

# The Linnean

NEWSLETTER AND PROCEEDINGS OF THE LINNEAN SOCIETY OF LONDON

Volume 36



Number 1



April 2020



## Gangetic Fishes:

Francis Hamilton's  
commissioned images

## Parallel History:

Gesellschaft Naturforschender  
Freunde zu Berlin

## A British Discovery:

William Bingley FLS

AND MORE...

*Communicating nature since 1788*

# The Linnean Society of London

**Burlington House, Piccadilly, London W1J 0BF UK**

Toynbee House, 92–94 Toynbee Road, Wimbledon SW20 8SL UK (by appointment only)

☎ +44 (0)20 7434 4479

✉ info@linnean.org

🌐 www.linnean.org

🐦 @LinneanSociety

## President ✧

Dr Sandra Knapp

## Vice Presidents

Dr Olwen Grace

Dr Blanca Huertas

Prof. Paul Henderson

Dr Malcolm Scoble

## Treasurer ✧

Dr Mark Watson

## SECRETARIES

### Scientific ✧

Prof. Simon Hiscock

Dr Malcolm Scoble

### Editorial ✧

Prof. Mark Chase FRS

### Collections ✧

Dr John David

### Strategy

Prof. David Cutler

## COUNCIL

### The Officers (✧)

#### Vice Presidents

Dr Colin Clubbe

Mathew Frith

Prof. Beverley Glover

Prof. Anjali Goswami

Prof. Alistair Hetherington

Prof. Alan Hildrew

Prof. Dame Georgina Mace FRS

Dr Silvia Pressel

Prof. Max Telford

Dr Natasha de Vere

Stephanie West

## THE TEAM

### Executive Secretary

Dr Elizabeth Rollinson

### Head of Collections

Dr Isabelle Charmantier

### Librarian

Will Beharrell

### Archivist

Liz M<sup>c</sup>Gow

### Assistant Archivist

Luke Thorne

### Archivist *emerita*

Gina Douglas

### Financial Controller & Membership Officer

Priya Nithianandan

### Buildings & Office Manager

Helen Shaw

### Communications & Events

Manager (To be announced)

### Room Hire & Membership

Assistant Tatiana Franco

### Digital Assets Manager

Andrea Deneau

### Conservator

Janet Ashdown

### Special Publications Manager

Leonie Berwick

### Education & Public Engagement Manager

Joe Burton

### Multimedia Content Producer

Ross Ziegelmeier

### BioMedia Meltdown Project

Officer Daryl Stenvoll-Wells

### Engagement Research & Delivery Officer

Zia Forrai

## 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](http://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: Banded gourami, courtesy of the Trustees of the Natural History Museum, London

## Editor

Gina Douglas

[gina@linnean.org](mailto:gina@linnean.org)

## Production Editor

Leonie Berwick

[leonie@linnean.org](mailto:leonie@linnean.org)

## *The Linnean* Steering Group

Dr Fernando Vega

Prof Pieter Baas

Dr Michael R Wilson

Dr Mary Morris



**W**e are living in unprecedented times. The evolving novel coronavirus situation is radically changing how the Society operates. Burlington House is closed to all visitors, with all events, workshops, meetings and tours cancelled until further notice. However, there is no reason not to engage with the Society online—don't forget: all of our lectures, videos and animations are online to view (<https://www.youtube.com/user/LinneanSociety>), so if you missed one, now is the time to catch up. Check out the new *The Linnean Society at Home* online resource (<https://www.linnean.org/learning/at-home>) which Joe Burton, our Education & Public Engagement Manager, has set up with activities, videos, podcasts and other resources for a variety of ages. Most importantly, keep yourselves safe and well!

### Inspirational engagement

Since the start of 2020 our engagement teams have been busy, at the Brighton WonderFest and at the Association for Science Education Conference in Reading, while discovering the next generation of natural historians was the objective of our public-facing *Student Spotlights* conference. Led by Daryl Stenvoll-Wells, judging for the current phase of the BioMedia Meltdown (almost 100 workshops in over 40 venues) is being done online, but sadly the planned celebration evenings have had to be postponed. The Discovery Room was launched in November with inspirational speeches by Professor Dawn Sanders and Randal Keynes, the great-great-grandson of Charles Darwin.

### Continuing our collaborations

The inaugural Burlington House Lecture, 'Unwrapping the Secrets of our Past: A molecular journey through history', organised by Royal Society of Chemistry and held in the Royal Academy of Arts's new auditorium, covered various aspects including the fascinating topic of astrobiology. Also led by Daryl and funded by *ArtsMark: A New Direction*, we collaborated with the Geological Society on a science-meets-art CPD event for teachers, and received some great feedback (*BELOW*).

“So many fantastic ideas, I am filled with new thoughts and aspirations.

Thank you for such an amazing day!”



Other recent collaborations included live-streaming the Field Studies Council's 75th Anniversary meeting at the Society, while Manchester University hosted the Irene Manton lecture, where we were regaled with fascinating tales of parasites by Professor Jan Bradley. Audiences have also enjoyed insights into the history and science behind both the gin and tonic, and English sparkling wine as part of our 'Food for Thought' series.

### Land and sea

A scientific paper recently published in the *Zoological Journal of the Linnean Society* entitled 'The Life Aquatic with Spiders' dispelled the common misconception that all spiders dwell on land, and revealed the surprising evolutionary pathways of this group. A *Biological Journal* article provided DNA evidence that red squirrels on the Isle Royale archipelago in Lake Superior are not genetically distinct from populations across North America, and may have swum there from the mainland.

To make the scientific research being published in our journals more accessible for the non-specialist, we are launching a new series of animations; the first shows how the larvae of certain species of wasp control the minds of their spider hosts (find it, alongside many more videos, on our YouTube channel).



**Our journals, animated: a wasp larva controls its spider host in one of our latest videos**

### Supporting young researchers

Unfortunately the presentations of medals and awards, usually done at the Anniversary Meeting in May, is having to be postponed, but we will be going ahead with the Society's Annual General Meeting, albeit virtually (correct at time of going to press). Full details are provided in the insert which is included in this mailing. Appleyard grants went to Michael Pearson (UK) for his project on the diet of two lichenivorous moths (Common & Muslin Footman) living in drystone walls in the Yorkshire Dales; and to Marcelo Monge Egea (Brazil), for his study on the evolution of Amazonian and Atlantic Forests, while the Anne Sleep Award was won by Dr Han Hu (Australia) who is working on the dinosaur-bird transition. The David Attenborough Fieldwork award was won by Dr Veronica Urgiles (University of Central Florida), for her project on terrestrial frogs in the Ecuadorian Andes.

**Dr Elizabeth Rollinson**, Executive Secretary  
elizabeth@linnean.org

On 17 March, due to the spread of the novel coronavirus, the Linnean Society closed its doors to visitors, and its staff has been working from home. All readers' appointments, Treasures Tours and guided tours for groups have been cancelled, currently until the end of May. The 'Linnaeus in Lapland' display in the Library (BELOW, AND RIGHT) has been taken down and the cases will remain empty until the building is reoccupied.

Collections staff will endeavour to continue to answer enquiries online and by phone, but lack of direct access to the Collections will likely hinder this process.

### New staff and volunteers

A new part-time Assistant Archivist, Luke Thorne (RIGHT), started in October and helps deal with enquiries, readers, cataloguing and shelving.

Volunteers John Abbott, Hazel Marsden, Sheila Meredith, David Pescod and Pia Wilson continue their invaluable work to catalogue and conserve various parts of the collections. They have been joined by Jannette Ames, Kate Coss, Callum Hodson, Sae Matsuno and Madeleine Shanks, all of whom are cataloguing Archives, Library and Specimen Collections.



### Exploring the Society

Head of Collections Isabelle Charmantier gave a talk on 'Carl Linnaeus' at the Royal Society of Chemistry on 1 November, while Archivists Liz M<sup>c</sup>Gow and Luke Thorne took part in the yearly social media campaign 'Explore Your Archives' in November, engaging a broader audience with our archive collections. Daily tweets shared items from the collections on various themes such as #HairyArchives, #SweetArchives, and #SurprisingArchives.

### Linnaeus in Lapland & a generous donation

The Library display on Alfred Russel Wallace's *Malay Archipelago* (1869) was replaced on 20 November by 'Linnaeus' Lapland journey', in time for the Founder's Day Lecture. This display showcased Linnaean herbarium specimens, drawings, maps, books and the famous Lapland journey diary.

The Discovery Room boasts a colourful display of the complete run of the *New Naturalist*, a recent generous donation from Dr Clemency Fisher FLS, former curator of vertebrate zoology at the World Museum Liverpool. The books, famous for their striking artistic covers, belonged to her father James Fisher, one of the first editors of the series.

In addition to the monthly Treasures Tours, displays and tours for the art classes, we gave tours to the V&A collections team, Australians Studying Abroad, Royal Society of New South Wales, British Records Association, Guild of Tourist Guides, and The



**Linnaeus's walking stick, passports, manuscripts and illustrations on display for the Founder's Day lecture in December**

Worshipful Company of Gardeners. Tours centred on the Lapland display and the Linnaean Collections were given to humanities students from Queen Mary University, Kings College and UCL.

### Many hands make light work

Librarian Will Beharrell has undertaken a tremendous amount of work to catalogue donated books that have been awaiting classification. Once this was achieved, all of these books needed to be shelved! Around ten librarians from the Royal College of Nursing responded to a call for volunteers, and helped shelve seven big boxes of books in two days. Will treated them to a tour of the Linnaean Collections in thanks.

During the first two weeks of January the Library was closed for housekeeping: the team dealt with new acquisitions in the Archives room, while in the Library itself two-thirds of the reference section was moved to Toynbee House. This has created the space needed to rearrange two sections (Exploration and Botany) that had been held in three or four locations around the building, making book retrieval much more straightforward.

### Planning for the future

Due to the current lockdown, plans have had to shift slightly but the team, working remotely, is committed to the keeping the Library operating as much as possible from afar. Staff will use the enforced confinement to clean up the Library and Archives catalogues, as well as the Online Collections, revise the Disaster Plan, and think about a new 2021 strategy for the Collections.

The Society's Collections team has also embarked on a small-scale oral history of the Linnean Society, and is planning to interview three former volunteers and staff members. We will be producing podcasts from our interviews later in the project.

**Dr Isabelle Charmantier**, *Head of Collections*  
isabelle@linnean.org

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:*

- |                        |   |                    |
|------------------------|---|--------------------|
| B.S.M. de Barros Esq   | Colin Kilvington FLS                    | Dr Sam Vale        |
| Peter Crossing         | Carlo Morello/Aboca                     | Carlo Violani FLS  |
| Gina Douglas HonFLS    | Dr Pat Morris FLS                       | Dr Brian White FLS |
| Christopher Duffin FLS | Peter Sjökvist                          |                    |
| Joaquín Fernández      | The Suffolk Flora<br>Preservation Trust |                    |
| Dr David G. Frodin FLS | Tiger of Sweden                         |                    |
| Frances Higgs          |   |                    |



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](http://www.linnean.org/thelinnean).

A printed copy of the list can be sent upon request—please contact the Library staff at [library@linnean.org](mailto:library@linnean.org).



# Old and Venerable: A Spotlight on the Gesellschaft Naturforschender Freunde zu Berlin and its Parallels to the Linnean Society of London



**Katrin Böhme**

*Staatsbibliothek zu Berlin, Unter den Linden 8, 10117 Berlin, Germany*

e: [katrin.boehme@sbb.spk-berlin.de](mailto:katrin.boehme@sbb.spk-berlin.de)

The German Gesellschaft Naturforschender Freunde zu Berlin (GNF) was founded as a private and scholarly society with a focus on natural history (Fig. 1), similar to the Linnean Society of London, founded in 1788 by James Edward Smith. Like the Linnean Society, it is still active today.<sup>1</sup> The initiative came from the Berlin doctor and scholar Friedrich Heinrich Wilhelm Martini (1729–78), known for his work on Conchology,<sup>2</sup> and the inaugural meeting took place in his apartment on July 9 1773, attended by seven of 12 potential full members. Among the founding members were doctors, pharmacists, merchants or civil servants, all of whom, as is clear from the description by the publisher and bookseller Friedrich Nicolai, had extensive private collections of natural history objects.<sup>3</sup> An important motivation behind the GNF's foundation was to bring together existing private natural history collections in Berlin.<sup>4</sup>



**Fig 1.** The bookplate of the GNF, in use until the end of the 19th century.

1 My dissertation about this learned society is based on a two-year research project examining its archive, which is held in the Historische Bild- und Schriftgutsammlung at the Historische Arbeitsstelle of the Museum für Naturkunde Berlin. Böhme-Kaßler, Katrin: *Gemeinschaftsunternehmen Naturforschung : Modifikation und Tradition in der Gesellschaft Naturforschender Freunde zu Berlin 1773–1906*. Stuttgart, 2005.

