The LINNEAN SOCIETY of London

# The Linnean

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19th-century Indian bird paintings on mica

**Robert Brown**
Following him to Botany Bay and back

**New Light**
The edible-nest swiftlets of Java

AND MORE...

*A forum for natural history*

# The Linnean Society of London


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## Publishing in *The Linnean*

*The Linnean* is published twice a year, in April and October. 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).

Articles should be emailed to the Editor in MS Word format. Images should be sent as JPEGs or TIFFs at no less than 300dpi. Correct copyright information should accompany the images.

Cover image: Painting of *Sturnia blythii* on mica © The Linnean Society of London




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# The Linnean

*Newsletter and Proceedings of the Linnean Society of London*

Contents



## Editorial

As Fellows will see elsewhere in this issue, this is a time of change, both in terms of staff and Trustees; some beginning roles, others retiring from them. Sadly, we have lost two Past Presidents, Sir David Smith and Professor R. J. (Sam) Berry, as well as our oldest Fellow, David Goodall, and several others who have contributed significantly to the Society.



The meeting held in March to celebrate the 230th anniversary of the election of our first female Fellows generated considerable interest and a future *Special Issue* of *The Linnean* is planned for late 2019 or early 2020. This timing is to enable our staff to complete work on another book now underway, due for publication in 2019 (see Noltie in this issue).

Books for review continue to arrive, and while we always try to include as many as possible this is dependent on available space. Additional reviewers are always welcome to contact me, and lists of books are sent out periodically to those on the mailing list as potential reviewers. Duplicate copies are either presented to other institutional libraries or placed on the fantastic book sale trolley in the Society's entrance hall. Funds generated from their sale contribute to the Library purchase budget.

Thanks are due as usual to members of the Linnean Steering Group for their useful feedback, editorial input and comments on submissions.

**Gina Douglas**, *Editor*
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Society News

When we tweeted '*What makes you interested in Taxonomy?*' we got some fascinating responses (to download the poster visit www.linnean.org/taxontweet), one being '*finding out there was so much to find out!*' from our new President, Dr Sandra Knapp, taxonomist extraordinaire at the Natural History Museum, London (RIGHT). The Society is absolutely delighted to welcome Sandy, who took up the reins from Prof Paul Brakefield FRS in May. Sandy will be well known to many of you, as she has been a Fellow for 30 years, served as an Officer for 13 years (as Botanical Secretary 2001–14), and is a Society medallist. She is one of the most notable promotors of all things related to the wider understanding of natural history, often appearing on radio and TV. Sandy is already having a positive impact on Society matters—steering the governance review, and turning her attention to defining the Society's vision—where do we want to be? The Fellowship may also be pleased to know that a Membership Working Group is being convened to look at all aspects of Membership—and we will be consulting widely.

## Goodbyes and Hellos

Our highly esteemed Librarian, Lynda Brooks, retired in July after 13 great years, and in her stead, we were delighted to appoint her deputy, Dr Isabelle Charmantier in the newly titled role of Head of Collections. Read more about the Collections team in *Collections News* overleaf. The Society is also reaping the benefits resulting from the move to Burlington House in May of the four team members who had been based at Toynbee House, so the whole staff team is now together.

## Out and About

We are indebted to our curators Glenn Benson (Artefacts) and Dr Mark Spencer (Botanical) and other Fellows and staff, for their tremendous efforts to get the wonderful Linnaean herbarium cabinet ('Herbie') display finished in time for the Conversazione—which proved to be an entertaining Fellows' meeting, with Glenn's enlightening presentation, which included a showing of the Linnean Learning video from the *Clever Collections* series, followed by a prosecco reception. Semi-permanent displays about the Society's collections were also unveiled in the Discovery Room for the first time (RIGHT).


Over the summer, the Linnean Society has been out and about in Scotland, Wales and Hampshire. The field trip on the Isle of Cumbrae in August, courtesy the Field Studies

Council (FSC), was fantastic, and we extend our sincere thanks to the FSC for their professionalism. You can read all about this marine-themed weekend in the website blog by our Events & Communications Manager, Dr Leanne Melbourne. We start planning the 2019 trip shortly, so let us know your preferred locations. The Society launched its *Museum of Lost Species* exhibit in Einstein's Garden at the Green Man Festival in Wales. The conceptual museum was trying aggressively to 'collect' as many exctinct species as possible (the aim being that eventually every species would be an exhibit), with recorded stories of lost species available to listen to. Many visitors were moved by the stories, with some even mock-protesting. This music-meets-science festival attracted 20,000 visitors, many of them families with children, providing a whole new constituency to whom the Linnean Learning team introduced our educational resources. The Society was also pleased to see the digital microscopes it had donated to the Sir Harold Hillier Gardens (for their dipping ponds) being put to good use for a Butterfly Conservation activity day there.


**Young people protest at the *Museum of Lost Species* at the Green Man Festival in Wales**

## G(in) and Tea

Another highly successful event was the Courtyard Late, exploring the theme *Resources*, around the Cultural Campus of the six Societies at Burlington House. The Linnean Society was a hive of activity, with three illuminating talks in the Meeting Room (by Drs Henry Oakeley, Paul Wilkin & Brenda Parker), fascinating make-your-own-tea-blend workshops with herbalist Val Thomas in the newly refurbished Discovery Room and luscious Oxford Botanicals gin tastings in the library, with Cory Mason of The Oxford Artisan Distillery (TOAD). We've also run two art workshops in the Discovery Room and will be taking part in the Big Draw—so sharpen your pencils and come and enjoy our full programme of events!

Finally, you can read about the various honours bestowed at the Anniversary Meeting in the Minutes which are included in this edition.

**Elizabeth Rollinson**, *Executive Secretary*
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The Society was very sad to say good-bye to Lynda Brooks, who retired after 13 years as Librarian, on 31 July. As a gift from the Society, she was presented with a specially printed and framed plate of her favourite parrot from Edward Lear's *Illustrations of the Family of Psittacidae, or Parrots*.

**Lynda Brooks receives the Society's gift from Collections Secretary Dr John David**

Lynda oversaw huge changes during her time as Librarian of the Linnean Society: she oversaw the journals move to Toynbee House, the Library's role in the installation of the lift and the renovations of the Library in 2008. Lynda has kindly offered to volunteer in the Library one day per week for the next few months and will help deal with books awaiting classification in the Library. Her invaluable help will ensure a smooth transition.

Dr Isabelle Charmantier has moved into the role of Head of Collections, and will oversee the four members of the Collections team, including the new Librarian, Dorothy Fouracre, who started on 17 September. Dorothy has previously worked at the Wellcome Trust and the Royal Society of Surgeons; look out for Dorothy's bio in the next edition of *PuLSe*.

## Display Cases and Visits

**Isabelle Charmantier leads the tour for the Harvard Summer Programme students**

The Darwin-Wallace Collection is now installed in the new Discovery Room in the basement. The display cases next to the collection include a selection of specimens, books and manuscripts from the Linnaean Collections, and items which illustrate the history of the Society and its Fellows (including Brown's microscope, the old ballot box, and various manuscripts and books). The Discovery Room displays were included (along with the Linnaean Collections, the Library and the Meeting Room) in the annual summer visits of the UK-Japan Young Scientists, the Darwin in Oxford Harvard Summer Programme students, the International Youth Science Forum, and a group of tea specialists from Sichuan Province in China.

## Library Outreach

Two enthusiastic and dedicated King's College History Masters students spent one day a week in the Library from January to May, cataloguing Lady Pleasance Smith's correspondence. Their module required an output, for which the students collaborated with Digital Media Producer Ross Ziegelmeier to produce a podcast describing the extraordinary epistolary life of Lady Pleasance. Most of the Linnean Society staff provided the voices; give it a listen on the Society's page on SoundCloud: https://soundcloud.com/user-679811756/lady-pleasance-smith

> "Their module required an output, for which the King's College students produced a podcast describing the epistolary life of Lady Pleasance."

As you will have seen in *PuLSe*, June was particularly busy for Collections staff, who attended a Royal Society workshop on 'Unlocking Archives for Scientists' and the annual European Botanical and Horticultural Libraries group meeting (EBHL), which this year teamed up with its US sister organisation, the Council for Botanical and Horticultural Libraries (CBHL) and Linnaeus Link, and took place in New York Botanical Garden. Isabelle also gave an evening lecture on the 'Classification of Plants' at Erasmus Darwin House in Lichfield.

## Conserving our Collections

The Society is delighted to have received funding from the Arts Council PRISM (Preservation of Industrial and Scientific Material) fund to conserve its Carpological Collection. The collection, which includes fruits, seeds and other objects (such as a jar of citronella, the wing of a flying fish and the cloth from an Egyptian mummy), complements James Edward Smith's herbarium, and includes items brought back by or sent to Smith from all over the world. The items are, for the most part, still contained in their original wrappers made out of discarded letters, sermons and newspaper. Thanks to this funding, Conservator Janet Ashdown is currently cleaning these wrappers, and rehousing the collection in conservation grade boxing.

After the extension of the AdoptLINN scheme at the Anniversary Meeting in May, to include manuscripts and works of art, AdoptLINN has seen an increase in the uptake of adoptions. In the last few months, several very special items have been adopted by Fellows, amongst them two editions of the 15th-century *Ortus Sanitatis* from Carl Linnaeus' library, and Jean Gustaf Haagen-Nilsson's copy of the 1774 portrait of Linnaeus by Per Krafft, which hangs in the Meeting Room. A competition amongst 8–11 years old to replace the portrait in the Meeting Room for the duration of its conservation is underway (see www.linnean.org/portraitcomp). New items are added all the time; visit our AdoptLINN page to find out what is currently up for adoption: www.linnean.org/AdoptLINN

**Isabelle Charmantier**, *Head of Colllections*
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# Donations

The following people have made book donations to the Library of the Linnean Society of London. These books will now be in the process of being added to the Society's online catalogue, accompanied by the appropriate donor information.

## *Thank you to all those who have donated to the Society:*

Dr Mikael Ahlund

Glenn Benson

Prof. Tim Birkhead

Raffaella Bruzzone

Dr Gehard C. Cadee

The Estate of Professor W. G. Chaloner

Dr Isabelle Charmantier

Dr Maarten Christenhusz

The Estate of Prof. J. L. Cloudsley-Thompson

Prof. Jonathan Drori

Prof. Jeff Duckett

Ian Endersby

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Dr Arthur MacGregor

Peter Marren

Henry A. MGhie

Jeremy Mynott

Dr E. Charles Nelson

H. L. Pearson

Prof. Philip S. Rainbow

Real Jardín Botánico, Madrid

Royal Academy of Arts

Adrian Spalding

Daniel Steinbach

Susanne Stephan

The full list of donations is also accessible as a PDF with the online version of this issue of *The Linnean* at **www.linnean.org/thelinnean**.

A printed copy of the list can be sent upon request—please contact the Library staff at **library@linnean.org**.

# Robert Brown & HMS *Investigator*: To Botany Bay and Back

**Margaret Brown**
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"At 11 got underway." The botanist, Robert Brown (1773–1858), wrote these few words in his diary on 18 July 1801. Sending his last letter to his mother in Scotland, he could never have guessed that he would not see Britain again for over four years and, as HMS *Investigator*[1] left Portsmouth, what lay ahead was as yet unknown. His experience of life at sea was limited, though fortunately his captain on board the survey ship HMS *Investigator*, Matthew Flinders (1774–1814), was experienced, having only just returned from the Southern Ocean. The ship was originally a collier and had been refitted for service with the Royal Navy. Only 100 feet long, carrying 80 crew and 18 guns, she was much smaller than Lord Nelson's HMS *Victory*. HMS *Investigator* would go on to become the first ship to circumnavigate Australia.

**Fig 1** Robert Brown

Navigation in the days of sail was essentially risky, with wooden hulls, rudimentary knowledge of the weather, tides and currents; shipwrecks were common. Flinders had only just married and brought his younger brother with him, as well as a teenage John Franklin.[2] Popular with all the crew was Trim, the captain's cat—perhaps a little reminder of home.

