imagination. In the chapter on poppies, he comes across a ‘crowd of Scarlet Pimpernel’, a plant that has more than 50 common names (‘laughter bringer’, ‘shepherd’s joy’, ‘ploughmen’s weatherglass’) which whimsically express its role as a medicinal herb, a teller of time and forecaster of bad weather. Vignettes of a time when we paid attention to the natural world to make sense of our days.

Bersweden’s botanical journeys are rooted in four fundamental aspects—rhythm, routine, comfort and belonging. He often refers back to a childhood spent unleashed outdoors in Wiltshire, a place he returns to repeatedly (physically or emotionally), even when on other botanical excursions. I particularly enjoyed the chapter on chalk grassland in rural Wiltshire (which hosts magnificent wildflower biodiversity) because of the way it draws together our imprint on the land and nature’s subsequent adaptations. ‘The tank tracks and shell craters are important features of the landscape, diversifying the habitat and opening up ground for pioneer species to establish.’ Of the remaining chalk grassland in the UK, 75% is found in Wiltshire.

One thing that kept me moving from chapter to chapter were the people that Bersweden meets, journeys with and profiles. Anyone who has spent time in nature deeply understands that it can be a forge for friendships. It is a comfort to meet the author’s friends and colleagues in the field, the tireless workers whose lives and work are holding together fragile ecological pieces. It is a delight to meet all the ecologists, estate owners, conservationists, rangers, students, botanists and even a paediatric nurse with an undying love for meadows.

But it isn’t just about contemporary field workers. It is also about the rich history of all the botanical vagabonds and citizen scientists whose burning desire to spend hours in uncomfortable positions and inclement weather helped fill out field guides, books and plant records. I was charmed by the story of Thomas Edmonston on the island of Unst, who discovered Edmonton’s chickweed (*Cerastium nigrescens*) as a boy 200 years ago, found nowhere else in the world. Nature browsers existed then, as they do now, which is perhaps the most heartening message of this book. Bersweden has leafed through several centuries of nature journals, diaries, and records, and evidently used them in the field. This book has

bloated my list of things to read, from Edward Step's book on wildflowers to Francis Willughby...from the excursions of Professor John Balfour to Ellen Hutchins and her work on mosses.

Bersweden argues that people are not enticed by plants because they are motionless, but I am not wholly convinced. There is currently a war for attention in a world that is over-stimulated and singularly directed towards handheld screens, quite apart from the everyday struggles in a severely resource-starved world. In this global contest for eyeballs, the lack of mobility of plants, in my opinion, is less of an issue. Plants, in fact, do have an arrival and a departure. The drama and vitality of the change of seasons is mostly contained in the transformation of plants around us.

In a way, being interested in plants requires a more active stance from the viewer and is perhaps more rewardingly tactile. 'I placed a hand on the warm turf, feeling the squashy thyme, wrinkly bird's foot trefoil seed pods and prickly dwarf thistles, knowing what they were without having to look,' writes Bersweden.

It is unlikely that a person interested one area of study observes nothing else. It is less about scale (of a single blade of grass or a seed pod), and more about a practice of quietude and reflection. If one were to spend a month under a tree or in a woodland, it is inevitable that our viewfinder would widen out, from an unfurling leaf to the full landscape. As ecologist Gus Routledge remarks in the book, while showcasing a 200-year-old old Scots pine in the Cairngorms: 'These trees have seen wolves.'

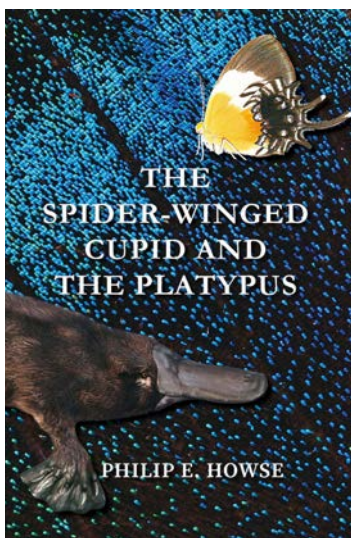
Padmaparna Ghosh

The Spider-Winged Cupid and the Platypus

Philip E. Howse

171pp, Butterflies and Amazonia
2022 (Hardback)
ISBN 9781739885632
Col. illust. £25

This book is a continuation on the theme extolled by the author in several previous books on



Lepidoptera and expands the view that when we look at butterfly and moth wing and body patterns and behaviour in relation to mimicry, be that cryptic, Müllerian or Batesian, we often make the mistake of seeing these creatures through human eyes, rather than in the way that a potential predator—arthropod or vertebrate—might see them. By this means, as the author readily and comprehensively explains, we are surely in error. As he further argues, these prey items have been in a war, certainly an 'arms race', with such potential predators, perhaps over tens of millions of years (although the time period could be much shorter of course; see below) and as such, it is beholding on the prey to adapt and, by so doing, survive. It is not so much 'survival of the fittest' by means of intense natural selection, but more 'survival of the survivors'. And to do this, the prey have to produce tricks of imitation and behaviour worthy of the finest magicians: 'Now you see me, now you don't', as the insect in question merges to become a leaf, twig or flower, pretends to be a venomous creature, or it displays flash warning colouration, enough to startle the predator and give the prey time to escape to survive another day.