2 Martini: *Neues systematisches Conchylien-Cabinet*. Nürnberg, 1769–1829.

3 Nicolai: *Beschreibung der Königlichen Residenzstädte Berlin und Potsdam und aller dasselbst befindlicher Merkwürdigkeiten*. – Berlin, 1779, p. 523ff., 570ff., 597ff.

4 Heesen, Anke te: *Vom naturgeschichtlichen Investor zum Staatsdiener. Sammler und Sammlungen der Gesellschaft naturforschender Freunde zu Berlin um 1800*. In: *Sammeln*

As at the Linnean Society, there were different categories of membership. Initially, membership required residence in Berlin and an interest in natural history, with numbers limited to 12 (until 1906). This did not apply to honorary membership, which was available to foreign and other scholars; like ordinary members, they were elected by ballot. The members met once a week, generally on Tuesdays. Before the society had its own premises, the meetings were held in the private apartments of full members. They provided an important opportunity to scrutinise each other's natural history collections and to discuss specimens. Honorary and extraordinary members, as well as guests, were only admitted to the scientific lectures. Lectures were given by members. The scientific papers or letters of external members were read, specimens were given due consideration, with research and observations discussed. Sometimes scientific experiments were demonstrated.

Like the Linnean Society, the GNF focussed on the study of natural history 'in all its branches', but with particular regard to the natural history of German-speaking countries. The society tried to pursue this goal, mainly by building its own collection of specimens and a natural history library, but also through the publication of its own journal, with papers reviewing or revising existing species, or naming new species. Its natural history collection was enriched by purchase and exchange, but principally by gifts from foreign members. The library also increased its holdings through donations and exchanges. Donations played an important role, and potential new members had to provide proof of their knowledge and standing in natural history by sending their own works to the GNF library. Journal exchange increased with the emergence of other scientific societies in the second half of the 19th century, but an exchange with the Linnean Society is not evident.<sup>5</sup> From the beginning, the GNF built up a network of national and international contacts, both with scholars and with learned societies. Until the 1820s, a tightly-knit and diverse network of individual connections was established in German-speaking countries, including a few centres like Breslau, Dresden, Göttingen, Halle/Saale or Leipzig. On an international level there were a few cities like London, Paris, St Petersburg, Copenhagen, and Vienna—all major European science centres. After the 1830s these individual contacts were replaced by connections to other scientific societies.

**“Like the Linnean Society, the GNF focussed on the study of natural history ‘in all its branches’, but with particular regard to the natural history of German-speaking countries.”**

---

als Wissen : das Sammeln und seine wissenschaftsgeschichtliche Bedeutung / ed. Anke te Heesen and E. C. Spary. Göttingen, 2001, p.62–84.

5 Journal exchange can be confirmed for the Zoological Society of London (after 1830s) and the London Natural History Society (1929 and 1935).

Shortly after its foundation, the GNF received the protection of Prussian King Friedrich II (1712–86), whereupon the society was allowed to print its laws and use its own seal.

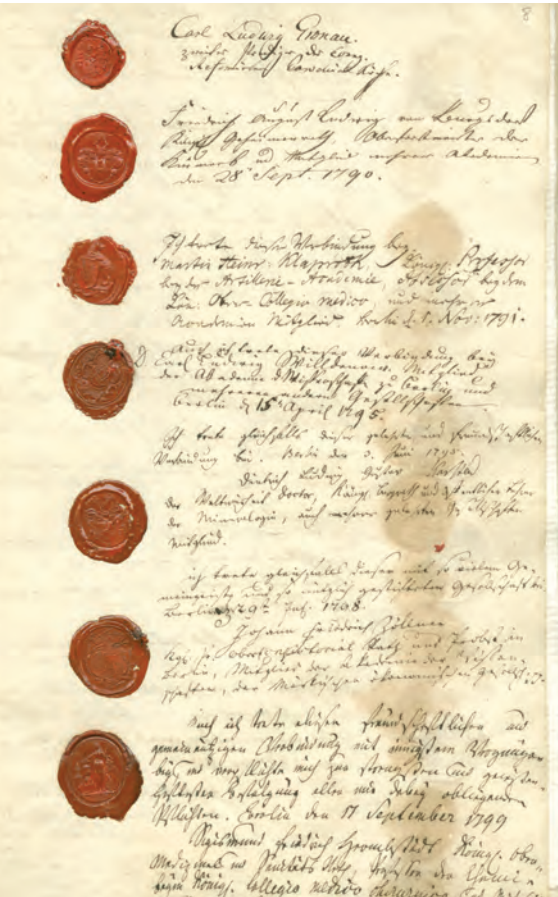
The scope and wealth of the GNF collections, in which all three kingdoms of classical natural history of the 18th century (animal, plant and mineral) were represented, became the basis for the reputation and great importance of the GNF at the end of the 18th, and start of the 19th centuries. The library became an important specialist natural history library in Berlin, but access was for members only. In addition, the archive of the GNF, accumulated from its foundation, must be viewed as part of the collections. It contains all documents relating to the society's activities like letters, manuscripts, lists, bills, protocols, etc.; these represent the bulk of the institutional archive of the GNF. Diaries kept since the society's foundation in 1773 consistently record the meetings and the handling of objects contained in the collections, like letters, documents and books, but also specimens. These diaries contain a wealth of knowledge, identity and tradition, and are of great importance to the history of the GNF and its members.

In 1788, the GNF was able to purchase its own premises in Berlin with the support of the Prussian King Friedrich Wilhelm II (1744–97). It was located in the area of the newly built Gendarmenmarkt (Fig. 2). Until its sale in 1905, the building remained the society's headquarters, where its collections, library and archive were housed, where a full member lived, and the meetings took place. As a repository for the valuable collections, the building symbolised the prestige of the GNF, the wealth of the collections and the library and,



**Fig 2.** The home of the GNF around 1900; the front shows allegories of kingdoms of nature

consequently, the general wealth of the society. Its location in a prestigious public space seems to have prompted an attempt to consolidate the unique private character and the future of the GNF, and the society established a basic constitution ('Grundverfassung') in 1789 (Fig. 3, *OVERLEAF*), also confirmed by King Friedrich Wilhelm II. As in a private will and testament, it determined the way in which the collections, the library and the building itself, all considered private property, were to be passed on to and used for the benefit of future generations. This constitution was binding for full members, and played an essential role in the society's self-image. For more than 100 years it linked the private character of the GNF to the preservation of its property and its institutional independence. In the first half of the 19th century, based on this constitution, the GNF distanced itself from general tendencies to popularise the natural



**Fig. 3** The constitution of the GNF, signed and sealed by all full members. Karl Ludwig Willdenow's signature is fourth from the top.

sciences. Above all, the society's excellence in scholarship meant there was a high demand during the 19th century for its members, with their prestigious reputations and high professional standings. The changes in the scientific landscape of Berlin, in particular the founding of the Universität-zu-Berlin in 1810 (University of Berlin, renamed Friedrich Wilhelm University in 1828, now the Humboldt University of Berlin), forced the GNF to actively promote and defend its position as an independent scholarly society. Some GNF members became professors at the new university; the society gained a special role as a 'candidate pool' for professors in medicine and natural history.<sup>6</sup> However, the newly established university natural history collections (which reflected the emerging specialisms within the field of natural history), and the long-term burden of caring for the GNF collections, led to a loss of significance. Finally, in 1828, the members decided to place the expansion of their library at the centre of their activities, instead of the natural history collections.<sup>7</sup>

Its unusually long history distinguishes the GNF from other learned societies founded in the 18th century. On the one hand, its material property (its collections and the building), ensured the great importance of the GNF in Berlin at around 1800. On the

other, the idea of cooperation between many naturalists, over several generations, for the enhancement of knowledge of nature and its innumerable and manifold (divine) creatures promoted its traditions. The GNF archive preserves a characteristic sense of tradition in documents, actions and values; by way of example, its basic constitution remained signed and sealed for a period of 129 years (from 1789 to 1918), and its diaries were continued without interruption from 1773 to 1945. Its possessions and scientific activities formed a tangible basis for its great importance in the 18th and 19th

6 For instance: Martin Hinrich Lichtenstein (Zoology), Karl Asmund Rudolphi (Anatomy), Johann Christoph Friedrich Klug (Entomology), Christian Samuel Weiss (Mineralogy), Gottfried Christian Reich (Medicine), Heinrich Friedrich Link (Botany) and Karl Ludwig Willdenow (Botany).

7 In the same year a new library catalogue was published, made of Friedrich Klug, who lived in the house from 1815 to 1856: Verzeichniss der Bücher der Gesellschaft naturforschender Freunde in Berlin. – Berlin, 1828.

centuries. Ownership of its own premises became a precondition for its extraordinarily long existence, guaranteeing institutional stability in later periods of low activity, and suggesting continuity and permanence to the outside world. In the second half of the 19th century, this helped to preserve the special status of the GNF in Berlin's scientific landscape.

From the 1870s, full members started to discuss the sale of their building as the cost of maintenance increased. After a long and difficult process of detachment from the old GNF values and traditions, the building was sold in 1905. After this, the GNF had its headquarters in the building of the Museum für Naturkunde in Berlin. The library was distributed to different University institutions, and meetings took place in the museum and in the Berlin Aquarium. As a result, the archive of the GNF is held in the museum. The GNF promoted the Tendaguru expedition to Tanzania, East Africa, with the sales proceeds for its premises. The large dinosaur skeletons found there can still be seen in the main hall of the Naturkundemuseum.<sup>8</sup> Today, the GNF's headquarters are located at the Zoologisches Institut of the Freie Universität Berlin. Therefore, the GNF is the oldest still extant private learned society with a focus on natural history in Germany.

Comparing the GNF with the Linnean Society reveals some interesting parallels. As previously mentioned, the GNF had an international network which included the major scientific centres in Europe, like London. Honorary Members included Joseph Banks, Daniel Solander, James Edward Smith and William Kirby (all founding members or Fellows of the Linnean Society). In most cases, little more than a note of thanks for the diploma or a book sent to the library can be found in the GNF archives, so it seems to have been more a question of prestige to have these members. Connections to Smith were via Karl Ludwig Willdenow (1765–1812), who seems to have sent letters to Smith before his election in 1798 (Fig. 4, *OVERLEAF*); he also sent him his GNF diploma (Fig. 5, *OVERLEAF*).<sup>9</sup> Contacts with Banks and Solander were established via Johann Jacob Ferber (1743–90), but Johann Reinhold Forster (1729–98) also exchanged information with them.<sup>10</sup>

The main goal of both societies was to support natural history in their respective countries. For both, an important reason was that this discipline was not adequately represented at the royal academies in London and Berlin. In the latter third of the 18th century there were many private collections and scholars who were interested in natural history, but they were not considered part of academic life. Similarly, Smith and other founding members of the Linnean Society felt that establishing their own

---

8 Dinosaurierfragmente: zur Geschichte der Tendaguru-Expedition und ihrer Objekte, 1906–2018 / Ina Heumann, Holger Stoecker, Marco Tamborini, Mareike Vennen. - Göttingen, 2018.

9 See accompanying letter in Smith's collection: GB-110/JES/COR/10/82 from Carl Ludwig Willdenow, to James Edward Smith (18 August 1798); correspondence started in 1794.