Brown (Fig 1) was apparently not prone to seasickness, an advantage in the months to come. But the ship was already leaking, and his cabin had taken on some water, as he prepared for landfall in Madeira. After landing he interested himself in geology and zoology, as well as botany. Six hours of rowing ashore resulted in little of note, except

1 For more information on HMS *Investigator see http://www.flindersmemorial.org/captain-matthew-flinders-rn/what-flinders-achieved/hms-investigator/*

2 Franklin (1786–1847) led the tragic Arctic expedition in 1845 to find the infamous Northwest Passage in the Canadian Arctic. No one survived.

perhaps observing many luminescent *Medusae,* as they returned to HMS *Investigator* at nightfall. This might be the pattern of the journey as a whole—long hours reaching land and little reward.

While Flinders sought to find out from the Portuguese Governor whether any French ships had been sighted (the French were also tasked with surveying the coast of Australia under the leadership of Nicolas Baudin), Brown began collecting specimens but overall was disappointed. The Equator was a month away, crossed with the usual initiation ceremonies, but he did at least observe seabirds and flying fish as they sailed on. Flinders now set a course for the Cape of Good Hope, while Brown, using his talents as a microscopist (for which he would later become renowned) examined Australian collections from previous expeditions. The Austrian botanical draughtsman working with Brown, Ferdinand Bauer (1760–1826), started work on his exquisitely detailed drawings (Mabberley 2017).

The expedition to Australia was underway—would they find it actually was one continent? The Cape, which had been taken from the Dutch only six years before, was reached in October. Brown and Bauer made some botanical collections and saw some 30 species of orchid on Table Mountain, but in general there did not seem to be many new species.

On 6 December 1801, Cape Leeuwin in SW Australia was sighted, and for the first time, systematic collecting of plants now began. Brown was lucky to land on a coastal area with great botanical variety. As they followed the coast eastwards substantial collections of specimens were made, so many that Brown had no time to describe them.

Later in December, the first contact with the native Australian population took place. After Cook's violent death in Hawaii there may have been some concerns, but all went well. Brown's assistant, Peter Good (17??–1803), found a pitcher plant and several species of kangaroo appeared, as well as a cassowary, both unlike any animals in the Old World. The summer heat proved a challenge as Brown continued collecting, adding 29 species including those in the genus *Brunonia,* named in his honour by Sir James Edward Smith and Fellows at the Linnean Society. He also noted animal behaviour, including the reaction of seals when they were approached (seal meat became a welcome addition to the diet, as well as fish).

The solar eclipse in March 1802 was over-shadowed by death. A small landing boat capsized and an expedition to find survivors met with failure. Interest in wild life was accompanied by the slaughter of many kangaroos; Kangaroo Island (Fig 2), which was named by Flinders, supplied them with the meat and fur of 31 kangaroos on the first day.

In early April, they encountered the French corvette the *Géographe*. Flinders rowed out to the ship, with Brown as interpreter: "As I did not understand French, Mr Brown, the naturalist, went with me in the boat" (Flinders 1814). Several locations and features had already been named by the French Captain, Nicolas Baudin (1754–

**Fig 2** The *Investigator*'s approach to Kangaroo Island from Flinders' *A Voyage to Terra Australis*

1803), during their survey. The meeting was cordial despite neither captain knowing that their respective countries, which had been locked in conflict, were no longer at war; Flinders would name the location Encounter Bay.

On board the *Investigator*, Bauer, whose meticulous approach to his work mirrored Brown's, was making hundreds of detailed drawings of plants and animals. Arriving at the penal settlement of Port Jackson on 9 May 1802, Brown stored some of his specimens at the Governor's house. The *Géographe* also arrived there and Brown invited their botanist Théodore Leschenault de la Tour (1773–1826) to the *Investigator*, and though he was unable to come, he sent a very courteous and friendly reply.

As the weeks passed at Botany Bay, Flinders decided to proceed northwards, to circumnavigate Australia in an anti-clockwise direction, unlike the original plan. After the ship had set off, Brown went on a trip inland, where he came across a native grave and removed a skull from the skeleton. This act resulted in Flinders forbidding future grave looting.

Most shipwrecks occur when nearing land, so the frequent landings required to fulfil the purpose of the expedition were fraught with danger, added to the discomfort of ants, mosquitoes and dangerous snakes. So much effort and persistence was rewarded by the wealth of finds. Brown was also recording marine life: sea sponges, sea cucumbers and large numbers of giant clams, a useful addition to their diet. In the Gulf of Carpentaria, nutmeg and cabbage palms were identified, the latter useful for making hats. A greenhouse had been erected on deck and some of the plants gathered were replanted, many carefully reproduced by Bauer. Botanical collections in North Australia numbered to around 500 species. Land exploration included discoveries of ochre and yellow cave paintings as well as human remains.

The New Year of 1803 was marked by deterioration in the fabric of the ship as well as an increase in sickness in the crew, with one crew member attacked and injured while

onshore. In early March Flinders set sail for Timor, but upon arrival concerns with the worsening physical condition of his ship and health of his crew made him return to Australia. In June Brown's much valued assistant, Peter Good, passed away.

Because of the poor state of *Investigator,* the decision was made for Flinders to return home as a passenger on an accompanying vessel, HMS *Porpoise,* to bring back a fresh ship. Brown and Bauer were to stay behind. The latter had sketched 1,000 plants and 200 animals, an astonishing achievement, given his surroundings and the materials available (see Mabberley 2017).

"All Brown's industry, all Flinders' care and skill, all the dangers and hardships endured seemed to count for little, while European affairs dominated—especially the fear of a French invasion."

In August, HMS *Porpoise* set sail for England with its precious cargo, but a shipwreck destroyed this en route. Flinders was detained in Mauritius and did not reach home until 1810, completing his outstanding account of his voyage within days of dying. Brown owed him a great deal. His name lives on in the name of his grandson, William Matthew Flinders Petrie (1853–1942), the Egyptologist.

Brown and Bauer remained in Australia for another year and a half. They travelled to Tasmania, where they met more native Australians, whose features and speech he noted. More collections were made, 150 in all. Brown worried about the stowing of all his precious finds and took pains to preserve them as well as possible. He left Australia for good in late May 1805, with another 1,200 specimens. HMS *Investigator* rounded Cape Horn in July, while Brown sorted through his finds and worked on a study of his collections with his microscope. The vessel was too frail to risk the English Channel and in early October docked in Liverpool. Her battered appearance made her look like an abandoned ship.

This was a life-changing event for the young Scottish botanist but the enormous contribution to botanical and geographical knowledge was hardly noticed. All Brown's industry, all Flinders' care and skill, all the dangers and hardships endured seemed to count for little, while European affairs dominated—especially the fear of a French invasion.

In the years to come, Brown would break new ground. After a long and distinguished career, in 1849 he was elected President of the Linnean Society of London.

## REFERENCES

Flinders M. 1814. *A Voyage to Terra Australis: Undertaken for the Purpose of Completing the Discovery of that Vast Country, and Prosecuted in the Years 1801, 1802 and 1803, in His Majesty's Ship, the Investigator.* London.

Mabberley D. J. & State Library of New South Wales. 2017. *Painting by Numbers: The life and art of Ferdinand Bauer*. Sydney, NSW: Newsouth Publishing.

# New Light on the Type Locality of the Edible-nest Swiftlet *Aerodramus fuciphagus* (Thunberg 1812)

**Lord Cranbrook**

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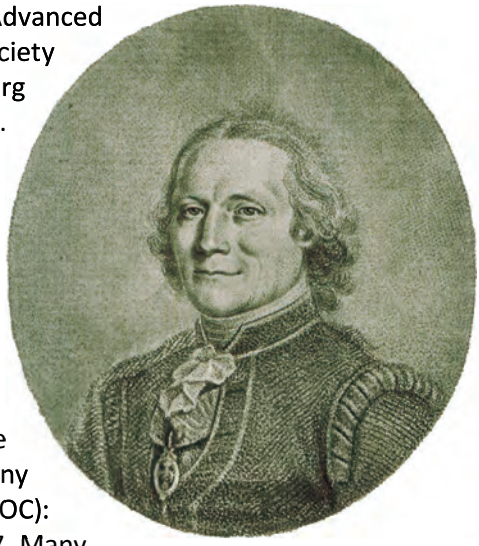

In 2014, the Swedish Collegium for Advanced Study presented to the Linnean Society library a biography of Carl Peter Thunberg (1743–1828) by Marie-Christine Skuncke. Thunberg was one of Linnaeus' 'apostles' and a professor of medicine and botany at the University of Uppsala for 40 years. Before this appointment, Thunberg (RIGHT) travelled to Japan, becoming the only European scientist to visit that country in the late 18th century. On both stages of his journey, outward and returning, Thunberg spent time in Java, then under the administration of the Dutch East India Company (*Verenigde Oost-Indische Compagnie*, VOC): one month in 1775 and six months in 1777. Many years later, departing from his professional disciplines, he described *Hirundo fuciphaga*, "de Svalar, som bygga gelè-acktige åtbare Nåsten" [the swallow that makes gelatinous edible nests] published in a Swedish academic periodical (Thunberg 1812). Thunberg's name has priority over other regional names for edible-nest swiftlets and, consequently, in bird books of Southeast Asia, in scientific literature and in national laws and local regulations, the combination *Aerodramus fuciphagus* (Thunberg 1812), with the type locality designated simply as 'Java', is now widely used as the systematic name of swiftlets that produce the best quality 'white' edible nests, made almost entirely of hardened salivary secretion. Skuncke (2014) has detailed Thunberg's travels and thereby clarified the locality in Java where he is likely to have collected the specimens of edible-nest swiftlet and their two nests, both illustrated alongside his written description.

By the mid-18th century, the memoirs and collections of European traders and other visitors to the East had already familiarised the western world with accounts of the


**Fig 1** Illustrations accompanying Thunberg's description of *Hirundo fuciphaga*

Chinese delicacy of edible nests. It was also known that these nests were made by a swift or swallow-like bird that frequented caves and crevices, especially on islands and rocky outcrops. A species building edible nests was named *Hirundo esculenta* by Linnaeus (1758, p. 191), who cited as defining references the blind scholar of Amboyna (Ambon) Georg Rumpf (Rumphius 1641), the physician Jacob de Bondt, an early resident of Batavia (Bontius 1658), and the English scholar John Ray (1676), but took the salient features of his description from the first of these sources. Linnaeus named the bird *Hirundo esculenta*, describing the species as "*H[irundo] rectricibus omnibus macula alba notatis*" [The swallow with all tail feathers marked by a white spot]. White spots in all but the central pair of tail feathers characterise the small glossy swiftlet still known by Linnaeus' name, *Collocalia esculenta*, occurring in Ambon (the type locality) and elsewhere in the Moluccas and Sulawesi, through New Guinea to the Solomon Islands (Rheindt *et al.* 2017). However, as described by Rumphius (1641) the nests of these birds are not the best quality 'white' nests, but are made chiefly of strands of vegetable material, bound together and attached to the substrate by a sufficient amount of edible substance to make them marketable after processing,

> "He realised that the birds lacked spotted tail feathers, the distinguishing character of Linnaeus' *Hirundo esculenta*, and therefore represented a previously undescribed species."

While in Java, Thunberg obtained specimens of edible nests and the birds that made them. He realised that the birds lacked spotted tail feathers, the distinguishing character of Linnaeus' *Hirundo esculenta*, and therefore represented a previously undescribed species. No doubt he, too, was familiar with travellers' tales and other semi-fabulous accounts of these birds, and therefore chose the name *Hirundo fuciphaga* [seaweed-eating swallow], with the following description: "*supra atra, subtus cinerea, tota immaculata*" [above black,

below grey, totally unspotted]; "*Habitat in Java, in Montium rimis preagrandibus, fere inacessilibus, ad Tjerreton; et alibi in insulis Moluccanis*" [in Java, in vast fissures of the hills, almost inaccessible, at *Tjerreton*; and elsewhere in the Moluccan islands], and included an illustrative engraving (Fig 1). The emphasis on 'Tjerreton' [present-day Cirebon] was repeated in the vernacular text, kindly translated by the late A. J. Hackman: *'Uti min Resas 3rdje Del. p.319'*:

> In my travels, 3rd part, p. 319, and 4th part, p. 162, I recently mentioned … the swallows that make these jelly nests in holes in the Tjerreton hills on the island of Java … These [birds], called 'Fuciphaga' build fine nests … in fissures in the hills or ravines and these nests are as well an excellent nourishment, and as such highly prized and a lucrative business.