Howse, by extension, understands that some of the mimicry he describes is so 'out of this world' that it is difficult even for present-day biologists to really believe what they are witnessing.

Continuing from his previous works, he develops the central theme of Lepidoptera mimicry in relation to plant material (leaves, twigs, bark, etc.) and other insects, now also including fish, amphibians, birds and mammals, e.g. bats, tigers and humans. It is surely a *tour de force*, a work of considerable scholarship, and as such, a revelation to all those interested in nature, evolution, and ecology. The text is always interesting and holding of one's attention, whilst the plethora of colour photos are fantastic. Whether the reader believes all the associational examples provided by the author, e.g. blue butterfly pupae imitating human faces, certain Nymphalid butterflies showing tiger head coloration,

including stripes, and moths pretending to be bats hanging upside down in order to ‘fox’ (if that is the word) their enemies, real bats, is another matter. I was largely—but not wholly—convinced by some of the more extreme and tentative associations. The photo of the fruit fly that has evolved shapes on its wings mimicking ants is amazing beyond belief. Having said that, unlike us humans and our still-limited gifts in the field of molecular biology, nature has endless time, endless opportunities to evolve change and endless resources. Hence, it can produce animals like the platypus and the spider-winged cupid butterfly, a butterfly with a clear spider pattern on the ends of its hind wings. By the way, the platypus is only mentioned to show the reader that when, some 230 years ago, these animals were first observed and captured in Australia, the cognoscenti of the day assumed (wrongly) that the animal was a hoax... until that is, the species was scientifically described. Howse, by extension, understands that some of the mimicry he describes is so ‘out of this world’ that it is difficult even for present-day biologists to really believe what they are witnessing.

The author also informs us about human psyche and how we are geared up to see images in the world around us that appear to be human faces or animals, and if we do this, why not other species too, such as birds? A fraction of a second of doubt on the part of a predator is valuable escape time for the threatened prey. What the book and its thesis does surely emphasise is that the visual acuity of birds, especially in detecting suitable prey, is incredible. It is because of this acuity that the selection pressure on the prey is so great, and thereby it positively drives the evolution of these bizarre defensive wing and body patterns and strategies, sometimes to the most outrageous forms. This includes adult moths appearing like hornets, and lepidopterous larvae evolving to look like tree snakes, and even predatory beetles. Maybe, because of this intense selective pressure, the time span of evolutionary change is much shorter than we imagine. We tend to think that evolution only occurs over vast swathes of time, periods we humans cannot imagine. But in reality, due to the rapid rate of reproduction of some insect species relative to their predators such as birds and reptiles, it may be faster than we think.

So far, all very positive. But, alas, there are some serious negative issues, i.e. textural errors, including incorrect labelling of some photos, the wrong accreditations of the photos themselves, and the misspelling of some Latin names. As bad as these things are, nevertheless the storyline survives and these various errors can surely be changed quickly in a revised edition.

In conclusion, I suggest that every biologist should read this book. I am sure they will be stunned by what they see and read therein, as I surely was.