10 GNF-Diaries, for instance minutes of 27 September 1774 and 16 February 1776.

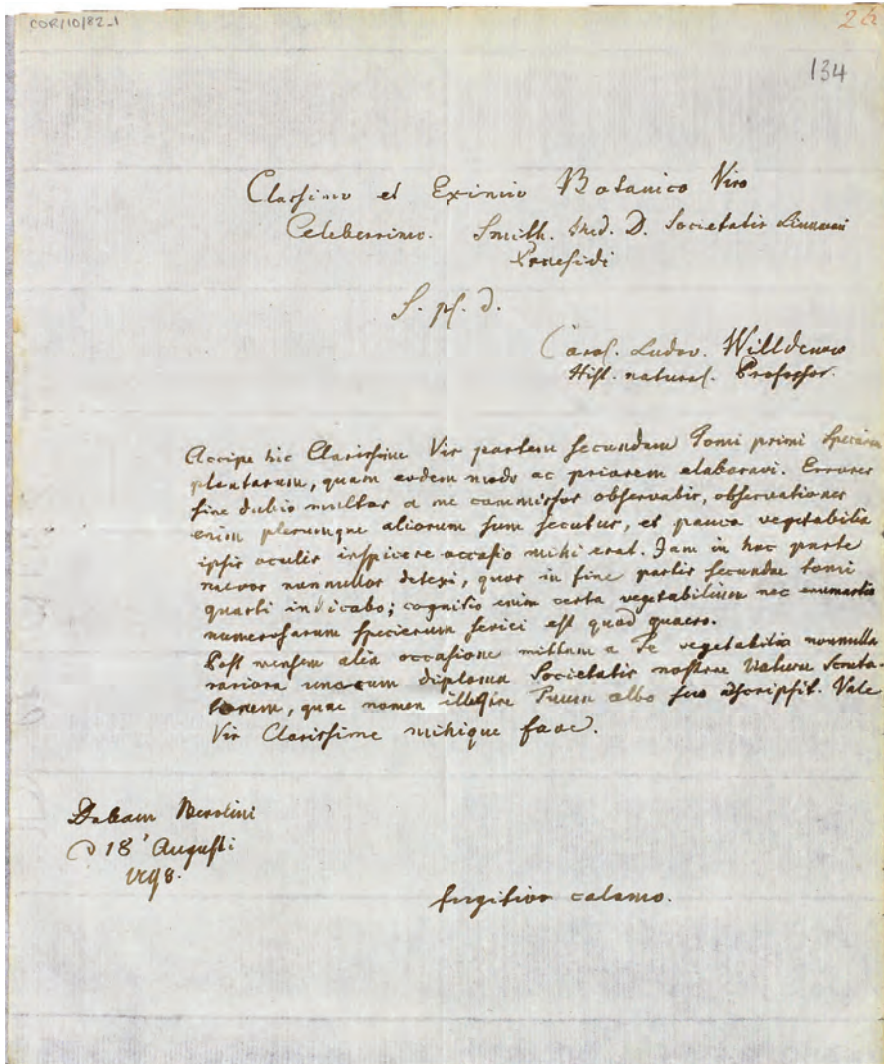


Fig. 4. Willdenow's letter to Smith on 18 August 1798, tells him that he has sent him some rare plants, and the certificate for his membership of the GNF.

scholarly society was the only way to focus on natural history and to bring together natural history scholars—famous scientists and learned amateurs. In addition, there was disappointment regarding the activities and output of the Society for the Promotion of Natural History (a failed London precursor of the Linnean Society). A very important reason for the foundation of both was to provide their members with access to natural history collections: in Berlin the private natural history collections and the gradually increasing GNF collections; in London the collections and library of Carl Linnaeus, purchased by Smith. The activities of both societies revolved around their collections, including discussions about specimens, publishing new species, collection development and care. Both collections and libraries were enriched by member donations, and in the case of the Linnean Society the donors were recorded



Fig. 5 The GNF certificate for Smith, signed on 9 July 1798 by all full members, including Willdenow.

in a register or in the published list.<sup>11</sup> Donations to the GNF collections were carefully noted in the minutes or in an old handwritten catalogue of 1796.<sup>12</sup>

The great importance of the GNF, as well as the Linnean Society, was rooted in their extensive, rich and famous collections. For the GNF, owning their own premises helped to ensure the long existence of this society. The continuity of the Linnean Society's headquarters at Soho Square (1821–57) and Burlington House (since 1857) seems to suggest that this also applies to the Linnean Society. Similarly, the signing of the Linnean Society's Roll and Charter by new Fellows is similar to the basic constitution of the GNF. The domestic archive of Linnean Society contains Minute Books, documents relating to Fellows and scientific manuscripts sent to the Society since its foundation. Like the GNF archive, this hugely important collection of documents serves as an institutional memory and constitutes part of the institutional identity. This makes both archives such fascinating places for study and research, as well as playing a vital part in a continuing, thriving tradition of natural history scholarship.

11 'Catalogue of the Library of the Linnean Society' and 'List of Donors to the Library of the Linnean Society' published 1805 to 1855 in *The Transactions of the Linnean Society of London*.

12 *Catalogus Librorum*, 1796

# *An Account of the Fishes Found in the River Ganges and its Branches* by Francis Hamilton né Buchanan



H. J. Noltie FLS

Royal Botanic Garden Edinburgh, 20a Inverleith Row, Edinburgh EH3 5LR UK

e: HNoltie@rbge.org.uk

**A**n *Account of the Fishes Found in the River Ganges and its Branches* by Francis Hamilton né Buchanan (1762–1829) was published in Edinburgh by Alexander Constable in 1822 (Fig. 1), with ‘Gangetic Fishes’ as the running head on its text pages<sup>1</sup> and illustrated in a supplementary volume in oblong Royal Quarto with 30 plates representing 97 species. The original watercolours and manuscript, survive in the British Library. These plates were not produced in Edinburgh by a firm such as Lizars, but expertly etched and aquatinted by the London engraver John Swaine, printed in black and issued uncoloured. During his time in India Buchanan had commissioned some 225 fish paintings but, for reasons to be explained later, when it came to publication, many of these were unavailable to him for reproduction.

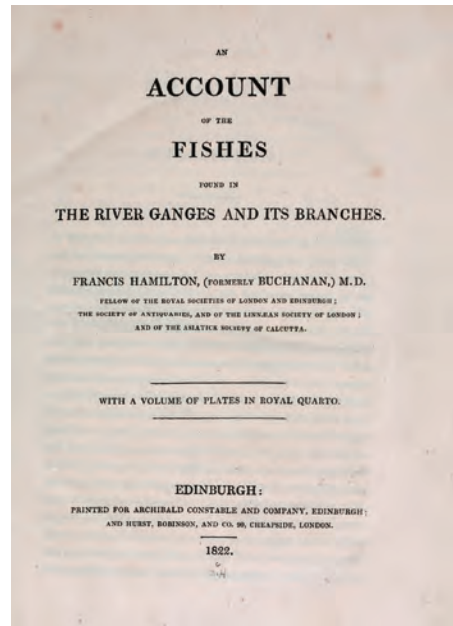


Fig. 1 Hamilton's *Account*...

Francis Buchanan Hamilton (hereafter FBH) studied medicine at the University of Edinburgh; with an MD in 1783 and in 1794 became an Assistant Surgeon in Bengal. His Enlightenment training as an Edinburgh graduate, enquiring mind, exceptional powers of application, and a series of career opportunities took him to countries that are now Myanmar, Bangladesh, Nepal and India, achieving a body of work unrivalled in range and depth in the now distinct disciplines of botany (taxonomic, applied and historical), zoology, history (including religious studies) and geography. FBH's fish studies began in 1796 in the monsoon-sodden lowlands of Luckipore (Fig. 2, now Lakshmpur, in the south-east of present-day Bangladesh) and continued, whenever





**Fig. 2** This 1788 map shows the region in which Francis Buchanan Hamilton began his fish studies; (INSET) Luckipore is located upriver, above 'Hattia' (now Hatiya) Island

the opportunity arose, until within a few weeks of his departure from Calcutta in February 1815. It was in Luckipore that FBH first employed a young Bengali artist called Haludar, whom he paid a gold Mohur a month and who seems to have remained with his employer until the end of his Indian sojourn. This included excursions to Mysore (1800–1) and Nepal (1802–3), and throughout FBH's great Survey of Bengal (1807–14) when a substantial part of the fish work was undertaken. Haludar also drew plants for FBH and, at the Barrackpore Menagerie (1804–5), quadrupeds. Some of Haludar's animal paintings have been displayed recently in the exhibition 'Forgotten Masters: Indian Painting for the East India Company' at the Wallace Collection, with a catalogue essay on the artist by Malini Roy.

That FBH is not better known is worth comment. He published remarkably little himself and, given the pressures of his career in India, entrusted botanical material to Sir Joseph Banks and Sir James Edward Smith to publish, but they let him down. His employers, the East India Company (EIC), could have done more, but the one work of his that they did publish (*A Journey from Madras through the Countries of Mysore, Canara and Malabar*, 3 vols., 1807) was rushed into print and led to justified criticism. FBH would never have published his undigested diary without radical editing; the result was to reinforce what was probably an inherent scholarly wariness. Another reason for his neglect concerns his own polynomial nomenclature. In 1818, though already the head of the Clan Buchanan, in order to inherit his maternal estates

he had legally to take the additional name of Hamilton. As Charles Allen wrote in his account of FBH's pre-eminent role in the rediscovery of Indian Buddhism, this caused 'posterity to subdivide him into four persons. Dr Francis Buchanan, Dr Francis Hamilton, Dr Francis Hamilton-Buchanan, and Dr Francis Buchanan-Hamilton'. Allen's hope, that with his reunification of the 'four avatars ... posterity will give the doctor his due', has yet to come to pass, but recent publications must surely represent a further and substantial contribution to the process.

A further problem arose from FBH's treatment by high officialdom of the East India Company. Whereas he had got on extremely well with one Governor-General, the Marquess Wellesley, his relations with Wellesley's indirect successor the Earl of Moira (later Marquess of Hastings) were more problematic. On his departure from India, Buchanan was forced by Moira to hand over the botanical and zoological (including 144 fish) drawings from the Bengal Survey. These

**Buchanan was forced by [the Earl of] Moira to hand over the botanical and zoological drawings from the Bengal Survey.**

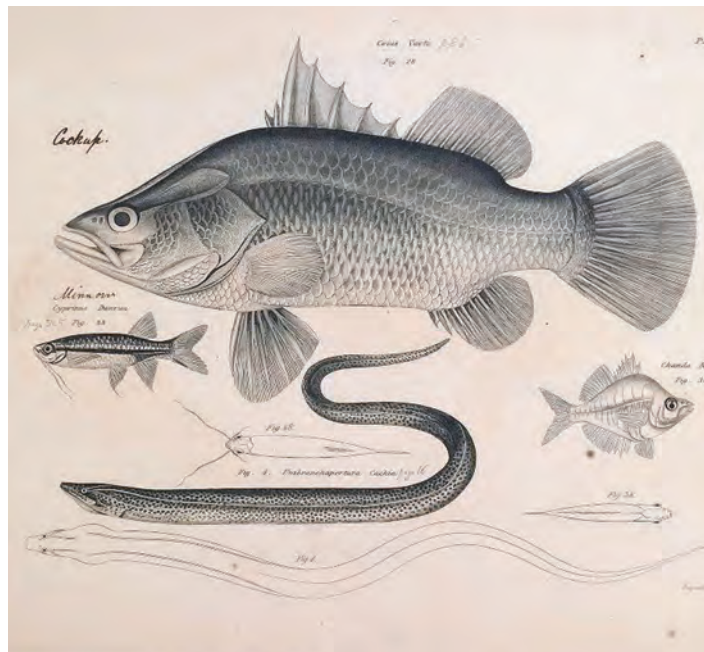
were to be kept in Calcutta, under the care of Nathaniel Wallich at the Botanic Garden, however FBH had intended to present them to the East India Library in London, where he would have had access to them. A furious Buchanan described the episode as 'one of those mean exertions of power, into which a weak man thrust into high authority is liable to fall'. Fortunately a tradition of copying and exchange of drawings between Company officials existed in Calcutta; copies of some of the fish had been made for Wellesley's collection of natural history drawings, but a much more complete set, probably by Haludar himself, were made for the soldier Thomas Hardwicke. These must have been made between 1815 and 1818 when Hardwicke left India and are now housed at the Natural History Museum. Wallich did nothing to make the original Bengal fish drawings available until 1833 when he gave either the originals, or a set of copies, to John McClelland, another Calcutta-based, Scottish surgeon with an interest in fish. Apparently through McClelland these drawings, with a copy of the relevant manuscripts, were deposited in the Asiatic Society of Bengal probably in the 1840s. A new edition of FBH's book has been edited by Ralf Britz (Hamilton & Britz, 2019). In this new edition are colour reproductions of the originals of the drawings engraved for FBH's book (from the British Library) and, for those that were not reproduced in the original edition, drawings from the Hardwicke set at the Natural History Museum have been used.

The main body of FBH's original edition, attractive as the typography of its text is, initially appears formulaic and dry-as-dust, but this is far from the case. Its greatest interest to those other than fish specialists lies in the insights it gives into FBH's methodology. First is his critical examination and synthesis of earlier literature. In his botanical work in Nepal he had made great use of French authors (Antoine Laurent de Jussieu and Jean-Baptiste de Lamarck) and natural classification. So for fish, he made great use of the work of Bernard Germain de Lacépède and J.P. Bonnaterre, while

also making extensive reference to the German Marcus Elieser Bloch (much less, apart from at the level of Orders, to the pioneers Peter Artedi and Carl Linnaeus). There are also many references to the great, but neglected, work on Indian fish by another Scot. Patrick Russell's book on the fish of the Coromandel Coast was illustrated with 200 plates but also issued uncoloured because, as Russell bemoaned, by time he received specimens for his artist to draw the fugitive tints and glints had already fled, and a brave attempt that he devised to record colour by means of codes was a failure. One of FBH's greatest innovations, embarked on in his earliest studies, before he knew of Russell's work, was to examine and describe, and to get his artist to record, the fish while still alive and in their full chromatic glory (earlier authors had relied on pickled specimens).