Despite these remarks, Thunberg's journal (Skuncke 2014) shows that it was not in the hills around Cirebon that he collected the specimens illustrated alongside his description of the species. On his first visit to Java in 1775, for the whole of his one month stay, he remained in Batavia (present-day Jakarta), completing arrangements for the next stage of his journey to Japan. Returning in 1777, his boat docked in Batavia on 4 January. From the end of March, he journeyed eastward to Cirebon and to the provincial headquarters of the VOC at Semarang. In Semarang, he lodged with the physician J. F. A. Bönneken. The provincial Governor gave the two men a pass to the company's fortified posts and charged them with making an inventory of local plants that were or could be used for medicinal purposes. Doubtless, on these excursions, Thunberg heard about birds'-nest caves in the local hills, but he did not obtain specimens.

**Fig 2** The eroded karstic limestone hills at Ciampea, in 2015, riddled with caves but now threatened by quarrying for cement works

He returned to Batavia on 1 June, and shortly thereafter set off again for the hill resort and hot springs at Cipanas. On this trip, he was taken by local guides to birds'-nest caves and was not allowed to collect for himself, but was given nests and a couple of the "small black swallows" that built them (Skuncke 2014). The principal route from Batavia passed through the important upland capital of Buitenzorg (present-day Bogor). A short diversion westward would have taken the traveller to the eroded limestone hills of Ciampea, riddled with caves (Fig 2) which, in 1960, were still worked sources of white edible nests (Medway 1962). With a lack of other possibilities, it is

reasonable to deduce that the Ciampea caves were the collection site of Thunberg's specimens, and therefore the type locality of *Aerodramus fuciphagus*. The resulting scientific importance of this location should influence measures to conserve the limestone outcrop, the caves and the birds inhabiting them.

## Additional Note

In the English translation of Thunberg's diary it is recorded that on 25 June 1777, Thunberg was in 'Megamendoeng' (now Megamendung) (Thunberg 1793–95). The following day he visited a bird-cave (Tcheraton). I have consulted with local speleologists, but they do not know of a cave by that name within a day's travel of Megamendung—or, indeed, anywhere else.

### REFERENCES

Bontius J. 1658. Historiae naturalis & medicae Indiae Orientalis. *In* W. Piso, *De Indiae Utriusque re naturalis et medica.* Amsterdam.

Linnaeus C. 1758. *Systema Naturae per regna tria naturae.* 10th ed. Holm, L. Salvius.

Medway Lord. 1962. The swiftlets (*Collocalia*) of Java and their relationships. *Journal of the Bombay Natural History Society* 59: 146–153.

Ray J. 1676. *Francisci Willughbeii Ornithologiae.* London.

Rheindt F. E., Christides L., Norman J. A., Eaton J. A., Sadanandan K. R. & Schodde R. 2017. Speciation in Indo-Pacific swiftlets (Aves: Apodidae): integrating molecuar and phenotypic data for a new provisional taxonomy of the *Collocalia esculenta* complex. *Zootaxa* 4250(5): 401–433.

Rumphius G. E. 1741. *Herbarium Amboinensis (Het Amboinsche Kruid-boek).* Edited by J. Burmannus. Amsterdam.

Skuncke M. -C. 2014. *Carl Peter Thunberg: botanist and physician.* Uppsala.

Thunberg C. P. 1793–95. *Travels in Europe, Africa and Asia, performed between the Years 1770 and 1779.* London.

Thunberg C. P. 1812. Anmårkningar om de Svalor, som bygga gelé-acktige åtbare Nåsten. *Konglige Vetenskaps Academiens Nya Handlingar* 33: 151–156.

# An Album of Trichinopoly Bird Paintings

**H. J. Noltie**

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For a forthcoming illustrated book to celebrate some of the treasures in the Linnean Society's collections, I was asked to write about 'Linn. Soc. MS 192', a small album entitled 'Drawings (on talc) of Birds of S. India—Presented by Dr Shortt', which, though donated to the Society on 1 December 1859, appears to be previously unstudied. It has turned out to merit far more than the 300 words required for the book—in terms of its commissioner-donor, the nature of the artwork, the birds depicted and the source from which the images appear to have been copied.

The bird paintings, in thick gouache, are characterised by intense, jewel-like colouring, which leap out almost three-dimensionally from their support medium of shiny, transparent mica (then known in India as 'talc'). Although, due to its shininess, this is a decidedly perverse surface on which to choose to apply paint, Indian artists both in the north of the country (Murshidabad, Benares and Patna) and the south (Trichinopoly) (Archer & Parlett 1992) used it in the 19th century, especially for series of paintings of religious festivals and of "trades and castes", for sale to East India Company employees as cheap souvenirs. A comparable series of more 'scholarly' and accurate natural historical subjects executed on mica, an album of orchids in the British Museum, has turned out to be copied from illustrations in a book *Orchids and how to Grow them in Indian and other Tropical Climates* by Samuel Jennings, published in London in 1875 (Dallapiccola 2010). This, together with the prevalence of copying in Indian artistic practice, and the accuracy of the bird depictions, made me think that these birds might also be derived from another source. Familiarity with the leading players in natural-history studies in mid-19th century Madras and the wonders of the Biodiversity Heritage Library, rapidly enabled the source to be identified. Of the 24 drawings contained in the Linnean album, no fewer than 20 are versions of drawings published as hand-coloured lithographs in the exquisite *Illustrations of Indian Ornithology* by the East India Company surgeon Thomas Caverhill Jerdon (Jerdon 1847). The link is particularly close since Jerdon maintained at Trichinopoly:

> a staff of native artists, and taught them to paint in a much better style than they had been accustomed to. Before he took them in hand, their art was confined to quaint representations of natives of all castes and callings, and coaches drawn by impossible bullocks, and laden with yellow-skinned Rajahs and Ranees, all

> painted on talc or on rice paper. But under Dr Jerdon's teaching these people became apt in faithful and laborious representation of the feathered tribes, and attained a really very high pitch of excellence. With true Hindoo patience, every feather—nay, every vane and cirrus of each feather—was separately and truly shown ... These also were painted on rice paper or on sheets of talc. (Burton, 1888: 61)

Aasheesh Pittie (2016) has recently made a meticulous study of Jerdon's book, treating both bibliographic and ornithological aspects. The Shortt drawings are versions of prints from all four parts of Jerdon's work (two from Part 1; four from Part 2; nine from Part 3 and five from Part 4).

**Fig 1** Thomas Caverhill Jerdon

The Shortt versions date from a decade later and show a greater degree of stylisation and simplification compared with the prints. Four were not published by Jerdon (Fig 1) and of these one is so badly misidentified as to suggest that its production was not supervised by an ornithologist. In the album, the drawings do not appear in the same order as the book and are not arranged taxonomically. The English names on the album pages contain many spelling mistakes and cannot have been written by Shortt. They appear to have been written by a non-native speaker, some being unintentionally amusing, not least the "Heart stopped Woodpecker"; the "male Woodpeckoker" actually represents the female of the species. All of which suggests that the Shortt collection may not have been copied directly from Jerdon's book, rather from a reference set of illustrations, the majority of which had originally been commissioned and supervised by Jerdon, but which were retained by the artist(s), augmented by later, unsupervised works for copying and sale to future, perhaps less exacting, patrons.

Jerdon's illustrations, however, were hybrid in nature. Although most of the birds were the work of his Indian artists, Jerdon acknowledged some of the plant details and landscape backgrounds to be the work of a fellow Madras officer, later identified by Walter Elliot (1873) as Captain Samuel Best of the Madras Engineers. The *Vaccinium* in the background of the Nilgiri flowerpecker (No. 20), is doubtless an example of Best's work, copied by the Trichinopoly artist on this version on mica. Elliot also stated that several of the bird drawings (presumably of rarer Malabar species) were supplied to him by Samuel Neville Ward, a Madras lawyer and FLS, well known for his bird and insect drawings (Noltie 2016b: 245).

Despite Shortt's understanding, as expressed in the hand-written title of the album, the birds represented are, in fact, not all natives of South India, suggesting that he may have been unaware of the Jerdon source, as in the subtitle and text of the *Illustrations* Jerdon made it clear that he had contacts in other parts of India, not least among whom was Darwin's correspondent Edward Blyth in Calcutta. The artist too may have been unaware of Jerdon's text, and of the selection chosen for reproduction in this album, whether by accident or otherwise, he has included two of the three Himalayan species depicted in the *Illustrations* and the only one from Ceylon, which was provided for Jerdon by Lord Arthur Hay.

What of the album's commissioner and donor? John Shortt (1822–89) was a very interesting Anglo-Indian medic and veterinarian. I first came across him in the course of my work on Hugh Cleghorn (Noltie 2016a: 61), but his life and work (especially the veterinary side) has been studied in greater detail by Raman *et al*. (2016). Shortt was educated at the Madras Medical College where he qualified as an apothecary in 1846 and, very unusually for someone of his background, travelled to Britain. He arrived at Edinburgh early in 1854 with a decidedly patronising letter of introduction from Cleghorn to Professor John Hutton Balfour, Regius Keeper of the Royal Botanic Garden. Cleghorn explained that Shortt was Anglo-Indian (i.e. of mixed race) and that due allowance should be made for his "colour and manners". That this visit was possible (and that he had the enormous sum of £400 with him to cover expenses) was due to the gratitude of the family of a wealthy young officer whose life he had saved from cholera (Scharlieb 1924: 30/1). In April 1854, Shortt graduated MD not from Edinburgh, but from King's College, Aberdeen, by which time he was already a member of the London Royal College of Surgeons (MRCS), and at the same time he appears to have studied in the Dick Veterinary College in Edinburgh. On his return to India that same year, Shortt entered the Madras Medical Service as an Assistant Surgeon. He rose through the Medical Service, through the post of Superintendent-General of Vaccination, retiring with the rank of Surgeon Major and Deputy Surgeon-General in 1878 (Crawford 1930: 344). Throughout his medical career and during retirement, Shortt worked and published on a remarkable range of agricultural and veterinary matters (notably his *Manual of Indian Cattle and Sheep*, which went into three editions between 1876 and 1889), in addition to economic botany (on coconut, indigo and coffee), snake poisoning and anthropology (especially on the people of the Nilgiri Hills).

"Shortt published on a remarkable range of agricultural and veterinary matters, in addition to economic botany, snake poisoning and anthropology."

Shortt visited Britain for a second time in 1860, and it was in this year that he was elected FLS. His proposers for fellowship were John J. Bennett and John Edward Gray

(respectively Keepers of Botany and Zoology at the British Museum), George Robert Gray (JEG's brother, an ornithologist at BM), William Baird (a zoologist at BM, with an Edinburgh MD, who had been an East India Company surgeon 1823–33), Thomas Moore (Curator of the Chelsea Physic Garden, with special interests in ferns), Thomas Spencer Cobbold (a zoologist, also with an Edinburgh MD, at this point lecturer in botany St Mary's Hospital). This list suggests that Shortt's interests were mainly zoological, but he would publish in the Society's journals on branching palms, a heronry, and on ants. It was prior to his election, perhaps as a 'calling card', that on 1 December 1859, he presented the Society with the album of bird drawings. At the same time he also presented herbarium specimens of ferns, clubmosses and mosses from around Madras and what were presumably leaf "skeletons of *Ficus religiosa*", but these have not survived the various purges of the Society's herbarium.

## REFERENCES

Archer M. & Parlett G. 1992. *Company Paintings: Indian Paintings of the British Period*. London: Victoria & Albert Museum.

Burton E. F. 1888. *An Indian Olio*. London: Spencer Blackett.

Crawford D. G. 1930. *Roll of the Indian Medical Service 1615–1930*. London: W. Thacker & Co.; Calcutta & Simla: Thacker, Spink & Co.

Dallapiccola A. L. 2010. *South Indian Paintings: a catalogue of the British Museum collection*. London: British Museum Press.

Elliot Sir W. 1873. Memoir of Dr T.C. Jerdon. *History of the Berwickshire Naturalists' Club*, pp 143–52.

Jerdon T. C. 1843. *Illustrations of Indian Ornithology*. Part 1. Madras: J.B. Pharoah.

Jerdon T. C. 1845. *Illustrations of Indian Ornithology*. Part 2. Madras: Christian Knowledge Society's Press.

Jerdon T. C. 1846. *Illustrations of Indian Ornithology*. Part 3. Madras: Christian Knowledge Society's Press.

Jerdon T. C. 1847. *Illustrations of Indian Ornithology*. Part 4. Madras: American Mission Press.