Hugh D. Loxdale MBE FLS

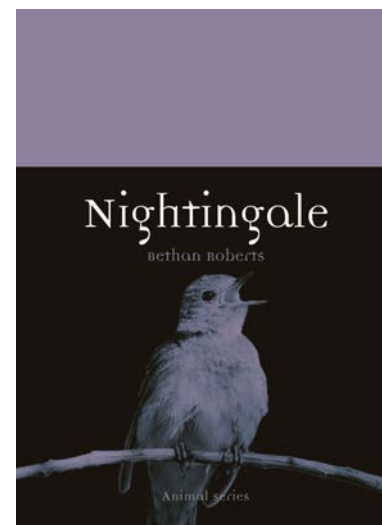
Nightingale

Bethan Roberts

206pp, Reaktion Books
2021 (Paperback)
ISBN 9781789144741
Col./bw illust. £13.95

Nightingale is one of a series now in excess of 100 titles under the rubric ‘Animal’ published by Reaktion Books. Described by *The New York Times* as a ‘wonderfully idiosyncratic series’, its publishers prefer the phrase ‘pioneering series’ whose purpose is to explore the historical significance and impact on humans of a wide range of animals. Each book should (but does not always) examine an animal’s role around the world, including the importance of mythology, religion and science, its history of food, its live trade and that of its products, as a pet and its appearance at exhibitions, in film and photography and its roles in the artistic and literary imagination. Alphabetically, the wide range begins with *Albatross* and terminates with *Zebra*. Biologically, the range is from *Bedbug* and *Cockroach* via *Jellyfish* and *Lobster*, through birds such as the *Sparrow* and the *Eagle* and mammals from *Hedgehog* to *Whale*. The target readership (of the whole series) is unclear but at Number 100-plus it can be assumed that a large community finds the series interesting.

As with other books in the series the title could be contested, perhaps it should be ‘Nightingales’. Although overwhelmingly about the common nightingale *Luscinia megarhynchos*, there is considerable content about the thrush nightingale *Luscinia luscinia*, species whose ranges overlap. The book’s subject matter is fully concordant with the objectives of the series in that it examines the bird’s role around the world, but with a strong emphasis on its role as a subject of poetry.





There is a rather long unnumbered 'Introduction' followed by five chapters—1: Natural History Nightingales: 'When the buds of the leaves are swelling'; 2: Literary Nightingales: 'Old world pain'; 3: Literary Nightingales: 'Selfsame song'; 4: Musical Nightingales: 'Organs of delight'; 5: 'Immortal Bird?': Nightingales in decline. The usual 'Timeline' dates from about 115,000 years ago when the two species diverged to 2019, the 200th anniversary of John Keats' 'Ode to a Nightingale' and the year in which London's Berkeley Square was 'rewilded' by Extinction Rebellion. References that would usually be inline in the text are indicated—as throughout the series—by a superscript numeral, the references themselves (sometimes lightly annotated) being gathered in one section for all chapters after the main text. This reviewer eventually found it extremely irksome to have constantly to flick from text to reference list with its repetitions of 'ibid' and the numerous appearances of the same reference in the same and other chapters. The section on 'Select Bibliography' has 24 titles, many of which are already included under 'References': a single separate alphabetical bibliography, following citations by authors' names in the text, would be much more useful and helpful.

Image: Pixabay

A short appendix lists a few Associations and websites. A less than comprehensive index lists mostly the names of poets and other literary figures.

This is the second book by Bethan Roberts, the William Noble Post-Doctoral Research Associate at the University of Liverpool. She claims to think and write about romantic poetry and the history of ornithology. She covers these subjects in the context of cultural sociology in some detail in *Nightingale*, a bird in which she has a special interest. Her writing style makes for easy reading and is (not surprisingly!) lyrical in places.

As is usual with this small format series printed on glossy paper the book has a cornucopia of illustrations ranging from ancient to modern and from allegorical to actual. If you are an aficionado of this series and its ethos this is a book for you although there are similar ones on the market. If, on the other hand, you want to know about the ecology and biology of the nightingale (although there does not appear to be a monograph of the species), the nightingale chapter in 'Robins and Chats' in the *Helm Identification Guides* by Peter Clement and Chris Rose is the book to go for, although as it was published in 2015 the taxonomy of this complicated bird family will surely be out of date.

Trevor Wilson FLS

The Vicar of the Amazon: The Reverend Arthur Miles Moss, In the Footsteps of Alfred Russel Wallace and Henry Walter Bates

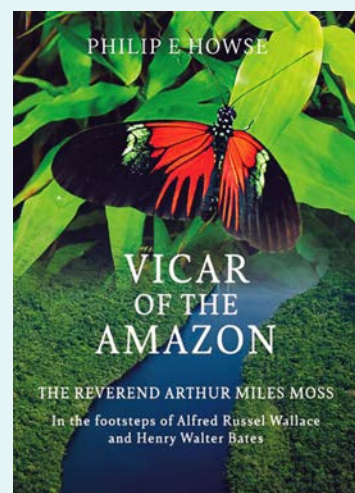
Philip E. Howse

241pp, Butterflies and
Amazonia

2022 (Hardback)

ISBN 9781739885601

Col. illust. £24.99



Much of the natural history of the Amazon had been reported upon, with specimens taken by the Victorian greats the likes of Alfred Russel Wallace, Henry Walter Bates and Richard

Spruce, so it came as no surprise that the Reverend Arthur Miles Moss was virtually unheard of in the period concluding World War Two, except in very limited circles.