FBH's choice of English descriptions, expressly for the benefit of his 'countrymen residing on the banks of the Ganges', is significant, and can be seen in terms of a democratisation of science. The descriptions are mainly morphological and factual, literally from head to tail, but FBH was also interested in colour and behaviour. One of the mudskippers, *Gobius plinianus* (now *Boleophthalmus boddarti*), on retreat of the tide, 'remains on the mud ... on which they move, with considerable ease, by means of the muscular protruberances in which their pectoral fins are inserted'. At Goalpara in 1808 he described the sinister-sounding *Ophiocephalus* (now *Channa*) *barca*, which 'lurks watching for its prey with its head out' of a hole that it had excavated (like the British sand martin) in perpendicular river banks.

The occasional aesthetic value judgement is thrown in: the gangene (now *Allenbatrachus grunniens*, the grunting toadfish) is 'an ugly animal' that 'when frightened emits a remarkable creaking noise', whereas 'eels are rather beautiful animals'. Edibility is recorded, and hence the potential for exploitability to be expected of a Company employee; but he is as interested in such use by Indians as by the white denizens of Calcutta. An amusing aspersion is cast upon South Britons in their naming of *Coius vacti* (now *Lates calcarifer*), which was known to 'the vulgar English of Calcutta as the *Cockup*' (Fig. 3). From the habitats that are sometimes recorded can be inferred the glimmerings of an interest in 'ecology', but much less in geographical distribution—localities were recorded in the field notes but given only in general terms in



**Fig. 3** South Britons amusingly referred to the species *Coius vacti* (now *Lates calcarifer*) as the 'Cockup'.

the publication. FBH appears to have been more interested in synthesis than analysis—the seeking of ‘affinities’ more than differences, preferring to relate his animals to existing taxa rather than to describe new species as an end in itself. This approach may well have led him to under-appreciate local endemism when today, with DNA analysis and the paramountcy of monophyly, ‘splitting’ (and the revelation of cryptic species) goes on apace, and the writers of the Foreword in the new edition attest to the importance of the collecting (‘type’) localities now restored by Ralf Britz, the editor from the field notes.<sup>2</sup> Of interest to historians of taxonomy, is the significant extent to which FBH relied on indigenous classification. This frequently took a hierarchical and binary form, with a ‘generic’ name and an adjectival qualifier. His genus *Coius* was based on ‘the prototype of their genus *coi*’. Most of the genera already had Latin names, but one of FBH’s innovations was his use of Classicised versions of local names—in a few cases for genera and subgenera, but in the majority (240 out of 259) of the specific elements of his new binomials. FBH attributed his inspiration for this not, as one might have expected, to Sir William Jones (who recommended the method in India for flowering plants), but to Georg Eberhard Rumphius, the subject of one of FBH’s later botanical works, who worked in Amboyna in the late 17th century. In his earliest Luckipore days he had used Latin epithets based on morphology, but many of these were later changed as he seems to have come more and more to rely on indigenous taxonomy.

Educated in the Classics, FBH had a horror of ‘barbarous’ language and took care to turn Bengali epithets into short and euphonious forms (‘more polished than the sesquipedalic compounds of the modern dealers in Greek’). His method can be seen by comparing the annotations on his drawings with the published names finally adopted in *Fishes of the Ganges*. The zebra fish, now *Danio rerio* that he found in the Kosi River he placed in the Linnaean genus *Cyprinus*, but in the subgenus *Danio* coined from a local name that has subsequently been raised to generic rank. ‘Rirhi’ was unbarbarised into ‘rerio’, and the fish’s other local name ‘jongha’ used for another species of the genus. The zebra fish would turn out to be FBH’s most important discovery. In the 20th century from ornamental use in aquaria it became one of the most extensively used model organisms in evolutionary developmental studies—an ichthyological *Drosophila* or *Arabidopsis* as described in Jim Endersby’s *Guinea Pig’s History of Biology*. Britz comments that, were FBH to be credited in each of the papers in which the name *Danio rerio* is used, ‘Hamilton’s *Gangetic Fishes* would probably be among the most frequently cited scientific publications in the world’.

One of the most interesting species discussed is what FBH finally renamed *Coius cobojius* and which came with a curious history (Fig. 4). The fish had already been described under the name *Lutianus scandens* by Lacépède on the basis of an account by a Danish sea captain who claimed to have witnessed it climbing a palm tree. FBH considered that, while worthy, the sailor was more credulous than an English officer would have been; he then offered a plausible explanation, that the lower



Fig. 4 A Danish sea captain claimed to have witnessed the then-named *Lutianus scandens* 'climbing a palm tree'; FBH posited it had been dropped by a bird, renaming it *Coius cobojus*. Shown here is the original illustration held at the British Library.

part of the trunk concerned might have been nearly horizontal and that the fish, a species 'most tenacious of life in air', had been dropped by a bird and was merely wriggling among the leaf-stumps. The annotations on Buchanan's drawing (plate 57 of the new edition; plate 13 fig. 33 in *Fishes of the Ganges*<sup>1</sup>) are revealing—inscribed with Lacépède's binomial, FBH initially intended to rename it *Perca vagabunda*, but realised that it should be placed in his new genus *Coius*. He then clearly decided to dump what he saw as the mythology and make a specific name from 'kobojee', the second of the fish's two Bengali names (it is now placed in the genus *Anabus*).

FBH's decision that the body of the text be in accessible English led him to add a taxonomic conspectus in Latin for scholarly readers. The classification is summarised: orders (five), genera (with subgenera for the larger) and a short, diagnostic 'character' for each species. The most fascinating aspect of the last are the alphanumeric cyphers for the number of rays in each of the fins—a zoological equivalent to the floral formulae also devised in the 1820s. That for the zebra fish reads 'B 3, D 8, P 9?, V 7, A 16, C -?'. It is unclear if these formulae are another of FBH's innovations. Neither FBH, nor Britz in the new edition, explained these abbreviations, but one can

work out that B is for those of the membrane of the gill-covers, followed by Dorsal, Pectoral, Ventral, Anal and Caudal. Despite this attempt at mathematical precision FBH was aware that, ‘however convenient’, a classification based on the absence or situation of fins was ‘totally un-natural’—as in the case of the various species of ‘sole’, separated by such characters but clearly closely related.

The final section of the new edition is a visual feast: 228 images of fish, all but a handful reproduced from original watercolours. Probably all the work of Haludar they represent a dizzying variety of fish—imaginable and not a few unimaginable in terms of size, shape and colour. Flat fish from elliptical ‘soles’ to a huge ray with an encircling tail; snake-like forms from an exquisite pipefish charmingly known as the ‘crocodile’s tooth-pick’ to brawny eels, and more conventionally fish-shaped fish, from the tiny and minnow-like, through puffers, to a solitary shark. The colours range from the mud of the banks of the Ganges to the highly colourful, including the rainbow-hued *Trichopodus bejeus* (now *Trichogaster fasciata* and, as the banded gourami, an aquarium favourite; Fig.5). The shapes of the fins and their supporting rays, from delicate fans to the ferocious-looking spine of the Gangetic whiting (now *Sillaginopsis panijus*—painted from the Hooghly outside the Botanic Garden in December 1814), are a source of wonder, as are the thread-like appendages (‘tendrils’) which adorn the heads of many species—from the stiff, forward-pointing whiskers of catfish to the flowing tresses of two species of *Polynemus* (both now referred to *P. paradiseus*, then known as mango fish).

The new edition is silent on the question of Haludar’s technique. He seems largely to have used thin, transparent watercolour, though some appear to be painted in the more usual gouache. One wonders if he ever used silver leaf, as some fish artists did, but it is not possible to tell from the reproductions, excellent though these are. One of FBH’s innovations was to have each species depicted in two views—a fully coloured lateral view, and a ‘top-view’ in ink outline. The latter look incredibly modern and demonstrate Haludar’s fine control of line, with no distracting shading. The drawings have a much more Western, scientific look than many natural history drawings by Indian artists. This arises in part from the nature of the beasts depicted—there is little scope for the sorts of *mise en page* into which plants can be arranged; another reason is the two-view scheme, but also that the creatures are drawn to some sort of scale. Although this is nowhere stated, the small ones must be life-size, leading to their appearance of isolation, adrift in a sea of white paper.

The manuscript annotations on the drawings are also of interest. Those retained by FBH himself, and used in his book, have since the 1820s been kept in the India Office Library and then the British Library,<sup>2</sup> away from the scribbling hands of taxonomists, so bear only his own neat annotations and the local names in beautiful Bengali script that may well be Haludar’s. The Hardwicke versions, which lack the Bengali names, kept in the British Museum (Natural History), now the Natural History Museum, London, have been more messily annotated with names and references in a variety of later hands.

Along with the now resurrected localities, it is these illustrations that give both the original and the new edition their major value to today's ichthyologists, for the elaboration they provide to FBH's no-longer adequate written descriptions. It is on the basis of these that Haludhar can claim an equal role in the taxonomic



**Fig. 5 A** The banded gourami, shown as *Trichpodus bejeus* (now *Trichogaster fasciata*), from the Hardwicke versions of the illustrations held at London's Natural History Museum. Note the lack of local name in Bengali script, which can be seen on *Coius cobjius* (held at the British Library) on p. 19.

process despite the fact that this role was unacknowledged by FBH, and his name mentioned only in early and private correspondence.

## Notes

1. <https://www.biodiversitylibrary.org/item/181828#page/35/mode/1up>
2. Now accessible: [http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Mss\\_Eur\\_E70\\_A](http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Mss_Eur_E70_A) and [http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Mss\\_Eur\\_E70\\_B](http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Mss_Eur_E70_B)

## REFERENCES

- Endersby, J. 2007. *A Guinea Pig's History of Biology: The Plants and Animals Who Taught Us the Facts of Life*. London: Heinemann.
- Hamilton, F. 1807. *A Journey From Madras Through the Countries of Mysore, Canara, and Malabar ...* London: Cadell.
- Hamilton, F. 1822. *An Account of the Fishes Found in the River Ganges and its Branches. by Francis Hamilton, Formerly Buchanan-Hamilton ...* Edinburgh: Constable.
- Hamilton, F. & Britz, R., ed. 2019. *Francis Hamilton's Gangetic Fishes in Colour: A New Edition of the 1822 Monograph, with Reproductions of Unpublished Coloured Illustrations*. Ray Society (Series) [181]. London: The Ray Society.

## Additional Author's Note:

On a visit to Champanagar in eastern Bihar in January 2020 the author was assured by Nandi and Raghoo Sinha, descendants of the Rajas of Banailly and Bhagalpur, that Buchanan's scepticism regarding *Coius cobojius* was unjustified. Both have observed the fish, known locally as 'kabai', some distance up the trunks of coconut palms. On one occasion Raghoo shot one with an air rifle when it was 17 feet up a tree. The author himself saw a specimen caught by a local fisherman in the nearby Kala Kosi river, though on the ground rather than aloft.





# Rev. William Bingley FLS: Naturalist

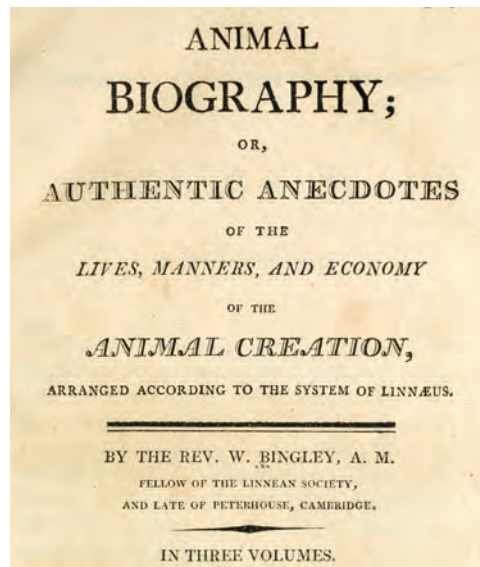


Graham Rowe FLS

*Environmental Sciences, University of Derby, Derby DE22 1GB UK*

e: g.rowe@derby.ac.uk

**A**n unfamiliar name to most naturalists today, William Bingley FLS (1774–1823) was a Church of England clergyman whose prominence in the early 19th century rested on his prolific and wide-ranging authorship, rather than his modest clerical preferment; with book sales supplementing his meagre curate's income. Bingley's works are largely distillations of the works of others, simplified for a young and unlearned readership; however, such a superficial analysis fails to recognise the true worth of some and the extent to which Bingley added original observations. Although Bingley's output was diverse (including travel, topography, music, and biography), the early work *Animal Biography* (dated 1803, but printed late autumn 1802) established his reputation (Fig. 1).