Noltie H. J. 2016a. *Indian Forester, Scottish Laird: the botanical lives of Hugh Cleghorn of Stravithie*. Edinburgh: Royal Botanic Garden Edinburgh.

Noltie H. J. 2016b. *The Cleghorn Collection: South Indian Botanical Drawings 1845 to 1860*. Edinburgh: Royal Botanic Garden Edinburgh.

Pittie A. 2016. A bibliographic assessment of T.C. Jerdon's *Illustrations of Indian Ornithology* (1843–1847). *Indian Birds* 12: 29–49.

Raman R., Narayanasamy C. & Raman A. 2016. Surgeon John Shortt on native cattle breeds of Southern India in 1889. *Asian Agri-History* 20: 93–105.

Scharlieb M. 1924. *Reminiscences*. London: Williams & Norgate.

## *Appendix: Catalogue of the Drawings*

**All drawings ca. 110 x 155 mm, gouache on mica, by an unknown Trichinopoly artist, c. 1859.**

**1.** Bonelli's eagle (***Aquila fasciata*** Viellot)
Annotated in pencil on the supporting sheet: 'Nisaetus Strennas'.
A version of Plate 1 of Jerdon's *Illustrations* (part i, 1843), which is named *Nisaetus strenuus* on the plate, but *N. grandis* in the letterpress and *N. Bonelli* on the contents page.

**2.** Black bittern (***Ixobrychus flavicollis*** Latham)
Annotated in pencil on the supporting sheet: 'Ardea Flavicollis lath.'
A version of Plate 16 of Jerdon's *Illustrations* (part ii, 1845), which is named *Ardea nigra* on the plate, but *A. flavicollis* Latham in the letterpress and on the contents page.

**3.** Slender-billed scimitar babbler (***Pomatorhinus superciliaris*** Blyth) (Fig 2)
Annotated in pencil on the supporting sheet: 'Simitar Billed Babbler'.
A version of Plate 49 of Jerdon's *Illustrations* (part iv, 1847), in which it is called *Xiphorhamphus superciliaris*.
Note. This bird is not South Indian, the specimen drawn was from Darjeeling, probably supplied by Edward Blyth.

**Fig 2** Slender billed scimitar babbler (*Pomatorhinus superciliaris* Blyth)

**4.** Oriental Scops owl (***Otus sunia*** Hodgson)
Annotated in pencil on the supporting sheet: 'Red scops Owl'.
A version of Plate 41 of Jerdon's *Illustrations* (part iv, 1847), in which it is called *Scops sunia*.

**5.** Asian paradise-flycatcher, male of the white form (***Terpsiphone paradisi*** L.)
Annotated in pencil on the supporting sheet: 'Sultan Bulbul male'.
This is not taken from Jerdon's *Illustrations* (at least from any of the published parts).

**6.** Asian paradise-flycatcher, male of the rufous form (***Terpsiphone paradisi*** L.)
Annotated in pencil on the supporting sheet: 'Sultan Bulbul Female'.
This is not taken from Jerdon's *Illustrations* (at least from any of the published parts). In the letterpress for Jerdon's Plate 7 'Sultana Bulbul' is given as the translation of the Hindustani name of the chestnut form, but this drawing is incorrectly labelled as 'female', whereas it shows the male of the rufous form of the species.

**7.** Heart-spotted woodpecker, male (***Hemicircus canente*** Lesson)
Annotated in pencil on the supporting sheet: 'Heart stopped Woodpecker'.
A version of part of Plate 40 of Jerdon's *Illustrations* (part iii, 1846), in which it is called *Picus cordatus* and *Hemicircus cordatus*.

**8.** Heart-spotted woodpecker, female (***Hemicircus canente*** Lesson)
Annotated in pencil on the supporting sheet: 'male Woodpecoker'.
A version of part of Plate 40 of Jerdon's *Illustrations* (part iii, 1846), in which it is called *Picus cordatus* and *Hemicircus cordatus*.

**9.** Flame-throated bulbul (***Pycnonotus gularis*** Gould) (Fig 3)
Annotated in pencil on the supporting sheet: 'Ruby Throatened Bulbul'.
A version of Plate 37 of Jerdon's *Illustrations* (part iii, 1846), in which it is called *Brachypus rubineus*.

**Fig 3** Flame-throated bulbul (*Pycnonotus gularis* Gould)

**10.** Asian paradise-flycatcher, male (***Terpsiphone paradisi*** L.)
Annotated in pencil on the supporting sheet: 'Mussepita'.
A version of Plate 7 of Jerdon's *Illustrations* (part i, 1845), in which is called *Muscipeta paradisea* on the plate and in the text.

**11.** Malabar white-headed starling (***Sturnia blythii*** Jerdon)
Annotated in pencil on the supporting sheet: 'Pastor Blythy'.
A version of Plate 22 of Jerdon's *Illustrations* (part ii, 1845), in which it is called *Pastor Blythii*.
Note. Sometimes treated as a subspecies of the S and E Asian chestnut-tailed starling as *S. malabarica blythii*.

**12.** Indian bushlark (***Mirafra erythroptera*** Blyth)
Annotated in pencil on the supporting sheet: 'Red Winged Lark'. (Fig 4)
A version of Plate 38 of Jerdon's *Illustrations* (part iii, 1846), where the species was described.

**Fig 4** Indian bushlark (*Mirafra erythroptera* Blyth)

**13.** Oriental dwarf kingfisher (***Ceyx erithaca*** L.)
Annotated in pencil on the supporting sheet: 'King fisher'.
A version of Plate 25 of Jerdon's *Illustrations* (part ii, 1845), in which it is called *Ceyx tridactyla*.

**14.** Brahminy kite (***Haliastur indus*** Boddaert)
Annotated in pencil on the supporting sheet: 'Bromony Kite'.
This is not taken from Jerdon's *Illustrations* (at least from any of the published parts).

**15.** Jerdon's leafbird (***Chloropsis jerdoni*** Blyth)
Annotated in pencil on the supporting sheet: 'Common Green Bulbul male Female'.
A version of Plate 43 of Jerdon's *Illustrations* (part iv, 1847), in which it was named by Blyth as *Chloropsis Jerdoni*.

**16.** Besra (***Accipiter virgatus*** Temminck) (Fig 5)
Annotated in pencil on the supporting sheet: 'Accipiter Besra'.
A version of Plate 29 of Jerdon's *Illustrations* (part iii, 1846), in which it is called *Accipiter Besra*.

**Fig 5** Besra (*Accipiter virgatus* Temminck)

**17.** Eastern grass owl (***Tyto longimembris*** Jerdon)
Annotated in pencil on the supporting sheet: 'Long Legged Grass Owl'.
A version of Plate 30 of Jerdon's *Illustrations* (part iii, 1846), in which it is called *Strix candida*.

**18.** Black-rumped flameback (***Dinopium benghalense jaffnense*** Whistler)
Annotated in pencil on the supporting sheet: 'Red woodpecker'.
A version of Plate 47 of Jerdon's *Illustrations* (part iv, 1847), in which it is called *Picus ceylonus*. Note. This race occurs in Ceylon but not in South India, the specimen drawn was sent by Lord Arthur Hay.

**19.** Sapphire flycatcher (***Ficedula sapphira*** Blyth)
Annotated in pencil on the supporting sheet: 'Sapphire Billed Babbler'.
A version of Plate 32 of Jerdon's *Illustrations* (part iii, 1846), in which it is called *Muscicapula sapphira*. Note. Native to the Himalaya and not found in South India, the specimen drawn was from Darjeeling, probably supplied by Edward Blyth.

**20.** Nilgiri flowerpecker (***Dicaeum concolor*** Jerdon)
Annotated in pencil on the supporting sheet: 'Olive flower pecker'.

A version of Plate 39 of Jerdon's *Illustrations* (part iii, 1846), where the species was described. Note. According to the letterpress the bird is perched on 'pink arbutus', a species 'of *Thibaudia*' of the Nilgiri Hills, now known as *Vaccinium leschenaultii*.

**21.** Lesser florican (***Sypheotides indicus*** Miller)
Annotated in pencil on the supporting sheet: 'Black Floriken'.
A version of Plate 33 of Jerdon's *Illustrations* (part iii, 1846), in which it is called *Otis aurita*.

**22.** Velvet-fronted nuthatch (***Sitta frontalis*** Swainson)
Annotated in pencil on the supporting sheet: 'Small Blue Kingfisher'.
This is not in Jerdon's *Illustrations* and was clearly not produced under the supervision of an ornithologist. It is not a kingfisher and the aquatic background is inappropriate. If it is not an invention on the part of the artist, Aasheesh Pittie and L. Shyamal (pers. comm.) inform me that the only South Indian bird that approaches this colouring is the velvet-fronted nuthatch.

**23.** Malabar parakeet (***Psittacula columboides*** Vigors)
Annotated in pencil on the supporting sheet: 'Gungle parrot'.
A version of Plate 18 of Jerdon's *Illustrations* (part ii, 1845), in which it is called *Palaeornis columboides*.

**Fig 6** Long-billed pipit (***Anthus similis*** Jerdon)

**24.** Long-billed pipit (***Anthus similis*** Jerdon) (Fig 6)
Annotated in pencil on the supporting sheet: 'Mountain Titlark'.
A version of Plate 45 of Jerdon's *Illustrations* (part iv, 1847), where the species was described.

**Since the April issue went to press we have sadly lost two past Presidents, so priority is given to them in this issue, as well as to our oldest Fellow, Professor David Goodall (elected FLS in 1945), who travelled from Australia to Switzerland to end his life on 10 May 2018.**

**Professor R. J. (Sam) Berry (1934–2018):** Sam Berry was President of the Society from 1982 to 1985 and became the second Editor of the *Biological Journal of the Linnean Society* (1978–1990). His contribution to the journal has been recognised in a Virtual Issue, bringing together his own papers and available online at https://academic.oup.com/biolinnean/pages/rj_berry_virtual_issue
His Memorial service on 23 April at St Nicholas's church Sevenoaks brought together family, friends and a wide range of former colleagues, to celebrate his "passing on" (in his wife Caroline's words) and reflected all aspects of his varied career, interests and beliefs. https://www.telegraph.co.uk/obituaries/2018/04/20/professor-rj-sam-berry-obituary/

**Dr Lincoln Brower (1931–2018):** News of the death of Lincoln Brower, elected in 1981, specialist on Monarch butterflies and a 1993 Linnaean medallist came from Fellow R. I. Vane-Wright. More information on Dr Brower and his achievements was published by Linda Fink and Vane-Wright in *Antenna* 31(4).

**Professor David Goodall (1914–2018):** Professor Goodall made headlines in various newspapers and press, when, at 104, he used a crowdfunding campaign to travel business class, with his family, from Australia to end his life in Switzerland following deterioration in his eyesight and mobility. He had been a member of Exit International, an assisted dying advocacy group for more than 20 years and had campaigned for Australia to legalise the procedure. Goodall was a huge contributor to the study of plant physiology and was editor-in-chief of the 30-volume book series *Ecosystems of the World*, which began in 1972. He was referred to as being the oldest practising scientist in Australia. Futher details of his academic life can be found on Wikipedia. A report on his final

> "David Goodall was editor-in-chief of the 30-volume book series *Ecosystems of the World*, which began in 1972."

days can be found here: https://www.theguardian.com/society/2018/may/10/david-goodall-australias-oldest-scientist-ends-his-own-life-at-104

**Jill, Duchess of Hamilton (1940–2018):** A larger than life figure, with a wide-ranging career as a journalist, Jill became interested in botany, publishing several horticultural books. She developed the *Flora for Fauna* project in association with the Society and, with Chris Humphries, exhibited at Chelsea Flower Show. For more information see: https://www.thetimes.co.uk/edition/register/jill-duchess-of-hamilton-obituary-2mlcspx2n

**Sir David Smith (1930–2018):** A more recent death is that of Sir David Smith FRS, FRSE, PPLS. Having been elected as a Fellow in 1975, Sir David went on to become the Society's President in 2000. His Presidency came in the interval between the Society's Bicentenary celebrations and the Linnaean Tercentenary events of 2007, a period of consolidation, which included a new website, widening our outreach through participation in Open House London and Action for Biology in Education as well as contact with the House of Lords Select Committee on Science and Technology over the loss of skills in systematic biology.
https://www.scotsman.com/news/obituaries/obituary-sir-david-smith-botanist-and-former-principal-of-edinburgh-university-1-4771714

**Mary Gregory (1932–2017):** Mary Gregory became a Fellow of the Society in 1979. A wood anatomist, she joined the Jodrell Laboratory at the Royal Botanic Gardens, Kew in 1961, later publishing her work *Bibliography of Systematic Wood Anatomy of Dicotyledons* in 1994. Mary also led a team of volunteers in a project databasing Kew's microscope slide collection (150,000 slides). See *IAWA* Journal 38 (4), 2017

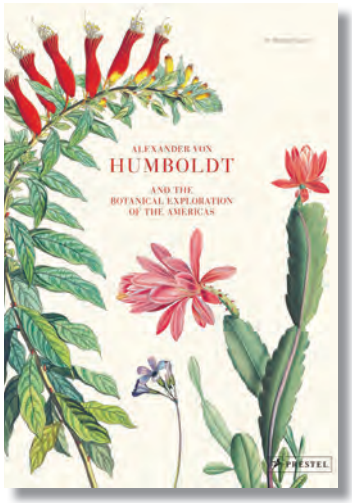
**Professor Hedley John Gooding (1926–2018):** Agronomist and horticulturalist Professor Hedley John Gooding passed away in March at the age of 91. Head of Horticulture and Beekeeping at The West of Scotland Agricultural College and visiting Professor at the University of Strathclyde, he published on such species as the pigeon pea (*Cajanus cajan*). Professor Gooding became a Fellow in 1960.