Moss was born in 1872 in Cumbria, and in 1873 was boarded at Rossall School on Morecambe Bay following the death of his mother. The school was set in 161 acres on the edge of Morecambe Bay, which developed his interest in the Lepidoptera.

The defining moment for Moss's career came in 1901 when working at Norwich Cathedral as a Minor Canon and Precentor. There occurred a visit to the Cathedral by a missionary Bishop, Edward Every, who was seeking a Chaplain of the Anglo-American Church in the Peruvian capital of Lima. Discussions undoubtedly fired Moss's imagination as to the tropical species of butterflies and moths, many probably new to science, that he would encounter. So much so that, when offered the post, he wholeheartedly accepted, leaving England in 1907 and returning almost 40 years later.

Having the largest parish of this time, stretching from the Pacific Ocean on the Peruvian coastline to the Atlantic Ocean on the Brazilian coast (including the Amazon basin), would have daunted most, but Moss, with typical zeal, approached the role wanting to provide his parishioners with ministering whilst continuing to amass his collection of Lepidoptera.

For a man whose experience of overseas travel was restricted to Switzerland, it says much for his conviction that he undertook a sea voyage to Lima on a weekly steamer via a circuitous route with considerable losses of life due to dangerous weather conditions around the Peruvian and Chilean coasts.

In addition to the dangers at sea, Rio was gripped with yellow fever and bubonic plague raged in Peru, none of which appeared to unduly concern him. This characteristic enabled him to take difficulties in his stride, as evident when captured by bandits whilst on a train and eventually released by the Peruvian army.

Moss's very large parish (estimated at 60,000 miles of navigable waterway) comprised Atlantic coastal areas and tributaries of the Amazon which could only be reached by canoe across forbidding snake infested territory. Yet with the prospect of obtaining Lepidoptera species both known and unknown and ministering to his parish, he maintained a very positive outlook.

He sent many of his finds to Lord Rothschild who had his own private collection based at Tring and overseen by Dr Karl Jordan, his expert curator, with whom Moss became a life-long friend.

In 1928 Margaret Fountaine, a fellow lepidopterist, obtained a letter of introduction from Dr Jordan at Tring to Rothschild's key collector, Alfred Miles Moss, whom she met and with whom she undertook fieldwork; she described Moss as being a first-rate entomologist, musician and organist.

Finally, the story comes full circle with Moss returning to England after living in Brazil for 33 years. He suffered from rheumatoid arthritis, eczema and chest problems. Moss had bestowed his collection and possessions to Jordan at Tring. To the end of his days Moss was plagued by thoughts that he had left 'his people' in Brazil when they needed him; he often longed to return to Brazil but his health negated that. He died in a nursing home in 1948.

The artistic watercolours that Moss produced have been carefully reproduced here and are a testament to the skill and attention to detail that Moss possessed as an entomologist, and to the care in which author Philp E. Howse has presented them.

This is a publication aimed, in my opinion, at both the specialist seeking more information on Moss's life, and those for whom natural history is a source of much enjoyment. I thoroughly enjoyed dipping in and out of the different chapters (of which there are 13 followed by three appendices, a timeline of Moss' life and a letter from Alfred Russel Wallace). This is a book that deserves a place on the shelves of all naturalists—field practitioners and armchair ones alike.

Stephen Hoskins FLS

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Please contact the Editor before sending books for review (leonie@linnean.org).

Books for review should be sent to the attention of the Editor at:

Burlington House, Piccadilly, London W1J 0BF

Please note: While the Society aims to review as many books as possible, a review is not guaranteed, and is dependent on finding a reviewer and the decisions of the Editor and Linnean Steering Group.