**Fig. 1** Bingley's *Animal Biography* established his reputation.

Born in Doncaster, Yorkshire, and baptised on 7 June 1774, his father (also William) ran a long-established saddlery and was a well-respected council member in the town. Bingley senior (1732–86) died at the age of 54, after young William had just passed his 12th birthday. Following the death of his father, the saddlery business was sold, Mrs. Bingley re-married, and young William was adopted. On reaching 20, his adoptive family entered him as a pensioner, in March 1795, into St Peter's College (Peterhouse), University of Cambridge. Whilst an undergraduate, Bingley initiated a correspondence with James Edward Smith (1759–1828), President of the Linnean Society of London. Smith's responses have not survived, but the 19 letters sent by Bingley over a 15-year period (1798–1813) form one side of a chain of occasional correspondence.<sup>1</sup> Bingley's first letter (12 March 1798, GB-110/JES/COR/20/84) was

sent without prior formal introduction; he had been encouraged by his acquaintance with John Frederick Smith (1765–1842) of Wakefield, a younger brother of James. Bingley told Smith he was ‘as yet not very learned in Botany having begun only about two years ago’. Encouraged by Smith’s response (27 March 1798), Bingley wrote again (26 June 1798, GB-110/JES/COR/20/85) saying, ‘Your extremely obliging Letter in answer to mine has I believe been the cause of my being much more attentive to the Study of Botany than I sho[ul]d otherwise have been’. Bingley informed Smith that he was just about to leave on an extended trip of over three months (until the end of October) to the ‘Caernarvon’ area of North Wales. Bingley’s next letter (early February 1799, GB-110/JES/COR/20/86) was well after his return from Wales. Bingley informed Smith of the plants that he had seen, that he had collected a number of specimens and seeds, and that though all seeds would go to the Botanic Garden at Cambridge, he offered Smith the remaining specimens.

Awarded a B.A. degree in 1799, Bingley returned to Yorkshire. Writing from Wakefield (18 August 1799, GB-110/JES/COR/20/88), Bingley provided habitat details to Smith of ten species of plant for which he sent fresh material to the illustrator James Sowerby. These were used by Sowerby to prepare the accompanying illustrations for the accounts of four species in volume 10 of *English Botany* (Sowerby & Smith, 1800). The habitat information was used by Smith to inform accompanying text. Bingley went on to thank Smith for his ‘last obliging Letter containing a form of a certificate for my Admission into the Linnean Society. I sent up a copy of it signed by Mr. [Rev. Thomas] Zouch and [Rev. Jelinger] Symons’.

William Bingley was ordained deacon in October 1799 and became curate of Mirfield, Yorkshire. On 21 January 1800, he was elected Fellow of the Linnean Society of London. The first publication by the ‘Rev. W. Bingley, B.A. F.L.S. of St. Peter’s College, Cambridge’ totalled over 1,000 pages—the two-volume *A Tour Round North Wales, Performed During the Summer of 1798* (Bingley, 1800). Bingley dedicated the work to Smith, and included a 62-page appendix detailing ‘the habitats of above 400 of the more rare native plants’. The three-volume *Animal Biography* followed (Bingley, 1803); on 30 December 1801 (GB-110/JES/COR/20/94) Bingley responded to Smith’s feedback on the manuscript:

I thank you sincerely for the trouble you have taken in the perusal of my MSs, and feel myself flattered by your good opinion of it. You say I am to be aware that it will only rank as a compilation among readers of a superior order. I never meant to claim an atom of merit for it in any other character.

The work eventually passed through seven editions (to 1829) and several later re-workings.

Bingley became curate of the large Priory Church in Christchurch, Hampshire (now Dorset) in 1802, remaining there until his return to London in 1814. He was desirous of becoming the incumbent, but remained curate on a meagre stipend. Soon after his arrival at Christchurch, and at the suggestion and initial patronage of the wealthy

George Rose, Bingley was commissioned to write a *History of Hampshire*.<sup>2</sup> His initial interest in the work was financial, and though he dedicated more than a decade to conducting research, he abandoned the project in 1814. Living away from London, he had reduced access to materials to produce natural history publications; however, he did publish the first volume of *Memoirs of British Quadrupeds* (Bingley, 1809, a projected multi-volume work), begun eight years earlier.

With his other commitments, Bingley still dedicated time to making original natural history observations; in July 1808, he found *Forficula gigantea* (giant earwig; now *Labidura riparia*) on the West Beach near Christchurch (first British record) and, at a meeting of the Linnean Society (6 December 1808), the Treasurer communicated a letter from him giving an account of this discovery (Fig. 2).<sup>3</sup> At the November 1808 meeting of the Entomological Society of London, George Brettingham Sowerby showed some specimens of unusual insects Bingley had collected in Hampshire. These included examples of the giant earwig, along with some specimens of the rare wart-biter bush-cricket (now *Decticus verrucivorus*). Writing to entomologist William Kirby (1759–1850), Bingley stated:

Amidst all my other avocations I generally contrive to have two hours every day for Natural History; and last summer I began upon the Lepidoptera, an order in which I find much more amusement than in Coleoptera, from the circumstance of being able to breed and rear them.<sup>4</sup>

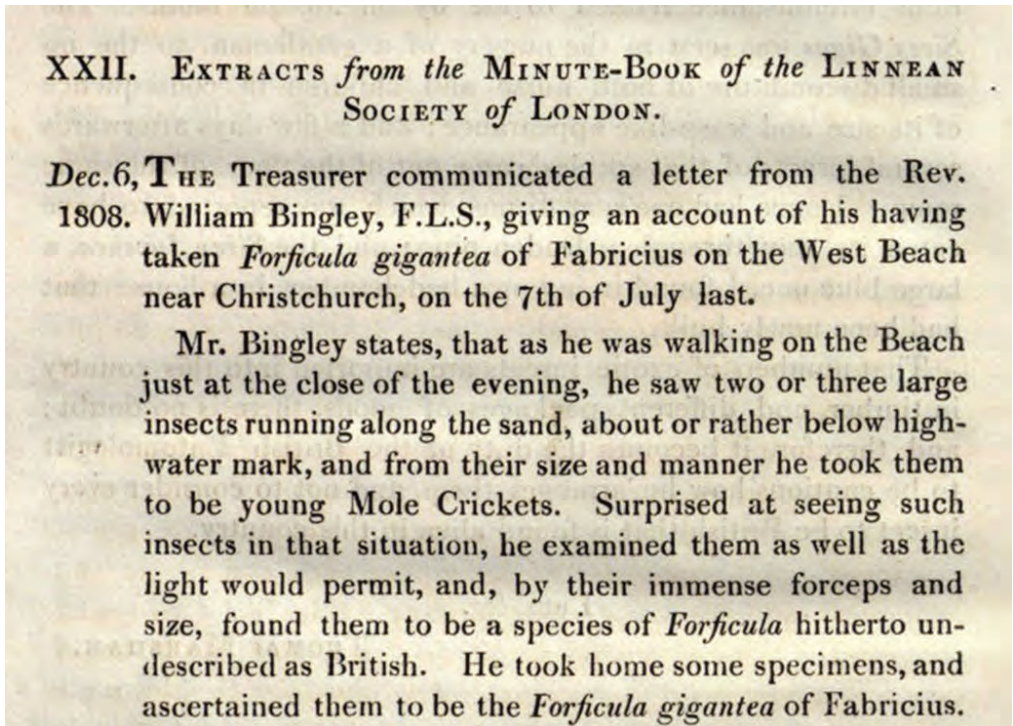


Fig. 2 Bingley discovered the giant earwig (now *Labidura riparia*) in Britain for the first time.

Bingley visited London in October 1810 for research purposes; it may have been on this occasion that he met his future wife, Susanna Morgan.<sup>5</sup> William's marriage to the independently wealthy Susanna in June 1812 brought him financial security and a house in Bloomsbury, London. The couple initially lived in Christchurch, where they had one son, William Richard Bingley (born in 1813).

George Shaw, co-founder of the Linnean Society and now Keeper of Natural History (Under Librarian) at the British Museum, died on 22 July 1813. News soon reached Bingley and he immediately put himself forward to the Trustees as a candidate for the vacant position. The decision would be made amongst the 43 Trustees, which included Sir Joseph Banks (1743–1820) in his role as President of the Royal Society. Bingley received 'strong recommendations' from the Archbishop of Canterbury and Speaker of the House of Commons; he wrote to Smith on 9 August 1813 (GB-110/JES/COR/20/99, after an apparent gap of close to nine years) seeking the support of a naturalist. Bingley had asked Dr William Maton (a Vice-President of the Linnean Society) to seek a recommendation from the influential Banks. Bingley informed Smith that his London house was 'within a stone's cast of the Museum, in which after February next [1814], it is my intention to reside...'. Elsewhere, in June 1813, Thomas Martyn was considering his successor as Professor of Botany at Cambridge (a post he had held since 1762).<sup>6</sup> Smith started canvassing for the professorship immediately and, responding (7 August 1813) to Bingley's letter regarding the British Museum position, also sought any influence he retained at his *alma mater*. Bingley had good contacts at the British Museum and it soon became apparent (see letter 9 August 1813, GB-110/JES/COR/20/99) that the job of Keeper of Natural History would be used to promote Charles Konig (1774–1851), creating a vacancy as Assistant Keeper (Assistant Librarian). Bingley assumed Smith's wholehearted support; however, on 27 October 1813 (GB-110/JES/JS/17), Smith wrote to James Sowerby:

As to the Museum I have heard nor done nothing—except what I told Dr [William Elford] Leach. If you had wished for it, I would have done much more to help you than I will for any body else. As I told you to that effect. Mr Bingley an old acquaint[an]ce of mine and my bro[ther] Fred[eric]k's applied to me first. I would not help him till I knew whether you meant to try.<sup>7</sup>

By early November 1813, final decisions regarding the natural history vacancies at the British Museum had still not been announced. Bingley wrote to Smith on 2 November 1813 stating that 'the Election at the British Museum has not yet taken place, but that I conceive it will not be long delayed after the meeting of Parliament'<sup>8</sup> continuing:

**George Shaw, co-founder of the Linnean Society and now Keeper of Natural History (Under Librarian) at the British Museum, died on 22 July 1813. News soon reached Bingley and he immediately put himself forward as a candidate for the vacant position.**

I am informed that it is more than probable the real mover of the appointment will be Sir J. Banks. In a conversation which a friend of mine had with him some time ago on the subject of this situation, he expressed himself as considering my book entitled *Animal Biography* to be a popular work only. I think if he has since looked into the last (the 4th) edition, he may have a better opinion of me. When I wrote to Sir Joseph I spoke of my work on British Quadrupeds as that on which I wished to rest my claim to attention. This is only the first volume of a very extensive projected publication on the animals of our Islands.

Unusually, the letter lacks the date of Smith's reply and here the correspondence between them apparently ended—Dr William Elford Leach M.D. (1791–1836) would be appointed to the Assistant Keeper position. Bingley had been disadvantaged by the decade he lived away from London, working in vain researching the *History of Hampshire*, rather than dedicating more time to natural history.

Bingley's marriage had brought him financial security, improved social status, and a son. The Bingleys moved back to London in 1814, securing his long-awaited incumbency, at Fitzroy Chapel, where he ministered from 1816, close to his home. Back in London he published a prolific mix of works, including five further volumes on natural history: the single-volume *Animated Nature* (Bingley, 1814), subtitled 'a popular view of the Linnaean system of arrangement', may have been drafted earlier; *Useful Knowledge* (Bingley, 1816; 3 volumes: *Minerals*; *Vegetables*; *Animals*); and the single-volume *A Practical Introduction to Botany* (Bingley, 1817). Although their formal correspondence appears to have ceased in late 1813, on 19 July 1817 Bingley sent Smith a copy of this new botanical work with a brief note saying: 'My dear Sir, I enclose you an unassuming little book, the MS. of which I had found of use in instructing a female relative... I am my dear Sir, yours very sincerely, William Bingley.'<sup>9</sup>

In early March 1823, Bingley caught a cold; it progressed rapidly to an inflammation of the chest and his sudden and unexpected death on 11 March only a few days later—he was aged just 48. Bingley's remains were interred in vaults beneath St George's Church, Bloomsbury. Less than four years after his interment, Bingley's remains would be joined in the same vaults by those of Joseph Planta F.R.S. (1744–1827), Director (Principal Librarian) of the British Museum at the time of Bingley's job application in 1813.<sup>10</sup> Bingley's letters reveal the strength of his desire to obtain the Assistant Keeper position. Whether he would have been successful in the role is an open question; indeed, his lack of success in securing the job may have been fortunate, as the successful candidate suffered a nervous breakdown in 1821 due to overwork. Dr Leach resigned from the Museum in March 1822, to be replaced by John George Children who, upon his own death in 1852, would also join Bingley in the vaults of St George's.