**Dennis Fowler (1929–2018):** Botanist and ethnographer Dennis Fowler had been a Fellow for six years when he passed away. Despite having no formal training as a botanist, he was empassioned to study plants after a trip to Zambia in the 1950s. After contracting malaria he was intent on helping find a viable and cheap treatment for the local people. His work documenting the uses of African plants has led to the publication of his major work *Zambian Plants: Their Vernacular Names and Uses* in 2007. He was awarded an MBE in 2015.

# Alexander von Humboldt and the botanical exploration of the Americas

**H. W. Lack (2nd revised edition)**

290pp, Prestel: Munich/London/New York, 2018,
hardback. Colour illustr. £45.00/$48.00 (US)
ISBN 978-3-7913-8415-3




"Alexander von Humboldt continues to attract our attention, perhaps even more than before, following Andrea Wulf's bestselling Humboldt biography *The Invention of Nature*. Botanist and biohistorian Hans Walter Lack (Berlin and Vienna) convincingly argues why another book, completely focusing on Humboldt's botanical legacy, is still opportune. In this book he sets out to fill gaps in our knowledge of the quite modern methodology for collecting and recording by Humboldt and Aimé Bonpland, and of the extended team who published the botanical findings later. Other aspects, such as the unprecedented outcome of reliably naming and classifying hundreds of new plant species and the emergence of phytogeography as a new branch of botany, also receive the attention they deserve.

In ten chapters the reader is presented with a summary of Humboldt's CV (illustrated with a little-known portrait of the genius aged 15, wearing a powdered wig) but we are also introduced to the main players in the botanical network: Bonpland, the consummate collector and plant enthusiast, who later became the Empress Joséphine's head gardener in Malmaison, subsequently leaving Paris for Argentina; Carl Ludwig Willdenow, guardian and reviser of Linnaeus' *Species Plantarum*, recipient of part of Humboldt and Bonpland's collections and early author of several new species in Berlin; Pierre Jean Francois Turpin the botanical artist who admirably illustrated 700 of the published plant species; Carl Sigismund Kunth, brilliant taxonomist who undertook the herculean task to describe, name and classify the vast majority of collections over a period of 25 years; William Jackson Hooker, director of Kew Gardens who adopted the "humboldtian" mosses, fungi and lichens for expert revision; the French botanist Michel-Félix Dunal who published on 42 Solanaceae collections; and finally Eulali Delile, the botanical artist who beautifully illustrated the grasses in the last volume of Kunth's *Nova Genera et Species Plantarum*. All contributions of these *dramatis personae* are carefully recorded and dated, in a very readable narrative. It is all the more disappointing that the publishers have made a mess of the table summarizing the order of publication of the hundred plus botanical instalments that constituted parts 5 and 6 of Humboldt & Bonpland's glorified *Voyage aux régions équinoxiales* published between 1805 and 1834.

A significant part of this book is devoted to reproductions of a selection of superb botanical illustrations—copper plates and stipple engravings, 82 in all, which are nowadays inaccessible to scholars or the general public, hidden as they are in rare book rooms, and only to be touched with gloved hands. Lack devotes much attention to the use of herbarium specimens and nature prints used to accurately achieve the illustrations. One is pleasantly surprised to find a very fine orchid drawing by von Humboldt himself, as well as a comparison between a miserable dried specimen of *Werneria*, and its coloured image, "revived" by Turpin.

Altogether this is a fascinating book full of relevant information on the botanical heritage of, in the words of Charles Darwin—"the greatest travelling scientist who ever lived", and whom Walter Lack here unmasks as a very effective coordinator of an immense and complex project, who had the gift to surround himself with the right talents to complete the job in a reasonable time.

**Pieter Baas FMLS**

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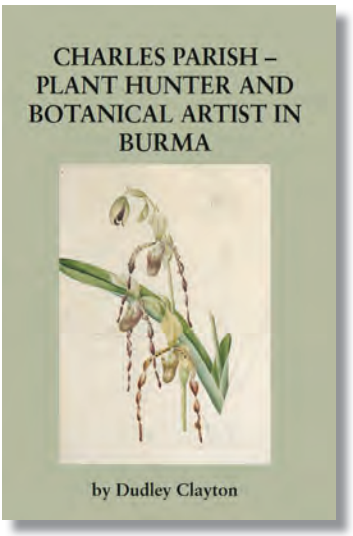
## Charles Parish: Plant Hunter and Botanical Artist in Burma

**Dudley Clayton**

290pp, London: The Ray Society, 2017, hardback. Vol. 179. Colour and halftone illustr. £85.00 (£28 single purchase to members)
ISBN 978-0-903874-50-2




Charles Samuel Pollock Parish (1822–97) ministered as a chaplain to the British garrison in Moulmein, Burma, for most of the third quarter of the nineteenth century. In 1854, two years after taking up this chaplaincy, he married Eleanor Isabella Sarah Johnson (1831–1905) in Moulmein. The couple moved to Britain with their children when Charles Parish was granted furlough in 1871, and whereas he returned to Burma for around three years, Eleanor remained in Somerset. While in Moulmein both Eleanor and Charles Parish painted the native orchids of southern Burma, and 148 of the 300 or so extant watercolours form the bulk of this book. These fine botanical paintings, in two volumes, were presented, with a little reluctance, to the Royal Botanic Gardens, Kew, by Eleanor Parish in 1898: "it was his intention to offer them, but I could not make up my mind to part with them, as we had shared the pleasure of doing them together …"

This volume will be of most interest to orchidophiles, especially for Parish's own notes about the plants he had collected, and for the paintings. The appendixes are useful but a sequential listing by the "collection" numbers which Parish applied to his specimens and the corresponding paintings might have been included, and a much more comprehensive set of indexes. Some of the material has been published elsewhere (D. Clayton 2014) although that reference is not included in the bibliography to this book.

Charles Parish had been born in India (as had his wife), but came to England for his education, entering St Edmund Hall, Oxford, in 1836. He graduated in 1841, and after training for the priesthood, was ordained in June 1846. His interest in natural history appears to have been stimulated while he was at Oxford, and the earliest evidence for Parish's liking for botany dates from 1844. Specimens of bryophytes and flowering plants so dated are in his personal herbarium, now preserved in Somerset Heritage Centre, Bridgwater (listed in Appendix I).[1] However, they clearly demonstrate that when Parish arrived in Burma, he was already an experienced amateur botanist.

Evidently, Parish's parochial duties were never so onerous as to fill all his time, and from 1855 he occupied spare time with collecting, and sometimes dissecting, drawing and painting plants, especially orchids. The pressed specimens and seeds he sent to the Royal Botanic Gardens, Kew, show that Parish did not restrict his botanical explorations to orchids although clearly he gave much more attention to them.[2] Clayton's book exclusively treats orchids, despite its more general title, so it is worth noting that Parish's non-orchid specimens are also sometimes accompanied by drawings (for example, K000858431, *Ornithoboea parishii* (Gesneriaceae)). Moreover, some of the pressed orchid specimens are accompanied by watercolour sketches done on the mounting sheets, including *Dendrobium infundibulum* (Parish no. 130; K000363091) and *D. eburneum* (Parish no. 131; K000061910). These extraneous orchid watercolours are not accounted for in Appendixes II and III.

While Charles Parish was solely responsible for the majority of the orchid paintings, Eleanor deserves more than a mention. Sometimes she coloured her husband's drawings—*Paphiopedilum parishii* (plate 1 and dust-jacket) is one example—but she also completed whole portraits such as those of *P. villosum* (plate 2) and *Coelogyne schilleriana* (plate 22). Appendix II accounts for the artists, but not always correctly, and there are careless errors in the captions to the plates (most noticeably, plate 147 which is signed "H. M. Parish" [Hawtayne Macrae Parish (1861–1945), their eldest

1 Most of those plants are of English origin, but in 1845 he botanized in Scotland, and in 1848 in north Wales. The few Irish specimens (four mosses from Wicklow and Spring Squill (*Scilla verna*) from Dublin) are hardly evidence for him visiting Ireland in 1846; they could have been obtained by exchange. In any case the sources and dating of some specimens, as given in Appendix I, are confused, not helped by evident misprints.

2 His contribution to the exploration of the flora of Burma was recognised in *Parishia* (Anacardiaceae), and species in at least 30 genera in various families including Orchidaceae were dubbed *parishii* after him.

son] and dated 4 December 1889). As reproduced in this volume, most of the orchid portraits have an unpleasant brown background, presumably because the paper has turned that colour. It would have been helpful to have had an indication of the scaling—some paintings appear to be enlarged beyond natural size, while others may have been significantly reduced.

While basic biographical facts are provided, there is nothing about his family life, and little to indicate Charles Parish's character, as Clayton notes. He was certainly enthusiastic, even perhaps single-minded, about orchids, but was he irascible, intolerant and self-centred? Parish's extant correspondence, which Clayton has used, was almost entirely confined to botanical matters, and Eleanor's letters, if she wrote any, have not survived. So, alas, a reader gets little sense of place or society and the emphasis on orchids results in a major gap in defining Parish's botanical work in southern Burma.

**E. Charles Nelson FLS**

**Reference**

Clayton D. 2014. The Reverend Charles Samuel Pollock Parish—plant collector and botanical illustrator of orchids from Tenasserim Province, Burma. *Lancasteriana* 13(3): 215–227)

## Sunshine & Good Humour:
## Travels of a painter in Tropical America

**Nigel Hughes**

316pp, 2017, hardback. Illustr., maps. £25.00
ISBN 978-1-5262-0712-8
(Available via www.nigelhughes.com)


The travels and adventures recounted here take one from Mexico to Argentina and to almost every country in between. The author's experience in Latin America began as a young man breaking in horses on a ranch in Argentina. After a time as a land agent in Herefordshire the urge to travel returned and he ended up in Panama and wandered north into the Mayan territories where he began to study this ancient culture. His career as a travelling painter in Latin America really started in Central America and Mexico by painting Mayan ruins. During his time with the Mayans the author encountered and became fascinated with the large turkey-like birds, curassows. This resulted in his setting himself a most ambitious task, to paint all 50 species of the family Cracidae that includes the guans, curassows and chachalacas.

These birds range from Texas to Argentina and some are extremely rare and confined to a very small range and so to find them all involved extensive travel throughout Latin America. This is a story of persistence, sacrifice and sheer determination to see and paint every species alive at considerable personal cost. The successful result is that all 50 species were painted from living birds set in their correct habitat. A few were painted from captive birds in zoos or private collections, but the author managed to see the majority of species in the wild in some of the remotest areas of the region. One species, the Alagoas curassow (*Mitu mitu*), only survives in captivity. When he did not find a particular species in nature Hughes made meticulous sketches of the habitat in order to place the captive birds in their correct environment in the painting.

Some of the sites visited are put nicely into context by referring to the history and work of previous naturalists in the areas; the history of the Mayans and their famous standing stones (stelae), the Nazca lines in Peru and how Bolivia became a landlocked country (amongst many other informative insights into Latin America). It is also a story of the generous hospitality of people throughout the region, varying from the Grenadier Guards stationed in Belize, friendly local ornithologists and guides through to the Leach family in Argentina, owners of a large private nature reserve. It is obvious that as work on painting the Cracidae progressed, the author was moved by the precarious situation of many species and became an increasingly strong advocate of habitat conservation. This is illustrated by his membership of the UK board of the Colombian bird conservation charity *ProAves*.