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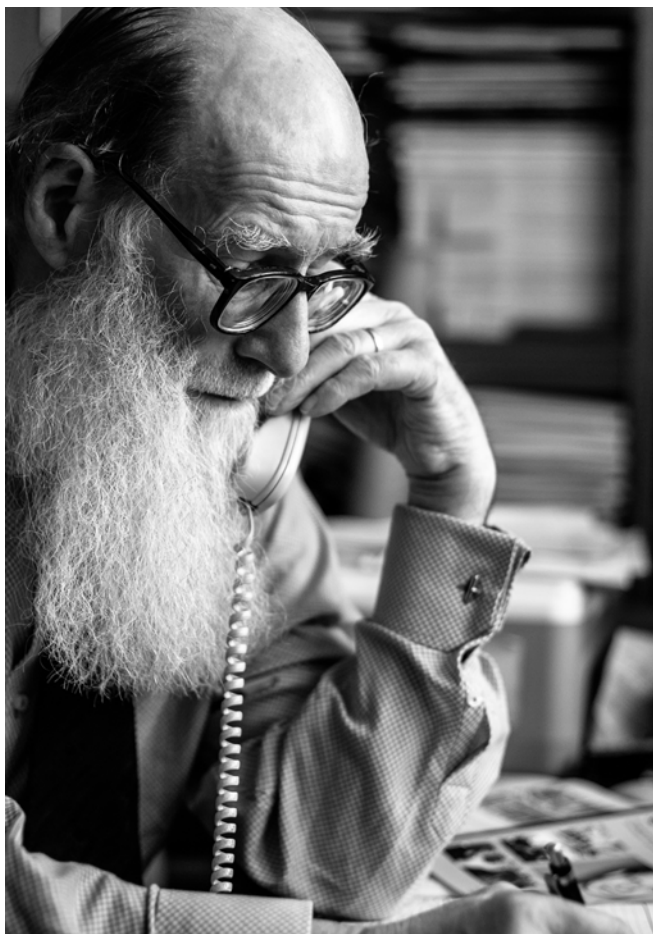
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Lives remembered

Peter Meadows (24 March 1936–6 Dec 2022)



Peter Meadows was member of staff at the University of Glasgow whose research and teaching was focussed on aquatic, particularly marine, biology. He was appointed as a Lecturer in 1963 and taught on many courses. Peter did a lot of detailed research on estuarine ecology, including research on the mudflats of the Clyde Estuary, and established the Biosedimentology Unit, in the Graham Kerr Building.

More recently, together with his partner Azra, he also worked on environmental sustainability and educational projects in developing countries, focussing mainly on Pakistan and North Africa. He received several awards in recognition of his contributions; in 2005 was awarded the Sitara-i-Quaid-i-Azam

(Star of the Great Leader), one of the highest civilian medals of that country, for services to Pakistan.

While he retired in 2001, he continued to participate in the University and held an Honorary Lecturer appointment and educational consultant. Until his just before his death he was a regular attendee at the university's academic and social events.

Peter was a charismatic and distinctive person, easily recognisable from his tall figure, long beard and the twinkle in his eye as he put forward his strongly held views. Peter was a Fellow of the Linnean Society for over 34 years, having been elected to Fellowship in 1988. He will be sorely missed.

by Lorna Kennedy

Olive Hilliard Burt (4 July 1925–13 Dec 2022)

Originally from Durban, South Africa, botanist Olive Hilliard studied botany at the University of Natal, where she stayed on to teach science in the medical school (1954–1962). In 1963 Olive became Herbarium Curator at the university's Pietermaritzburg campus and was made Associate Research Professor there in 1981. During her time at the university she wrote a major monograph on one of the region's largest and most difficult flowering plant families: *Compositae in Natal* (1977).

Her PhD on the genus *Streptocarpus* led to a 40-year partnership with Brian Laurence ('Bill') Burt of the Royal Botanic Garden Edinburgh (RBGE), whom she visited regularly in Scotland. On her retirement in 1986 she moved permanently to Edinburgh so that they could continue their joint taxonomic research. Olive's solo work produced a series of scientific papers and monographs on the family Scrophlariaceae in addition to the joint work with Bill on the family Gesneriaceae. Their most beautiful book was a monograph on the wand flowers, the iridaceous genus *Dierama*, exquisitely illustrated by Olive's friend Auriol Batten. The couple married in 2004 and Bill died in 2008.

Olive was elected FLS in March 1967 and received the Veitch Medal of the Royal Horticultural Society in 1992. She appears in a recently published paper in a special issue of *The Linnean*, where her work has been part of a study on female authors of plant species.

(Information taken from Henry Noltie's obituary in the *Edinburgh Journal of Botany*, with permission.)

Deaths Reported to Council

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Extinct

Empire, Art & Natural Histories

Symposium | Friday 9 June 2023 | 10.00–18.00

The spectre of extinction looms large in today's popular imagination. For billions of people around the planet, the issue of extinction bears directly upon their present and future survival. It is inseparable from the entangled fates of flora and fauna.

This symposium, **Extinct: Empire, Art, and Natural Histories**, will focus on the contributions of artists, curators and scholars who create work inspired by vanishing landscapes, ecosystems and ways of living. Specifically, it will prompt speakers to consider how empire, natural history and the notion of extinction have shaped both our relationship with the natural world and our approaches to art, literature and conservation.

Accompanied by an exhibition of Simryn Gill's nature prints 'Naga Doodles' (2017) in our library. The display will run from 26 May–21 June 2023.

Organised by Emilia Terracciano and hosted by the Linnean Society, with generous support from the Paul Mellon Centre.

Free event. Registration essential.



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