The success of *Animal Biography* (reprinted in various forms over more than 70 years in both Britain and America) shows Bingley helped foster an interest in natural history for more than one generation of young naturalists. His natural history publications do not contain lavish illustrations, or type descriptions of new species and so, like Bingley



**Fig. 3** *Acrida bingleii* named after William Bingley in Curtis's *British Entomology* (1825).

himself, have faded away. Although some new editions would be printed for many years, only one new work was published posthumously: *Biography of Celebrated Roman Characters* by 'Rev. William Bingley, M.A. F.L.S.' (Bingley, 1824). Bingley was awarded the Cambridge M.A. in 1803, and the initials 'FLS' appeared after his name and qualifications on all his publications since his election, irrespective of whether natural history was a component. From his election until death, Fellowship of the Linnean Society validated Bingley's view of himself as a naturalist.

In 1825, William Bingley had an insect species named after him in his honour. Wart-biter bush-crickets collected by Bingley in 1808 near Christchurch, and subsequently by Dorset-based entomologist James Charles Dale (1791–1872), were recognised as a brown form, rather than the usual green colour of the closely allied species (now *Decticus verrucivorus*) described by Linnaeus. Dale’s manuscripts (containing a detailed description of the specimens) were used by John Curtis (1791–1862) to describe and illustrate the new *Acreda bingleii* species in his long-running *British Entomology* (Fig. 3).<sup>11</sup> Although this honour happened after Bingley’s death, it was his formal recognition as a naturalist.

## ACKNOWLEDGEMENTS

Dr Isabelle Charmantier and Liz M<sup>c</sup>Gow (Linnean Society) for arranging access to library and archival materials.

## Notes

1. Bingley in Smith Correspondence (19 letters, 1798–1813): GB-110/JES/COR/20/84 to GB-110/JES/COR/20/102.
2. Clayton, J. 2009. William Bingley’s History of Hampshire. *Proceedings of the Hampshire Field Club and Archaeological Society*. 64: 223–243.
3. 1811. *Transactions of the Linnean Society of London*. 10: 404–405.
4. Freeman, J. 1852. *Life of the Rev. William Kirby*. London: Longman, Brown, Green and Longmans. P. 245.
5. See: Clayton (2009); Marshall, T. 2008. Edward Dayes: His ancestors, family and descendants. *British Art Journal*. 8: 31–38.
6. Kennett, T. 2016. *The Lord Treasurer of Botany*. London: The Linnean Society of London.
7. Smith to Sowerby, 27 October 1813: GB-110/JES/JS/17.
8. Parliamentary session began 4 November 1813; many Trustees, both *ex officio* and elected, had parliamentary roles.
9. Bingley to Smith, 19 July 1817: GB-110/JES/ADD/5. The copy of this book held in the Library of the Linnean Society has annotations added by Smith.
10. Boston, C. *et al.* 2009. *In the vaults beneath. Archaeological recording at St George’s Church, Bloomsbury*. Oxford Archaeology. Monograph No. 8. Oxford.
11. Curtis, J. 1825. *British Entomology*. II (20) August 1825, No. 82; Stephens, J.F. (1835) *Illustrations of British Entomology*. Mandibulata. 6: 17. These names now considered synonyms of *Decticus verrucivorus* (Linnaeus, 1758).

## REFERENCES

### *Manuscripts*

12 March 1798 GB-110/JES/COR/20/84

26 June 1798 GB-110/JES/COR/20/85 from William Bingley, St Peter's College, Cambridge, [Cambridgeshire], to James Edward Smith, Norwich, [Norfolk] (26 June 1798)

(February 1799) GB-110/JES/COR/20/86 from William Bingley to James Edward Smith, Norwich, [Norfolk]

18 August 1799 GB-110/JES/COR/20/88 from William Bingley, Wakefield, [Yorkshire], to James Edward Smith, Norwich, [Norfolk]

30 December 1801 GB-110/JES/COR/20/94 from William Bingley, 10 Devereux Court, Strand, [London], to James Edward Smith

9 August 1813 GB-110/JES/COR/20/99 from William Bingley, Christchurch, Hampshire, to James Edward Smith, Norwich, [Norfolk]

27 October 1813 GB-JES/JS/ from James Edward Smith, Norwich, (Norfolk) to James Sowerby

19 July 1817: GB-110/JES/ADD/5 from William Bingley, 2 Charlotte Street, Bloomsbury, London to James Edward Smith

### *Publications*

Bingley, W. 1800. *A Tour Round North Wales, Performed During the Summer of 1798*. London: E. Williams.

Bingley, W. 1803. *Animal Biography, or anecdotes of the lives, manners and economy... arranged according to the system of Linnaeus*. London: Phillips.

Bingley, W. 1809. *Memoirs of British Quadrupeds*. London: Darton & Harvey.

Bingley, W. 1814. *Animated Nature*. London: Darton, Harvey, and Darton.

Bingley, W. 1816. *Useful Knowledge*. London: Baldwin, Craddock & Joy.

Bingley, W. 1817. *A Practical Introduction to Botany*. London: Gale & Fenner.

Bingley, W. 1824. *Biography of Celebrated Roman Characters, with numerous anecdotes illustrative of their lives and actions, etc*. London: Harvey & Darton.

Sowerby, J. & Smith, J. E. 1800. *English Botany*. (Vol. 10.) London: J. Davis.



The past months have brought news of the deaths of four of our very notable Fellows, each of whom made a significant contribution to our understanding of the natural world.

We must also add a correction to the previous issue, where H. Trevor Clifford, was mistakenly identified as 'Harold', rather than 'Trevor', the name by which we all knew him.

**DAVID BELLAMY (1933–2019):** A larger than life figure, familiar to those in the UK from his wildlife TV series in the 1970's and 1980's, and immediately recognisable from his unique voice, he was elected a Fellow of the Society in 1960 at the time of his appointment as lecturer in Botany at Durham University and as a Fellow *Honoris Causa* in 1997. With many published obituaries available online, that of the World Land Trust includes his own comment on his life:

<https://www.worldlandtrust.org/news/2019/12/obituary-david-bellamy/>

His involvement in the conservation movement can be seen on his Wikipedia page which lists his service as President to 17 wildlife and natural history organisations and as patron of a further 13. [https://en.wikipedia.org/wiki/David\\_Bellamy](https://en.wikipedia.org/wiki/David_Bellamy)

**RAY DESMOND MBE (1925–2020):** Ray Desmond serving on the Library Committee of the Linnean Society from 1977 to 1997. He was appointed as Librarian at the Royal Botanic Gardens, Kew in 1961. As Chief Librarian & Archivist he oversaw the creation of the Main Library and was responsible for the creation of the Kew Archives. He joined the India Office Library and Records (now part of the British Library) as Deputy Librarian in January 1973, retiring as Deputy Keeper in 1985. In retirement he became Honorary Archivist of the Linnean Society from 1986 to 1996 and was then elected as a Fellow *Honoris causa*. From 1977 onwards Ray was the author of almost a book a year, the last being *Great Natural History Books and Their Creators*, British Library, 2003. He was awarded an MBE in the New Year Honours List in 2002 for services to garden history.



**VICKI FUNK (1947–2019):** The Anniversary Meeting Minutes, published in the previous issue, announced the award of the Linnean Society's Linnean Medal for Botany to Vicki Funk. It is with sadness that we now record her death in this issue. She was elected a Fellow in 1992. Rather than repeating her achievements listed previously as a medallist, this is what her colleagues sent to us on her death:

'Vicki joined the Smithsonian Institution National Museum of Natural History museum in 1981 after having earned her PhD at Ohio State University the previous year. She served as Curator of Asteraceae in the Botany Department for 38 years and as the Director of the Smithsonian's Biological Diversity of the Guiana Shield Program, also serving as the Acting Associate Director for Science in 2018. A prolific researcher as lead or contributing author on over 280 publications, Vicki was a mentor to students, early career scientists, and those of us with more established careers. Her professional accolades were many, including being named an AAAS Fellow in 1987 and before her death received the American Society of Plant Taxonomist's Asa Gray Award.'



More information and images are available online:

[https://en.wikipedia.org/wiki/Vicki\\_Funk](https://en.wikipedia.org/wiki/Vicki_Funk)

<https://amarketnews.com/2019/10/24/vicki-funk-of-death-obituary-smithsonian-research-scientist-passed-away/>

**HUGH PATERSON (1926–2019):** News of the death of Hugh Paterson, Professor Emeritus at University of Queensland, School of Biological Sciences, in October 2019, reached us via Professor Mike Claridge. Professor Paterson was elected FMLS in 1989. Born in South Africa, his early career as an entomologist included appointments in Johannesburg and Rhodesia, moving to the University of Queensland in Brisbane in 1985, after some earlier appointments in Western Australia and Canberra. His ideas on species and speciation—the process of evolutionary ‘branching’ by which new species are formed—have become increasingly important to the understanding of evolution. His collected writings were published in *Evolution and the Recognition Concept of Species*, John Hopkins University Press, 1993 (a copy is available in the Society's Library).

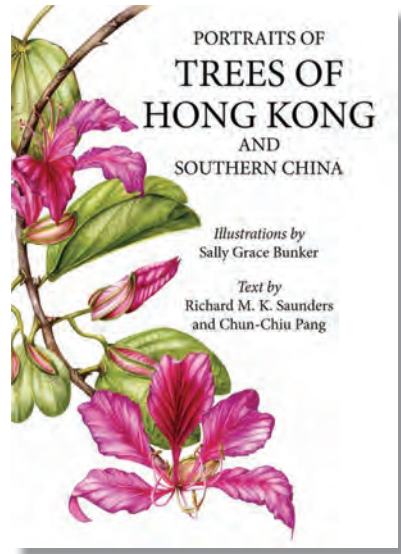
“Hugh's ideas on species and speciation ... have become increasingly important to the understanding of evolution.”

[https://prabook.com/web/hugh\\_edward\\_haldane.paterson/3482603](https://prabook.com/web/hugh_edward_haldane.paterson/3482603)

## PORTRAITS OF TREES OF HONG KONG AND SOUTHERN CHINA

Richard M. K. Saunders & Chun-Chiu Pang;  
Illustrated by Sally Grace Bunker

290pp, Earnshaw Books, 2019, Hardback.  
Col. and mono. illustr. £69.99  
ISBN 9789888552030



This nicely-produced hardback provides portraits of 109 trees found in Hong Kong and southern China, with a number of commonly occurring introduced trees. It is probably not a book to take out into the wild because of its size (210 x 300mm), but is more a source of information and a book to enjoy dipping into while getting to know the various trees illustrated.

The illustrations have been drawn from live specimens collected in the field, sometimes requiring more than one visit. Each plate portrays one species with text on the opposite page. Flowering or fruiting portions of the tree are shown in colour, alongside floral details and a pencil drawing of the whole tree with an enlarged detail of the bark texture. The different parts shown on the plate are lettered with captions at the bottom of the opposite page. It would have been good if the floral details were drawn at a larger size as they are sometimes too small to see, especially when clarity has been lost in reproduction. Some of the pencil drawings of trees also lack definition and are not very naturalistic, however it is useful to have an idea of what the whole tree looks like. A number of the plates are orientated sideways in the binding which makes it awkward to both read the text and view the plate.

The text pages give a short account of the taxonomy, pollination ecology, distribution and other interesting facts about each species. The headings give the Latin name with the authority, and there is a clear explanation for the general reader of how botanical taxonomy works in the introductory section. Chinese, Latin and English names are given in the text and there is a Chinese index at the end of the book. There are numbered references to sources of information listed at the end of the book for those who would like to know more, and there is also a glossary. The introductory section has interesting essays on the history of human impact on Hong Kong's vegetation, evolution of the tree flora, botanical nomenclature and botanical illustration.