This book is a fascinating mixture of natural history, geography, and the culture and history of Latin America and especially its friendly peoples. I concluded that the adventures of a field painter in Latin America are as varied and as exciting as those of a field botanist.

**Sir Ghillean Prance PPLS**

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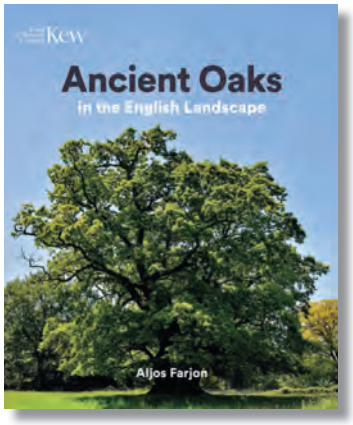
## Ancient Oaks in the English Landscape




**Aljos Farjon**

316pp, London: Kew Publishing RGB Kew, 2017, hardback. £30.00
ISBN 978-1-84246-640-7

If you were one of the lucky people to have had a seat at "the most populated event in the history of the Linnean Society" at Burlington House on 18 February 2016, then this book on England's national tree will do much to bring back memories of that event. Aljos Farjon FLS, along with the foreword by L. Banks

and chapter 10 on biodiversity of ancient oaks by M. Ainsworth, P. Wolseley and K. Alexander, writes here about *Quercus robur* L. and some rarer oaks from England. Farjon makes it clear that this is not just a botanical book, rather a work to interest also the historian and the archaeologist. His 'Introduction' defines English oaks as "ancient" where their trunks are at least 6m in girth, typically acorns pre-1600. He mistakes Oak Apple Day, 29 May 1660, with the escape of Charles Stuart from Worcester in 1651. Farjon refers to historic documents back to the Domesday Book (1086), but his 248 References span 1598–2016.

Farjon's ten chapters cover several aspects of oaks' history and biology, especially their ecology in England under human management. He describes their life history and growth, with their longevity up to a thousand years, second only to the yew in the native English flora. Trunk circumference and growth rings are key to ageing oaks, but central decay often limits their dendrochronology. The maps in chapter 3 cover aspects of the general distribution of "ancient and veteran" oaks, with chapters 4 and 5 giving county-specific data on these trees in relation to pre-1600 deer parks, Royal Forests, chases and wooded commons.

The wider geographical context of ancient oaks is considered; the author asks why so many of them survive in England compared to elsewhere in the British Isles and in 15 countries in mainland Europe, as far east as Ukraine. He proposes somes answers in chapter 7; demands for fuel and naval timber, interest in deer parks pre-1600 and more modern aspects of forestry. I especially enjoyed Farjon's account of the recolonization of what is now England by oaks and other plants after the latest glaciation, some ten thousand years ago. As a palaeobotanist, I found his remark "We can only surmise what the distant past was really like" pessimistic; given the wealth of data from bog oaks and pollen analyses, we can surely do more than guess about prehistoric English *Quercetum mixtum*. In chapter 9 Farjon selects 23 sites for ancient oaks that he considers "most important". Here we find evidence of the many hours he has spent travelling to locate, measure and photograph these fascinating trees.

Three supporting authors (listed earlier) give accounts respectively of non-lichenized fungi, lichens and invertebrates (mostly beetles) relating to biodiversity of ancient oaks.

No book is fully comprehensive, so what is missing here? Perhaps some assessment of the effects on England's oaks of the 1987 hurricane? Given C. R. Darwin's acknowledgment of P. Matthew's *Naval Timber and Arboriculture* (1831) priority over *The Origin …* (1859) in recognizing natural selection in oaks relating to the quality of wood for the Royal Navy, maybe Farjon could have written here about how English oaks have helped our grasp of evolutionary theory. However, this book is both a fascinating read and a feast for the eyes; the 'Glossary' is helpful and the humanity found in Farjon's 'Acknowledgments' is heart-warming. Fellows who read this work will surely wish him well in his continuing work on the *Ancient Tree Inventory* database.

**H. L. Pearson FLS**

# 230th Anniversary Meeting of the Linnean Society

held at Burlington House, Piccadilly, London W1J 0BF

**4.00 pm, Thursday 24 May 2018**

1. **The President** took the Chair and warmly welcomed 103 Fellows and 41 guests to the meeting.
2. **Apologies** had been received from 22 Fellows.
3. **Admission of Fellows**: The following signed the Obligation in the Roll and Charter Book and were admitted as Fellows: Morton ADAMS, Andy CHICK, Roger HORTON, Mohammed ISHTIAQ, Anthony ROACH, Christian DE VARTAVAN.
4. The **Minutes of the Meeting held on 17 May 2018** were accepted and signed.
5. **Third Reading of Certificates of Recommendation for FMLS and HonFLS:**

   a. **Foreign Members:** ***Professors Peter and Rosemary Grant***

   Emeritus Professors, Peter and Rosemary Grant, are British evolutionary biologists based at Princeton University. Their remarkable long-term studies demonstrate evolution through natural selection in action in Galápagos finches. Since 1973, they have spent up to six months each year capturing, tagging, measuring and taking blood samples for DNA analyses from finches on Daphne Major Island, elucidating the mechanisms by which new species arise and how genetic diversity is maintained in natural populations. The work of the Grants has had a seminal influence in the fields of population biology, evolution, and ecology.

   b. ***Fellow honoris causa:*** ***Dr Michael Fitton***

   Dr Michael Fitton, an entomologist, formerly of the Natural History Museum, London (NHM) and a Scientific Associate there, is being recognised for his contribution to the Linnean Society of London as the Society's Curator of Insects, undertaken with great care and commitment from 1976 to 2017—41 years in total. He oversaw the recuration and rehousing of the entire collection, which comprises James Edward Smith's as well as Linnaeus's insects. He also stimulated the production of comprehensive nomenclatural treatments of Linnaeus's species in significant groups, including butterflies, moths, bees, wasps, grasshoppers and scale insects.

6. **Appointment of Scrutineers**. Council members Rosie Atkins, Professor Juliet Brodie and Dr Mark Watson.
7. **Ballots**. Fellows voted in the ballots for Members of Council (5 of 5 nominees), the Officers (6), FMLS (2) and Fellow hc (1) and for ordinary Fellows (43).
8. **Citations and Presentations of Medals and Awards.** Rolling PowerPoint presentations were shown during the reading of the citations.

**a.** The **2018 Linnean Medal in the field of Botany** was awarded to **Professor Kamaljit Bawa**. The citation was read by ***President-Elect Dr Sandra Knapp:***

"Kamal Bawa, elected FRS in 2015, is a world-leading evolutionary ecologist and conservation biologist who has helped shape the direction of conservation science globally. He obtained his PhD in India, conducted his post-doctoral research in the US, and has been at the University of Massachusetts, Boston, USA since 1974, where he is now Professor of Biology. Bawa's pioneering multidimensional work has focused on tropical forest trees as natural resources, especially their reproductive and population biology and genetics, leading to new approaches to quantifying and mapping biodiversity and ecosystem services, and to classifying tropical vegetation. Programs he initiated in the Eastern Himalayas explore the impact of climate change on biodiversity, ecosystem services and rural livelihoods. Bawa was instrumental in founding India's leading conservation organisation, the Ashoka Trust for Research in Ecology & Environment (ATREE) which, in 2009, initiated a new web-based resource, the India Biodiversity Portal. In 2002, Bawa founded *Conservation and Society,* an international, peer-reviewed interdisciplinary open-access journal. Awards include the MIDORI Prize for Biodiversity in 2014, and in 2012, the inaugural Gunnerus Award in sustainability from the Royal Norwegian Society of Arts and Sciences. Cited more than 17,000 times, he has an h-index of 75, and i-10 index of 144. Through his work, he has been able positively to influence conservation outcomes for a billion or more human beings—as well as vast landscapes with irreplaceable biodiversity. He is thus a most worthy recipient of the Linnean Medal 2018."

**b.** The President presented the **2018 Linnean Medal in the field of Zoology** to **Dr Jeremy Holloway**. The citation was read by ***Scientific Secretary Dr Malcolm Scoble:***

"Dr Jeremy Holloway, a Cambridge graduate, worked for the International Institute of Entomology (now absorbed into CABI) based at the NHM, where he continues as a Scientific Associate. Jeremy is best known for his monumental 18 volume *Moths of Borneo*, published between 1983 and 2011, describing 4,630 species, many new, each volume almost a monograph. *Moths of Borneo* is used by lepidopterists around the world as a major work of reference, particularly for light shed on taxonomic categories and phylogeny above the species level. Jeremy set the standard for quantified transect sampling of

insects in the tropics. Fieldwork on species distribution patterns and diversity flowed from his PhD thesis on the application of numerical methods of analysis to biogeographical data. Sites included Mount Kinabalu (Sabah), New Caledonia and Norfolk Island, Mount Mulu National Park, Sarawak, northern Sulawesi and Seram. Jeremy's publication list runs to a further 158 entries, including several books. Jeremy has served on the Royal Society SE Asian Rainforest Research Committee and as official UK correspondent between The Royal Society and the Pacific Science Association. He is currently part of an international collaboration working on the higher classification of the Noctuoidea, and helping an on-line facility of images of the Geometridae of New Guinea. For his comprehensive work on the Bornean moth fauna, and his wider quantitative, analytical faunistic studies in SE Asia, Dr Holloway is a most worthy recipient of the Linnean Medal 2018."

**c.** The President presented the **2018 Linnean Medal in the field of Biology** to **Professor Sophien Kamoun**. The citation was read by ***President-Elect Dr Sandra Knapp***:

"Professor Sophien Kamoun is internationally recognised as a pioneer and leader in understanding the co-evolutionary arms race between plants and their pathogens. The evolution of these mechanisms has become the driving paradigm in the field of plant pathology. Professor Kamoun's work focuses on both genomics and effector biology of filamentous plant pathogens, mainly in the *Phytophthora infestans*-Solanaceae system, better known as late blight, the cause of the Great Irish potato famine (1845), while his work identifying the cause of ash dieback and developing methods for its detection has had profound policy implications. His work has changed the understanding of how pathogen effectors evolve in the face of host plant defence evolution, as is evidenced by his many publications in high impact journals. In addition to his work on pathogen evolution, Sophien Kamoun is an expert on tiger beetle evolution and has published extensively on these fascinating insects. Professor Kamoun has served on many boards and think-tanks, ranging from industry to academia and is a speaker at international meetings. He has been involved in priority setting and review teams in Canada, Germany and France, as well as the UK. He served from 2009–14 as Head of the Sainsbury Laboratory in Norwich. He teaches and runs workshops at the University of East Anglia, and maintains an active social media profile (@KamounLab). For his ground-breaking work in plant pathology and evolutionary biology in general, Professor Kamoun hugely merits the Linnean Medal."

**e.** The President presented the **2018 Darwin-Wallace Medal** to **Professor Josephine Pemberton**. The citation was read by ***the President***:

"Professor Josephine Pemberton was elected FRS in 2017 and is a prominent

*Medal and Award Winners: (Front Row L to R)* Juliet Williamson, Prof. Kamaljit Bawa, Dr Edwige Moyroud, Dr Thais Nogales de Costa Vasconcelos, Marcella Corcoran; *(Middle Row L to R)* Daniel Huston, Dr Alexander Hetherington, Prof. Josephine Pemberton, Niki Simpson, Dr Andrew Chick; *(Back Row L to R)* Prof. Sophien Kamoun, Dr Dan Danahar, Dr Jeremy Holloway, Prof. Paul Brakefield FRS PLS, President-Elect Dr Sandra Knapp

evolutionary biologist with many honours. An Oxford zoology graduate, Josephine undertook her PhD on population genetics of fallow deer at the University of Reading, followed by postdoctoral research at University College London and the University of Cambridge. Appointed as a BBSRC Advanced Fellow in Cambridge and Edinburgh, she became a Lecturer in 1994 at the University of Edinburgh and is now Professor of Molecular Ecology at the University of Edinburgh Institute of Evolutionary Biology. Josephine has pioneered genetic parentage analysis in wild animal populations, leading to new insights into understanding mating behaviour and natural selection. With her team, she has researched life history evolution through meticulous long-term studies of single populations of red deer on Rum and Soay sheep on St. Kilda, playing a key role in keeping these studies going. Employing molecular and genetic markers and analytical tools alongside thorough observational and survey work in the populations themselves, she has recovered pedigrees using

microsatellite-based parentage inference. She is now deeply involved in using genome-wide genotype information to understand the causes of differences in fitness between individuals and the causes of variation in the distribution of genetic variation in populations. For her considerable contribution to the field of evolutionary biology, Professor Pemberton is a most worthy winner of the Darwin-Wallace Medal 2018."

**f.** The President presented the **2018 Bicentenary Medal** to **Dr Edwige Moyroud**. The citation was read by ***the President:***

"Dr Edwige Moyroud has been Fellow in Natural Sciences at Queens' College, Cambridge since 2011, where she received the Prize for Outstanding Contribution to College Education in 2016. She joined the Sainsbury Laboratory at the University of Cambridge in September 2017, to start investigating pattern formation in petals and is currently a Research Group Leader. Edwige obtained her PhD in 2011 from the Ecole Normale Supérieure of Lyon (France) and the University of Grenoble, where she studied flower development. She aimed at understanding how living organisms can produce iridescence, an optical trick generated by the interaction of light with minute structures organized on or just below the surface of plants and animals, thus creating visible colours that are independent of chemical pigments. These patterns are striking examples of evolutionary diversification by natural selection. In flowers, the iridescent effect is due to ordered striations (like those on a CD) of the cuticle on the petal epidermis and pollinators use this iridescence to detect flowers. Edwige developed Venice mallow (*Hibiscus trionum*) as a model species, combining biomechanical modelling and optics with modern genetic analysis, live-tissue imaging and behavioural ecology, to understand how and when these nanostructures develop. It has led to a recent article in *Nature* with an accompanying News & Views showing how she is a 'star of the future'. Dr Moyroud thus truly merits the Bicentenary Medal."

**g.** The President presented **the 2018 Trail-Crisp Medal** to **Dr Andy Chick**. The citation was read by ***Scientific Secretary Dr Malcolm Scoble***:

"Andrew Chick completed his part-time PhD in Forensic Entomotoxicology at Nottingham Trent University, having been entirely self-funded through working as an associate lecturer at the University of Derby, University of Lincoln and Nottingham Trent University. While studying for his PhD, Andy published many papers aimed at helping amateur microscopists develop their own skills and equipment for citizen science, proving useful for many of his students. He also has a keen interest in developing alternative mounting media for entomological microscopy, having observed difficulties in obtaining some reagents due to tighter safety controls. Andy has made efforts to share his keen passion for entomological microscopy with everyone, from school-aged children to his

students and his peers. During his PhD, he also became the first person to observe and report *Sargus bipunctatus* breeding upon carrion. He also initiated a local scheme where he visits secondary schools with the aim of inspiring more youngsters to become interested in science-based disciplines. A speaker at many conferences, and also at PubHD, where PhD students present their work in a public house. Andy currently has 21 publications and contributed a chapter in the '*Dipterist Handbook*', writing his own debut book on *Insect Microscopy* whilst studying for his PhD. He is a most worthy recipient of the Trail-Crisp Medal."

**h.** The President presented the **2018 Irene Manton Prize** to **Dr Alexander Hetherington**. The citation was read by ***Scientific Secretary Professor Simon Hiscock:***

"According to his PhD supervisor, Dr Alexander (Sandy) Hetherington is the most productive of the 23 students he has supervised. Sandy's thesis is entitled *Evolution and morphology of lycophyte root systems*—both his primary research findings and his Tansley Insight review have been important contributions to our understanding of lycophyte rooting structures, their homologies and evolution. Literature on the root structure, or stigmarian systems, of giant lycopsid trees, which were dominant in the Carboniferous coal forests that existed between 300–340MYA, indicated that these rooting systems were unbranched—which was puzzling, given that the root systems of their closest extant relatives (herbaceous Isoetes) are highly branched. Sandy had demonstrated that stigmarian rootlets did develop root hairs—an observation which had been missed or misinterpreted for over 170 years. Sandy also identified the oldest developing meristem (self-renewing stem cells) to be reported to date and found that some meristem types that once existed are now extinct and consequently that meristem diversity of Palaeozoic roots was greater than heretofore appreciated. Using data from transcriptome analysis of *Marchantia polymorpha*, Sandy also discovered that there has been a gradual increase in the number of homeo-domain containing regulatory proteins during the evolution of algae and land plants. Sandy's enormous scientific contributions make him a most worthy winner of the Irene Manton Prize 2018."

**i.** The President presented the **2018 John C. Marsden Medal to Dr Thais Nogales da Costa Vasconcelos.** The citation was read by ***Editorial Secretary Professor Mark Chase:***

"Dr Thais Nogales da Costa Vasconcelos's PhD thesis, entitled *Morphological homogeneity, phylogenetic heterogeneity and systematic complexity in species-rich groups,* was considered to be outstanding by its examiners. Three of the chapters have already been published in high-impact journals and a further chapter has been submitted to the *PNAS*. Remarkable in its exceptional breadth, her thesis seamlessly unites the copious data produced by rigorous anatomical survey, utilising microscopy, with developmental biology and molecular phylogenetics, culminating in conclusions at the macro-evolutionary scale. Getting to grips with a family of over 5,000 species is daunting in itself, but then addressing major questions of very wide interest is remarkable indeed. Thais is gifted with an ability to translate her subjects into highly effective, and often very beautiful, figures that convey complex ideas and processes to a non-specialist reader, visualising new connections and gaining insight into questions that have gone unanswered for decades. Dr Vasconcelos is thus a most worthy winner of the John C Marsden Medal 2018."

**j.** The President presented the **2018 H. H. Bloomer Award** to **Dr Dan Danahar**. The citation was read by ***Scientific Secretary Dr Malcolm Scoble***:

"Dr Dan Danahar works as a Biodiversity Educationalist based at the Dorothy Stringer School in Brighton, and volunteers as the Habitat Restoration Officer for the Sussex Branch of Butterfly Conservation, and as an Executive Trustee for the charitable company Big Nature. Over the last decade Dan has undertaken a series of habitat restoration projects, topographically modifying landscapes to provide the niche requirements for early successional butterfly species associated with chalk grassland. He is also producing a series of films, each episode devoted to a single species of British butterfly. Dan has received two awards for his work within the City of Brighton & Hove: in 2006, he received the first Environmental Teacher of the Year Award, while in 2010, he received the first Brighton & Hove's Chief Executive's Award for contributions to Urban Nature Conservation. Winner of the 2011 ZSL Stamford Raffles Award for contributions towards the advancement of Biodiversity Education, he was selected in 2015 by the *Brighton & Hove Independent*, as part of the 100 people who play a significant role in shaping that city. Winner of the 2015 National People, Environment and Achievement Awards for Environmental Education within the UNESCO designated Brighton & Lewes Downs Biosphere Reserve, Dan was also awarded Butterfly Conservation's Outstanding Volunteer's Award 2015. For his extensive contributions to nature conservation, biodiversity

education, and for encouraging amateur naturalists, Dan Danahar is a most worthy recipient of the HH Bloomer Award 2018."

**k.** The President presented the **2018 John Spedan Lewis Medal** to **Marcella Corcoran**. The citation was read by ***Collections Secretary Dr John David*:**

"Marcella Corcoran is a horticulturist (Kew Diploma) specialised in the conservation of plants of the UK Overseas Territories and maintains many of these as part of the UKOTs conservation collections at Kew. Passionate about conservation and training, she wants her horticulture to make a difference to conservation, improve the outlook for plants, especially threatened species, and develop skills in overseas partners. Her work in establishing nurseries for the cultivation, both *ex situ* and then *in situ*, of threatened plants in the UKOTs has significantly improved the conservation status of many of these rare and endangered species. The protocols she has developed form the bedrock for conservation of some of the world's most endangered plants. Her commitment to training partners means that not only has her work made conservation happen, but the impetus to continue it is embedded in the countries and territories where she works. Her work in St. Helena, Ascension Island and the UK territories in the Caribbean has brought new aspects and techniques to plant conservation that can be implemented worldwide. Her dedication to embedding plant conservation in centres of plant diversity means her legacy will be lasting, and her innovative approaches and passion for plant conservation through horticulture make her a most worthy recipient of the John Spedan Lewis Medal 2018."

**l.** The President presented two **2018 Jill Smythies Awards,** as the judges considered both the nominees merited the award.

The citation for **Niki Simpson** was read by ***Collections Secretary Dr John David***:

"Niki Simpson is a true pioneer in the field of digital botanical art. Her emphasis is on accuracy and detail, illustrating diagnostic and taxonomic characteristics, creating beautiful 'image vouchers' which convey a scientific visual description of the plant concerned, while retaining the approach of traditional botanical art, in terms of composition and style. In order to include the features shown by the plant throughout the year, each illustration can take many weeks or months to create. These composite images use a range of media: mainly digital

photographs, but may also include scanning electron micrographs of pollen grains, flatbed scans, computer drawings and scanned hand-drawn work or photographic transparencies. The images have been developed primarily for onscreen use—where magnification or zoom tools can be used to reveal and explore micro-characters that would otherwise remain hidden, and for future interactive viewing. Much of the creative process is just the same as working traditionally (working in collaboration with botanists), it is just the tool that has changed. For Niki, the future of botanical illustration lies in exploring the potential of the dynamic digital workspace, exploring how technology can be used to create new descriptive data. Each image portrays a particular plant, but each illustration also tells a story—a botanical narrative of growth and reproduction. Niki's is an exquisite approach, truly deserving of the Jill Smythies Award 2018."

The citation for **Juliet Williamson** was read by ***President-Elect Dr Sandra Knapp***:

"Juliet is a detailed and meticulous artist, taking great pride in her work - which adheres strictly to the required qualities of botanical accuracy and accurate portrayal of diagnostic characteristics. Every part of the plant is measured to ensure accuracy, while the 'flow' of the plate reflects her professional art training. Her botanical experience in the field in Kenya, Madagascar, Malaysia and other countries enables her to work up flattened herbarium material into a plate that gives a real feel of the plant. Close interaction with the commissioning scientist concerned also helps with this, and the interaction works two ways: quite regularly she add to the scientists' measurements and thus understanding of the taxon concerned. All this results in scientifically accurate plates that reflect the characters of the plants depicted, and greatly assist the user with identification. Her work for various floras, such as *Flora of Tropical East Africa* and *Flora Zambesiaca*, attest to this, as do monographs across a wide range of plant families to which she has contributed, from *Monsonia* to *Emilia*, and from sedges to orchids. Juliet has given courses in botanical illustration to botanists and technicians, including at the Forest Research Institute of Malaysia. Juliet Williamson's body of work makes her a worthy recipient of the Jill Smythies Award 2018."

**m.** The President presented the **David Attenborough Fieldwork Award** to **Daniel Huston,** as the judges considered both the nominees merited the award.

"The Attenborough Award is funded through the *Systematics Research Fund* which is jointly administered by the Linnean Society and the Systematics Association. The Attenborough Award, which comprises a certificate signed by Sir David Attenborough plus a cheque for £200, has been awarded to Daniel Huston, a PhD student at the University of Queensland, Australia, for his efforts to elucidate cryptic speciation among Great Barrier Reef gorgocephalid trematodes—which are parasites of fish with a complex life history involving two intermediate hosts. Daniel first had to catch a number of the host fish *Kyphosus* spp., a type of chubb, and then identify the parasites within. Following morphological and molecular studies on the parasites he collected from the host fish, Daniel uncovered a new gorgocephalid life cycle at the first intermediate snail host stage—which has implications for understanding host specificity—and also identified two new species of *Gorgocephalus*, the trematode parasite. We are delighted that Daniel is able to with us today, from his base in Australia, to receive the Attenborough Award 2017."

## 9. Treasurer's Report

**The Treasurer** referred to the Society's *2017 Financial Statements YE2017* (which include the Annual Report), full copies of which were available for reference. The Summary Accounts for Fellows can be found in the *2017 Annual Review* which had been mailed to all Fellows in mid-April, and a copy was given to all Fellows at the Meeting. The full *2017 Financial Statements YE2017* are posted on the Charity Commission and Society websites following the Anniversary Meeting.