The nice thing about this book is the enthusiasm of the authors for their subject which comes across to the reader. The book and its illustrations should stimulate

interest in Hong Kong's tree flora, help people find and identify the trees around them and encourage efforts to conserve them. I was interested to read about *feng-shui* woodlands (abodes of nature spirits) which are planted near towns and villages, and glad to read that the local people are now incorporating rare trees and threatened endemics in these areas. This is a nice example of ancient traditions in harmony with modern conservation strategy.

Christabel King

## GOLDFISH

Anna Marie Roos

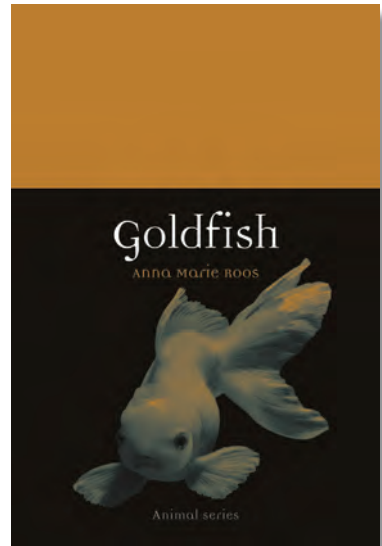
206pp, London: Reaktion Books Animal Series, 2019, Paperback.

Col. and mono illustr. £12.95

ISBN 9781789141351

This account of goldfish, their biology, domestication, introduction into Europe and their impact on art, ticks all the boxes. The author wears her learning lightly, introducing us to the Republic of Letters and the arrival of goldfish in Europe, but giving us sources to follow, should we wish to do so, in full chapter notes citing sources and adding additional information. An introductory chapter gives a brief outline of their biology, before continuing with the history of their domestication in China and appearance on Chinese ceramics. The story continues to Japan, where the narrative takes us from their 17th-century introduction to present day manifestation in festivals, video games and specialist breeds.

Moving back to their introduction into Europe, the focus is on their appearance in the history of science and eventual move into the world of consumerism. This features in detail in the following long chapter, documenting their spread to the USA and the way they feature in the home, entertainment, art, and even food. The final, short chapter reports on their occasional negative presence as an invasive species but also on their experimental use in cognition studies. Illustrated throughout, with both black and white and colour images (most of which appear in juxtaposition to the relevant text), this book is both visually appealing as well as providing wide-ranging information. The Timeline, placed at the back before the References, Select Bibliography and Index provides a useful two page text and visual summary. The perfect bound softback binding appears robust.



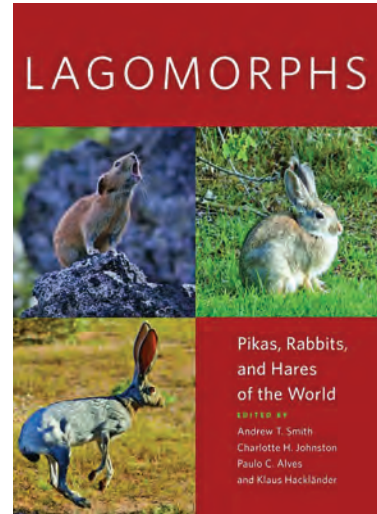
Gina Douglas FLS

## LAGOMORPHS: PIKAS, RABBITS AND HARES OF THE WORLD

Andrew R. Smith, Charlotte H. J. Johnston, Paolo C. Alves & Klaus Hackländer (Eds.).

280pp, Johns Hopkins University Press, 2017, Hardback. Col. and mono illustr. US\$89.95  
ISBN 9781421423401

The IUCN Species Survival Commission Lagomorph Specialist Group (LSG) and the World Lagomorph Society (WLS) commissioned this book. This compendium is designed to expand the coverage of the Order Lagomorpha in the scientific literature and update the LSG Lagomorph Action Plan published almost 30 years ago in 1990. The book is mainly written for lagomorph biologists but will also appeal to other biologists, naturalists, students in the natural sciences and in conservation biology and people carrying out biodiversity surveys and implementing conservation projects all over the world, as pikas, rabbits and hares are ecosystem engineers and keystone species in many of the world's biomes.



An Introduction is followed by five thematic chapters: Evolution, Systematics, Introductions, Diseases and Conservation, succinctly written by the editors, and by several of the contributors to the later sections covering the species' accounts. They average five pages in length and present a clear exposition of the relevant themes. In 'Evolution' the reader is introduced to the two living lagomorph families: Ochotonidae (pikas) and Leporidae (cottontails—mainly rabbits in British usage—and hares or jackrabbits). In 'Systematics' both taxonomy and systematics are discussed as are current problems in classification. The 'Introductions' chapter covers 12 species of which only three are considered to be 'invasive'. Myxomatosis, Rabbit Haemorrhagic Disease (RHD), European Brown Hare Syndrome (EBHS) and Tularaemia—a major zoonose—are the main subjects of the 'Diseases' chapter. Also in this chapter, attention is drawn to the dangers of introducing alien species to new habitats with the case of the Eastern cottontail bringing at least four new species of parasites to Europe. Uncertain taxonomy, isolated species, threats by invasive species, re-introduction and threats from changes in land use and in habitats are covered in the final introductory chapter, 'Conservation'.

The introductory section is followed by detailed accounts of all 92 species of lagomorphs. These accounts cover the 29 species of the single genus *Ochotona* in the Ochotonidae, the 13 species in nine genera of 'rabbits', the 18 species of the genus *Sylvilagus* and the 32 species of *Lepus*, most commonly known as 'hares'.

These species accounts are arranged in the same sequence, beginning with the scientific and common names, followed by appearance and unique morphological characters. Ranges of standard linear measurements and weights are followed by palaeontological information, current taxonomic status and geographic variation, habitat, diet, reproduction, ecology, behaviour and management. Name(s) of author(s) and a list of key references are provided for each species. There is usually a photograph of the species and a distribution map (one of only two errors the Reviewer found was the apparent absence of the European hare from the British Isles, the other being black-napped instead of black-naped hare). It is noteworthy that some species are found in extremely limited spatial areas and are very few in numbers.

The four Editors are all lagomorph specialists. They are variously chair of the IUCN LSG, Manager of the vertebrate collection at the Arizona State University, professor and head of the Conservation Genetics and Wildlife Management Group at the University of Porto and co-editor of the journal *Lagomorph Biology*. The four of them collectively have 32 entries as first author in the reference list (Smith 17, Alves 11, Hackländer 4). The 78 other authors figure prominently in the 30-page list of some 1,200 references.

The large format book is printed on good quality recycled paper. The page layout is in a pleasant easy-to-read style. Most photographs are clear and illustrate the salient points of the considered species. The distribution maps similarly fulfil their purpose.

**“This is a major contribution—in fact it is in a league of its own with no competitors—to improved knowledge of the pika, hare and rabbit populations of the world.”**

There is a comprehensive index. The sub-editors have done an excellent job in presenting the text throughout in a consistent easy-to-read style based on the obvious enthusiasm of the individual authors for their subjects.

Although superficially well known—or at least widely recognised as rabbits and hares—by the general public of all ages, their remarkable diversity and their importance in habitats as diverse as tropical grassland to arctic tundra is not even vaguely understood. Lagomorph biologists will obviously reap the most benefit from this book. It is of interest, however, to other biological disciplines in many of its implications.

This is a major contribution—in fact it is in a league of its own with no competitors—to improved knowledge of the pika, hare and rabbit populations of the world. University and public libraries should make this book available to their readers. It is of exceptionally good value for its cost and at about £75 the copy it is not going to strain their budgets excessively.

Trevor Wilson FLS

## MARK CATESBY'S LEGACY: NATURAL HISTORY THEN AND NOW

M. J. Brush & Alan H. Brush

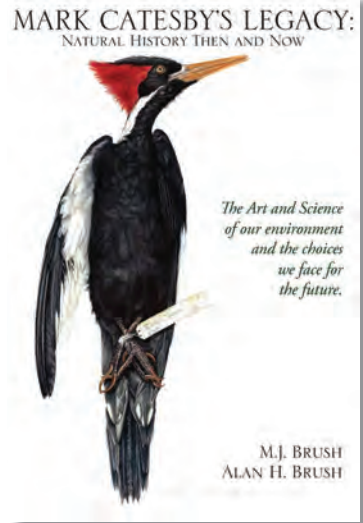
191 pp, Catesby Commemorative Trust, 2018,  
Paperback. Col. illustr. US\$29.95 (£23.95/€25.95)  
ISBN 9781787071384

To those familiar with the history of late 17th- and early 18th-century natural history, Mark Catesby really needs no introduction. His *Natural History of Carolina, Florida and the Bahama Islands*, published in English and French between 1729–47, was the first illustrated and annotated record of the animals and plants to be found in North America. Possessing a style and quality of illustration not to be seen again in works of the genre for many decades following, Catesby's work—both as a naturalist and as an illustrator—in the *Natural History* can be understood to have acted as a significant enticement toward the further exploration and documentation of the myriad fascinating species inhabiting the continent, then still largely unknown to Europeans.

More than three centuries later, the artist M. J. Brush and her husband Dr Alan H. Brush, set out to sail into the bays, channels, and other waterways of the areas Catesby explored. As a result of this journey, M. J. Brush created numerous illustrations of many of the same species—some now extinct and painted from museum specimens—depicted by Catesby. To these were added her own notes on the creation of the illustrations and their subjects, as well as short essays by Dr Brush on the biology, ecology and conservation status of each species depicted; the resulting collection then being published by the Catesby Commemorative Trust in this book.

It must be noted, this is not a collection of images of Catesby's own paintings, nor is it a commentary directly upon them (two things this reviewer initially expected it to be). Rather, it is best described as a series of extended reflections and meditations—both in images and words—upon the species depicted and places visited by Catesby. In those things, it is quite effective, often very enjoyable, and when so intended, thought-provoking. However it is also somewhat impeded by an overall organisation that can be both confusing and—it must be said—at times potentially irritating to the reader.

This is unfortunate, as what is presented—when understood as to the intended purpose and scope—is most interesting. The rather irregular placement of the included plates among the essays frequently causes the reader to break off from a passage in order to seek out where it next begins; often the page turns not to the next word in



the sentence, but to the beginning of the artist's notes on one of her paintings. This is, of course, a critique of the book's structure rather than its content; however as a work clearly intended for a general audience, such considerations must be taken into account lest the book be too often put aside by frustrated readers.

*Mark Catesby's Legacy* is indeed an accessible introduction to the travels and work of Catesby, in that it has the potential, particularly through the visual appeal of M. J. Brush's illustrations, to reach an audience for whom Catesby's importance in the development of the study of natural history may not yet be well known. However, for those seeking a presentation of and commentary upon Catesby's paintings themselves, as well as a more extensive examination of his place in the history of natural history, *The Curious Mister Catesby: A 'Truly Ingenious' Naturalist Explores New Worlds*, edited by E. Charles Nelson and David J. Elliott would better satisfy such readers' curiosities.

Johannes (John) E. Riutta FLS

---

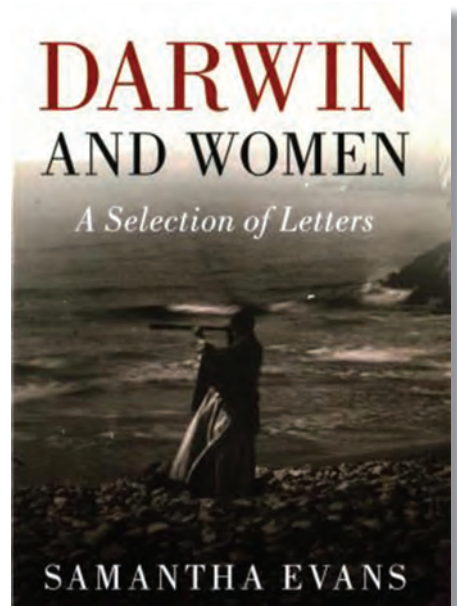
## DARWIN AND WOMEN: A SELECTION OF LETTERS

Samantha Evans

298pp, Cambridge University Press, 2017,  
Hardback. Mono. illustr. £29.99  
ISBN 9781107158863

Charles Darwin's correspondence furthers our understanding of his life and work. Of the many letters that Darwin wrote and received throughout his life, Samantha Evans provides a sample here of his correspondence with women.

Some of the women in question are members of his own family, including his wife Emma—who also translated, read for him and wrote letters on his behalf—and his daughter Henrietta, who both checked and edited his work. These letters reflect everyday life and the happy family atmosphere in their home of Down House, despite the occasional traumatic episode. Darwin also corresponded with domestic servants and governesses whom he considered part of the family. Other correspondents were friends, such as Fanny Owen and Henrietta Huxley. Written in a tone of friendship, trust and respect, these letters often express nostalgia for times gone by, while some seek Darwin's financial help or work for acquaintances.