To provide context, the Treasurer said that although we are the Linnean Society of London, the Society serves the international community. The Society's main revenue stream is from its research journals, which are priced in Sterling, Euros and US Dollars, with 56% of the income to the journals being paid to OUP in USD, 33% in Sterling and 11% in Euros. On average, 90% of published articles come from corresponding authors outside of the UK, while 35% of Society members are non-UK based. Largely driven by the move of the Society's journals publishing activities to OUP, the Summary Accounts show a significantly increased income figure in 2017, rising from £1,013,224 in 2016 to £1,731,701 in 2017. Expenditure decreased by £222,843, largely reflecting an apparent significant reduction in Department for Communities and Local Government (DCLG) Expenses costs of £148,417, but this is an anomaly caused by the continuing lack of clarity over the Society's terms of tenure at New Burlington House. In addition, the Society wrote back a provision for legal costs, set aside in 2016.

The total number of members, with Honorary and other non-paying members included, now stands at 2,770 (2,608 in 2016). The total Contributions Income rose to £138,392 (£130,906 in 2016). Currently, there are 99 defaulters, and it is sincerely hoped that all the Fellows who are in arrears will pay up promptly. Those Fellows who have generously signed the Gift Aid Form, have allowed the Society to recover £8,333.

The Society received a generous bequest from the estate of Elizabeth Young of £5,000. The Society is very appreciative of the anonymous donations and those received through the AdoptLINN Programme, the latter funding important conservation work on items held in the Society's collections. The Society is particularly grateful for the grants and donations towards the Linnean Learning education and public engagement initiatives. Jenny Grundy FLS generously contributed towards the purchase of a 3D printer; this has been producing spectacular models to engage children in understanding evolution. John Lyon's Charity, co-funder of the 3D printer, awarded the Society a grant to continue running the BioMedia Meltdown Project, reaching children in the Charity's beneficial areas of North West London. A generous grant was received from the Garfield Weston Foundation and a pledge was made by the Wolfson Foundation, enabling the Society to create a dedicated education space at Burlington House. In total, income from Fellows contributions, donations, legacies and other contributions came to £178,764. The Society paid out £34,357 as Linnean and Systematics Research Fund grants, to which £9,000 was received from the Systematics Association. It cannot be said often enough how valuable such generous grants, legacies and gifts are to the Society in helping to carry out its many public engagement activities. The income from the publishers of the Society's journals is critical. With the move to OUP for the Society's journals, net income came in at £1,303,000 (£737,960 in 2016). While the transition to OUP is fraught, subscription sales have been healthy. The Society continues with the hybrid model, enabling those authors who wish, or are required, to publish Open Access to do so, while maintaining a default policy of not economically disenfranchising those authors with no or low funding by not levying page charges. The Society, along with our publisher, keeps a close eye on the worldwide changing policies of Open Access. The Society remains committed to providing no-cost or low-cost access to qualifying institutions under various international philanthropic publishing programmes. The Financial Statements for the Year Ending 31 December (prepared for the Charity Commission) have been approved by Council and the Treasurer called on Dr Nicholas Hind to read the motion to accept the accounts for 2017.

## 11. Motion to Accept Accounts for 2017

**Dr Nicholas Hind FLS**, a member of the **Audit Review Committee** read the following statement. "In accordance with Bye-Law 12.6, the Annual Statement of Accounts for 2017, and the report of the professional auditors, were carefully examined by the Audit Review Committee of Fellows on 12 March 2018. On behalf of the Committee, of which I was a member, I am pleased to report to the Anniversary Meeting that we concluded that the Accounts give a true and fair view of the Society's finances as at 31 December 2017. I therefore move that they be accepted." This was carried unanimously.

## 12. Appointment of Auditors for 2018 and Banking Arrangements

a. **The Treasurer** moved that the firm of **Knox Cropper, of 16 New Bridge Street, EC4V 6AX**, be appointed as **auditors** in accordance with Bye-Law 12.5, which was accepted unanimously.

b. **The Treasurer** moved that **Barclays PLC, PO Box 13555 Acorn House, 36–38 Park Royal Road, London NW10 7WJ** be reappointed as the Society's **bankers** and this was accepted unanimously.

## 13. The Presidential Address: *Thoughts on Why the Science of Natural History Must Contribute to Evolution and Ecology*

The President discussed reasons why the science of natural history remains as important today as it was in the time of Darwin and Wallace. He used examples from his own studies of tropical butterflies (in particular, the Old World Mycalesine, *Bicyclus* spp.) and other insects, and highlighted research by a number of other scientists on different systems that makes more prominent use of molecular tools. The Society has a crucial role to play in encouraging the awareness of biologists, both present and future, of the importance of the science of natural history.

**14.** The Vice-President and Scientific Secretary, Dr Malcolm Scoble, kindly gave the vote of thanks, saying how butterflies were perfect organisms for study, demonstrating how laboratory work has been used effectively to inform studies in the field.

## 15. Results of the Ballots **83 papers returned: all those standing were elected/ re-elected.**

a. The following were elected to Council: Dr Olwen Grace (botanist), Professor Paul Henderson (mineralogist), Professor Alan Hildrew (ecologist), Stephanie West (biodiversity training manager) and Dr Silvia Pressel (bryologist).

Brief biographies of these new Council members can be found in *The Linnean Society of London Anniversary Meeting 2018 Council Agenda and Council Nominations*, circulated with *The Linnean* in April 2018. These nominations were for Fellows to replace Rosie Atkins, Professor Juliet Brodie, Professor Michael Fay, Dr Paul Bates and Dr Zerina Johanson, who have served three years on Council. The President thanked the outgoing Council members for their services to the Society.

b. The Officers duly elected were: **President,** Dr Sandra Knapp; **Treasurer,** Deborah Wright; **Collections Secretary,** Dr John David; **Editorial Secretary,** Professor Mark Chase FRS; **Scientific Secretary,** Professor Simon Hiscock; **and Scientific Secretary,** Dr Malcolm Scoble.

c. The Fellows were elected as on the 24 May 2018 ballot list (43 Fellows).

d. Professors Rosemary and Peter Grant (USA) were elected as Foreign Members, while Dr Michael Fitton was elected Fellow *honoris causa*.

## 16. Introduction of the New President

The Professor Paul Brakefield FRS PPLS congratulated Dr Sandra Knapp on her election as President, going on to say that many Fellows present would of course already know Sandy because of her long association with the Society, having served on Council for 13 years (2001–14), and as the Botanical Secretary (2006–13) and as a Vice-President. He was confident that he was leaving the Society in excellent hands. He also thanked the staff of the Society for all their hard work and support.

Responding, Dr Knapp PLS thanked Professor Brakefield for his Presidency, keeping the Society on a steady positive course. Highlights included bringing to fruition the Society's Symposium at the Arnold Arboretum in the US, as well as underpinning support for widening the scope of the Society's education and public engagement activities and resources—all extremely important in attaining the Society's charitable objectives.

## 17. Names of Vice-Presidents

The President, Dr Sandra Knapp, named her Vice Presidents for the coming year as **Dr Olwen Grace, Dr Blanca Huertas, Professor Paul Henderson** and **Dr Malcolm Scoble.**

## 18. Future Events

The President noted the dates of forthcoming meetings.

## 19. Any Other Valid Business

There being no other business, the President declared the meeting closed and invited those present to join her for the wine reception being held in the Library. The Anniversary dinner was being held at a local hotel restaurant, The Cavendish, on Jermyn Street.

THE NEXT **ANNIVERSARY MEETING** WILL BE ON **FRIDAY 24 MAY 2019** AT **4PM**.

## Fellows Elected April–Sept 2018

Mr Paul Barrow
Mrs Lucy Barton
Mr Leif Bersweden
Mr Lewis Blackwell
Ms Elizabeth Boden
Mr Ciaran Butler
Mr Stephen Collins
Ms Hannah Cornish
Mr Matthew David
Ms Sevil Dervish
Dr George Doss
Mr Owen Durant
Dr Thaise Emilio
Dr Lyndsey Fox
Mr John Gilbert
Ms Yvette Harvey
Mrs Alison Heath
Mr Roger Heath
Mrs Christabel Holland
Mr Jools Holland
Prof. Michael Honeth
Mr Isuru Kariyawasam
Mr Pushpendra Katiyar
Mrs Marita Kitto
Prof. Thirumal Kumar
Ms Miranda Lowe
Mr Mathew Lowe
Dr Xiaoya Ma
Mr Kit Malthouse
Dr Erica McAlister
Dr Christopher McGonigle
Dr Juliano Morimoto
Mr Peter Murray
Dr Rosalia Pineiro
Dr Cristina Pokorny
Mr Charles Reynolds
Mr Paul Stanley
Dr Juan Viruel
Prof. Peter Warren
Mr Laurence Wesson
Dr George Wettach

## Associates

Ms Lucinda Chalmers
Dr Samantha Gallagher
Mr Brendan Mooney
Dr Stephen Mortlock
Mr Alexander Poynter
Mr James Stribling
Dr Douglas Watson

## Students

Mr Julian Beier
Ms Laura Cooper
Ms Antonia Gane
Mr Mark Hoskin
Mr Tin Hang Hung
Ms Carina Kern
Mr Madhav Madurantakam Royam
Mr Michelangelo Moerland
Dr Sigurd Ramans-Harborough
Mr Michael Tansley
Mr Adriane Tobias
Mr Gabriel Van Duinen

## Deaths Reported to Council in 2018

Dr William Evans
Prof. David Goodall
Dr Hedley Gooding
Jill, Duchess of Hamilton
Dr Quentin Kay

*It's never too early to think about*

# Christmas

*Whether it's joining us for one of our fantastic lectures in December or popping in to use our tranquil Reading Room, you will always receive a warm welcome at the Linnean Society.*

*Stuck for a present? Don't forget our small range of merchandise from ties, to bags, to books like the 'Lord Treasurer of Botany', 'The History of Natural History' and the award-winning 'Order out of Chaos'.*

*www.linnean.org/shop*

# The Linnean Society of London : Programme of Events

## November 2018–February 2019

**2, 9, 16 Nov**
**18.30–20.00**
### Birkbeck Lectures 2018: Transport and Nature
*Partner event at Birkbeck, University of London*

**7 Nov**
**18.00–19.00**
### Sir Julian Huxley Lecture 2018: Marine Benthic Systems
*In association with the Systematics Association*
Dr Katrin Linse, *British Antarctic Survey*

**8 Nov** [A]
**18.00–19.00**
### Darwin Lecture 2018: Targeting Vulnerability—Improving Childhood Survival, Growth and Development in Low Income Settings
*In association with the Royal Society of Medicine*
Prof Judd Walson, *Natural History Museum, London & University of Washington*

**15 Nov** [A]
**18.00–19.00**
### Great Ape Minds and Human Evolution: Understanding our Closest Living Relatives, the Chimpanzees and Bonobos
Dr Zanna Clay, *Durham University*

**16 Nov** *
**10.00–17.00**
### Curious Travellers: Thomas Pennant, Travel and the Making of Enlightenment Knowledge
Organised by the *Curious Travellers Project*

**3 Dec** [A]
**18.00–19.00**
### Founder's Day 2018: A Brush with Flowers
Philip Mould OBE FLS, *BBC 'Fake or Fortune?'*

**4 Dec**
**17.00–19.00**
### Irene Manton Lecture 2018: Fieldwork in Fancy Dress
Venue: John Rylands Library, University of Manchester
Dr Sandra Knapp PLS, *Natural History Museum, London*

**5 Dec**
**12.30–13.00**
### The Future of Coralline Algae
Dr Leanne Melbourne, *The Linnean Society of London*

**13 Dec** [A]
**18.00–19.00**
### Landmarks in the History of the Worshipful Company of Gardeners
Tom Gough FLS, *Past Master of the Worshipful Company of Gardeners*

**9 Jan**
**12.30–13.00**
### The Origin of Comb Jellies (title tbc)
Dr Jakob Vinther, *University of Bristol*

**1 Feb**
**Day Meeting**
### Inaugural Linnean Student Conference: Natural History
Students present their research for the first time at the Society

**REGISTRATION REQUIRED FOR ALL EVENTS UNLESS STATED** • * Payment required • [A] Admission of Fellows

All meetings are held in the Society's Rooms unless otherwise stated.
A tea reception precedes evening meetings at 17.30.
Evening meetings begin at 18.00 and are followed by a wine reception in the Library.

To register and for other events visit **www.linnean.org/events**