The letters Darwin exchanged with women from the scientific community contribute to the story of women's role in the field of natural history. Most deal with botany, like his correspondence with Mary Treat. Barnacles, insects and earthworms were discussed with Mary and Katherine Lyell and their niece Lucy Wedgwood. Pets featured in letters between Darwin and Jane Loring Gray, wife of Asa Gray, and with Pauline Perfilieff, Leo Tolstoy's second cousin. The letters to travelling women, including his daughter Henrietta, reveal the influence of the *Beagle* expedition around the world.

Darwin also requested information from some of these women for his research on the expression of emotions in humans and animals. Editors, critics, poets and writers also consulted him on their writings.

Religion was another theme in his letters revealing the importance of religious sentiment in the Darwin family and an insight into women's relationship with the Church: the importance of Bible reading and the influence women had on their children's education. His responses in 1866, to several letters from women asking how the theory of evolution could be reconciled with Christianity, reflect his divergence from orthodox Christianity.

In the final chapter, Evans mentions how a few women wrote to Darwin on feminist issues. Those who did were involved in the suffrage movement, defending their rights to education and for recognition of their work. His replies reflect his opinion on the intellectual capacity of the female sex and give suggestions as to how to achieve equality with men. Here he proves to have a sense of humour and accepts the criticism he receives.

The book is aimed at anyone with an interest in Charles Darwin's relationships with the women around him and his perspective on their role in different areas of society. When reflecting on the content of these letters, it is worth remembering the context in which they were written, in a Victorian England where notions of women's attributes, social rights and participation in science were far removed from those that exist today, at least in the Western world.

Instructive, interesting and entertaining, *Darwin and Women: A Selection of Letters* shows the importance for research and learning of the interrelationships between people of science and their knowledge.

“Some of the women in question are members of his own family, including his wife Emma—who also translated, read for him and wrote letters on his behalf—and his daughter Henrietta, who both checked and edited his work.”

Margarita Hernandez Laille FLS

## SNAKES OF CENTRAL AND WESTERN AFRICA

Jean-Philippe Chippaux & Kate Jackson

448pp, Johns Hopkins University Press, 2019, Hardback.

Col. and mono illustr. £63.00/US\$84.95

ISBN 9781421427195



## SNAKES of Central and Western AFRICA

JEAN-PHILIPPE CHIPPAUX and KATE JACKSON

Ophiophiles—and common or garden aficionados of wildlife—will enjoy this learned and authoritative guide. The geographical area covered is a vast swathe of the African continent. Central and West Africa here comprises Mauritania across to Chad in the north, southwards through the Central African Republic and the Democratic Republic of Congo to Angola in the south and all of the west coast states bordering the Atlantic Ocean. The tiny states of Rwanda and Burundi are also included although these are usually considered to be part of East Africa.

*Snakes of Central and West Africa* will be useful to reptile specialists, those concerned with biodiversity, conservationists and amateur naturalists. Although not formally stated, the book is essentially in two major sections. ‘Part One’ comprises four chapters

on Identification, Evolution and Biogeography (all with an appendage of African Snakes in the chapter title). The fourth chapter is Snakebite in Sub-Saharan Africa. ‘Part Two’ contains nine chapters, each devoted to detailed descriptions of one or two families of snake that total almost 300 species. Chapter 1 is designed to help readers identify snakes correctly and find a way through the specialised and precise terminology used for describing these reptiles. In this context, scales and their terminology, and especially scales on and about the head, are a major facet of snake identification. A long (7 pages) dichotomous key to genera closes Chapter 1. A classical exposé of evolution is given in Chapter 2. Similarly, Chapter 3 discusses the biogeography of the snakes found in the ambit of this book. At a conservative

**“At a conservative estimate of 500,000 venomous snake bites a year in Africa, of which more than 25,000 prove to be fatal, it is clear that snakes are not only of biological interest but are also a significant public health hazard.”**

estimate of 500,000 venomous snake bites a year in Africa, of which more than 25,000 prove to be fatal, it is clear that snakes are not only of biological interest but

are also a significant public health hazard. It is not, however, these data that horrify this Reviewer about the short (4 pages) Chapter 4 on Snakebite. Rather, it is the fact that different groups of snake result in different types of envenomation which require different forms of treatment. The problem is knowing what one has been bitten by and the correct treatment. Wrong treatment can result in the cure being worse than the disease. In summary, it seems advisable to get the envenomed person to a competent medical location as quickly as possible, though quickly may not be fast enough, as most snakebites occur in remote rural locations where transport may not be readily available. Family chapters largely follow a standard format beginning with a phylogeny diagram, followed by a dichotomous tree to genera and, in some cases, a tabulated list of species. Species accounts describe the snakes (with emphasis on scale patterns) and include a distribution map, photographs and drawings.

The 25-page Bibliography lists almost 600 references, some of which are rather dated. The senior author of the book appears as sole or first author in 25 of the references dating from the 1970s to 2015, almost all of which are to do with snakebites or poisoning. The junior author is cited as first author in only three publications, but she has drawn or redrawn almost all of the illustrations showing the patterns of scales and this is obviously her forte. The comprehensive Index includes common and binomial names and many locations.

The clear text is very readable except where technical terminology, which is fully described in Chapter 1, has had to be used. The book is copiously illustrated with black and white figures and mostly coloured photographs, some of which are a little on the dark side. *Snakes of Central and West Africa* is a comprehensive compilation of information and data on an otherwise understudied but important group. The price of £63 appears about standard for this type of hardback monograph, and it should be readily accessible in the libraries of high schools, universities and public depositories, not only in Africa but across the world.

Trevor Wilson FLS



## FELLOWS ELECTED OCT 2019–JAN 2020

Dr James Ackerman	Dr Elliot Gardner	Dr Gordon Mason
Mr Ademola Agbudeloye	Mr Lee Gifford	Dr Chris Middleton
Mr Mark Aihio Khai	Mr Michael Gove	Miss Holly Morgenroth
Dr Sarah Al-Ateeqi	Prof. Jason Grant	Mr Mathale Mosheti
Ms Jennifer Anderson	Mr Alistair Griffiths	Dr Jemimah Naine
Mr Nicholas Austin	Prof. Felipe Guhl	Dr Rosemary Newton
Mr Bill Bailey	Dr Amy Hall	Miss Phebian Odufuwa
Dr Ian Blagbrough	Prof. Akikazu Hatanaka	Dr Edokpolor Ohanmu
Prof. Eric Blair	Mr David Henry	Dr Helen Ougham
Mr Clay Bolt	Dr Trinh Xuan Hoat	Dr Scott Pallett
Dr Carrie Brady	Mr John Howlett	Mr Joshua Parker
Ms Frances Cairncross	Dr Philip James	Mr Christopher Parry
Mr Philip Cannings	Dr Victoria Johnson	Ms Jane Pirie
Dr Tanai Cardona	Dr Ravi Kant	Dr Maximilian Press
Dr Chiara Ceci	Mr Simon King	Mr Christopher Raeburn
Dr Gregory Copenhaver	Mrs Małgorzata Kolicka	Dr Somnath Roy
Mr Arne Corneliusen	Dr John Koprowski	Countess of Sandwich
Mr Daniel Da Silva	Dr Anuj Kumar	Prof. Jörg Schulz
Mr Michael D'Antonio	Dr Martin Kunz	Mr Alan Scott
Dr Michael Darby	Mrs Deborah Lane	Mr Richard Scott
Mr Paolo Di Montorio-Veronese	Mr Timothy Lavery	Prof. Arnab Sen
Dr Suchandra Dutta	Mr Gareth Light	Prof. Ben Sheldon
Prof. Alasdair Edwards	Dr David Lowther	Mr Anthony Sloane
Ms Daphne Foulsham	Dr Clive Marks	Mr Graham Smith
Dr Kirtiraj Gaikwad	Dr Karen Martin	Mrs Janice Smith

Dr Carl Soulsbury  
Mr Christopher Starbuck  
Dr Ingemar Struwe  
Dr Anna Svensson  
Prof. Bhaben Tanti  
Mr Barry Theobald-Hicks  
of Danbury  
Prof. Howard Thomas  
Mr Christian Torres-  
Santana  
Mr Cameron Treleaven  
Mr Chris Vos  
Mr Jake Weeks  
Dr Craig Wilding  
Ms Harriet Wills  
Ms Judy Wong  
Dr Bethan Wood  
Mr Mateusz Zmudzinski  
Prof. Marlene Zuk

---

## **ASSOCIATES**

Mr Rahmah Alqthanin  
Mr Patrick Arnold  
Mr Joseph Brewer  
Mr Bryan Cash  
Mr Adam Francis  
Ms Enikő Mátyás

Dr Francisco Moore  
Mr Eric Motley  
Mr Paris Patapiou  
Mr Mervyn Pilley  
Ms Robin Russell  
Mr Simon Saville  
Mr Andrew Seddon  
Ms Alison Shea  
Mr Georgios Xenikoudakis

---

## **STUDENTS**

Mr Ajith Ashokan  
Mr Nicholas Baird  
Ms Ana Bottallo Quadros  
Ms Kinsey Brock  
Ms Monica Buchoski  
Dr Xi Chen  
Ms Gabriela Doria  
Mr Paul Dufour  
Ms Grace Duncan  
Mr Thomas Dwyer  
Mr Joseph Edwards  
Mr Rodrigo Faustini  
Ms Louise Gathercole  
Mr Felipe Guedes  
Mr Thomas Harley

Ms Priscilla M Ito  
Mr Tim Jäger  
Dr Regina Kolzenburg  
Mr Joe Morton  
Ms Veronica Nava  
Ms Aisha O'Connor  
Ms Joana Órfão  
Mr Dan Parsons  
Ms Rose Paterson  
Ms Sofia Paz Sedano  
Mr Cristian Pizzigalli  
Ms Kathryn Riddington  
Ms Lorena Sanches Vieira  
Ms Elaena Shipp  
Mr Daniel Tanti  
Mr Wyatt Toure  
Ms Eveline van der Steeg  
Mr Daniel Villar  
Ms Bethan Wallace  
Mr Zak Wheeler  
Mr Matthew Whisman  
Mr Brett Wilson  
Ms Becky Wu  
Ms Ritu Yadav  
Mr Ambrogio Zanzi

---

**DEATHS  
REPORTED TO  
COUNCIL**

*FLS*

Mr John Bannister

Mr Kenneth Barker

Dr Anthony Braithwaite

Dr Victoria Braithwaite

Mr Michael Day

Mr Roland Emson

Dr David Frodin

Dr Vicki Funk

Dr Pamela Le Couteur

Dr Anne Palmer

Prof. Umberto Quattrocchi

Dr Shirley Ryder

Prof. Antoni Slabas

Mr Kenneth Smith

Dr Astrid Surmatz

Mr Ioan Thomas

Dr Robin Thompson

Prof. Keith Vickerman

Dr Paul Wycherley

*Honoris Causa*

Mr David Bellamy

Mr Ray Desmond

*Foreign Members*

Dr Stanley Hughes

Prof. Hugh Paterson



Correction

In the 'Correspondence' of the most recent issue of *The Linnean* (vol. 35, no. 2, October), Dawn Sander's name was misspelt, and the email address of the letter's second contributor, John Hewitt, should be [hewitt.j.h@btinternet.com](mailto:hewitt.j.h@btinternet.com)



## IMPORTANT NOTICE

**Due to the ongoing novel coronavirus pandemic, for the safety of our Fellows, staff and the public, the Linnean Society has taken the decision to cancel and/or postpone all of our onsite events and tours up until, and including, the end of July.**

This is correct at time of going to press, but because of the evolving nature of this situation we ask that you keep a close eye on our website for updates to our schedule ([www.linnean.org/events](http://www.linnean.org/events)). We will also be updating you by email and through *PuLSe*, so please make sure we have your current email address. If you have any queries please get in touch.

In the meantime, you can still enjoy all the amazing online resources the Society has to offer, including suggestions for nature-based activities at home ([www.linnean.org/at-home](http://www.linnean.org/at-home)), as well as past lectures, new animations and videos ([www.youtube.com/user/LinneanSociety](https://www.youtube.com/user/LinneanSociety)), and a variety of fascinating podcasts ([soundcloud.com/user-679811756](https://soundcloud.com/user-679811756)). There is something for everyone—please explore!

Stay safe and healthy, and we look forward to welcoming you back to Burlington House later in the year.

**e: [info@linnean.org](mailto:info@linnean.org)**  
**w: [www.linnean.org](http://www.linnean.org)**  
**t: +44 (0)20 7434 4479**

The  
**LINNEAN  
SOCIETY**  
of London



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

Charity reference no. 220509