The LINNEAN SOCIETY of London

The Linnean

NEWSLETTER AND PROCEEDINGS OF THE LINNEAN SOCIETY OF LONDON

Volume 35 Number 2 October 2019

Charles Darwin:
Travels in Tierra del Fuego

Copycat?:
Plagiarism in 19th-century microscopy

Robert Garner FLS:
An unrecorded photograph

AND MORE...

A forum for natural history

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

Publishing in *The Linnean*

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

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

Cover image: Monte Buckland, Tierra del Fuego © Sergio Zagier FLS

ISSN 0950-1096 Charity Reference No. 220509

The Linnean

Newsletter and Proceedings of the Linnean Society of London

Contents

Editorial

Two items in this issue's *Correspondence* focus on the importance of biological education, through the legacy of charismatic individual teachers and through programmes like *Action for Biology in Education*, which was originally supported by the Society.

With the establishment of *Linnean Learning* in 2009, educational outreach has now become a major part of the Society's activities, with new resources available to both children and adults. A quick visit to the *Linnean Learning* homepage (**www.linnean.org/learning**) will lead you to different resources; for teachers, families and others, including podcasts and videos.

If you are unable to attend one of our events, there are also vodcasts of all of our lectures available online, including speakers from both lunchtime and evening talks (**www.youtube.com/user/LinneanSociety**).

And, if you have children or grandchildren between 8–11 years old, please encourage them to enter our competition to create a new 21st-century portrait of Carl Linnaeus, to be hung in the Society's rooms on Piccadilly (**www.linnean.org/newportrait**).

Gina Douglas, *Editor*
gina@linnean.org

The Discovery Room is proving a valuable space, with a whole array of innovative workshops for different age groups: we've run previews of our four new art-meets-science workshops for 11-14-year olds, two workshops for post-graduates on videos and podcasting, and various day and evening art classes for adults. The workshop exploring the history of classification, its limitations and the future was a great way to engage the public—we had philosophers, scientists, bee keepers, artists and art gallery staff.

The education team, alongside launching the next Linnaean portrait competition for 8–11 year olds (**www.linnean.org/newportrait**) have been around the UK, participating in the Cheltenham Science Festival, the Primary Science Education Conference in Edinburgh and the British Ecological Society's Undergraduate Summer School at the Field Studies Council (FSC) Millport field station on the Isle of Cumbrae. The FSC also did a great job hosting the Society's field trip at Slapton Ley in Devon, embracing biodiversity in coastal and inland habitats.

It's elementary

The theme for this July's Courtyard Late was *Elements*, in tune with 2019 being the International Year of the Periodic Table. We had a record 358 people through the door: they indulged in tasty 'carbon-mitigating' algal mojitos, gloried in the fantastic display of carnivorous plants with Fred Rumsey FLS and Steve Tatman, and, with input from Rich Boden FLS, tested their problem solving skills by trying to get out of the Movile Cave escape room. Open House London also drew in the crowds, with 1,446 visitors in a single day. All the Courtyard Societies got together for the *Big Sing*, and we look forward to the inaugural Burlington House lecture in December. Bilateral collaborations include taking the *Shells and Pebbles* art class over to the Geological Society (GSL) to see their treasures, and we're also running collaborative CPD sessions for teachers with GSL.

President's address & Conversazione

Although our President Dr Sandy Knapp was unable to be present at the Anniversary Meeting, her address had been pre-recorded: this year she took a close look at women in the field (**www.linnean.org/AM2019**). Sandy is now back at work, having completed all her treatment. We were delighted to be invited to the Harrison Institute in Sevenoaks

for the Conversazione, where Dr Paul Bates and his amazing team provided a terrific welcome, and explained about their important conservation and capacity building work in Myanmar and elsewhere.

Festive events

Our public lecture series continues to have wide appeal, covering a whole range of topics including butterfly pattern evolution, the origins and early evolution of snakes and dinosaurs, plants of the Qur'ān and other religious texts, and author Victoria Johnson (*RIGHT*) spoke about how Fellow David Hosack's connection to the Linnean Society decisively shaped the future of American botany.

Get registering for our exciting autumn/winter programme, which includes the official launch of the Discovery Room, a day meeting to celebrate Wallace on this 150th anniversary of the publication of *The Malay Archipelago*, the Founder's Day lecture on *Linnaeus in Lapland—Parasites, Reindeer and People,* and get a virtuoso violinist's view on music and birds at the Christmas lecture.

Read all about it

Recent papers in our journals picked up by the national press include a study on damselflies from across Aberdeenshire showing how social dynamics can have powerful effects on the ability of species to withstand novel climates; an example from fossil evidence of iterative evolution, whereby birds (rails) have successfully colonised isolated islands and evolved flightlessness on multiple occasions; and whether the newly discovered (multiple paternity) mating habits of female Tasmanian devils increase the genetic diversity of offspring.

'Father of the Society'

In August the Society participated in the re-dedication of Archibald Menzies' grave in London's Kensal Green Cemetery. The surgeon/botanist on board the *Discovery* (1791–94), Menzies brought several plant species to Europe, including the monkey puzzle tree (*Araucaria araucana)*, Douglas fir, eucalyptus, ferns and grasses. A bespoke wreath included a selection of these species (provided by Kew). Menzies was briefly 'Father of the Society', i.e. longest-serving FLS. The current 'Father' is mycologist Dr Stanley Hughes, a Fellow for over 68 years!

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

After saying goodbye to Dot Fouracre in March, we welcomed new Librarian Will Beharrell (*RIGHT*). Will was previously based at Magdalen College, Oxford, where he was Assistant Librarian.

Our terrific volunteers John Abbot, Lynda Brooks, 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 Judith Thompson, Isla Macer Law and Luke Thorne, all cataloguing archives collections.

Sharing our Heritage

The Library's holdings (all 40,202 records!) are now appearing in the new national union catalogue, dubbed "Library Hub Discover". This is very good news, as it means our material is now visible to a much greater number of researchers. The Linnean Society profile page can be found here: **https://discover.libraryhub.jisc.ac.uk/about/libraries/linnean-society.html**

The first volume of James Sowerby's *Coloured Figures of English Fungi or Mushrooms* (1797), has been loaned to the Arusha Gallery in Edinburgh for an exhibition on fungi, entitled *All that the rain promises and more*. It includes works by artists Helen Chadwick and Emma Talbot, amongst others. Additionally, Berlin-based German artist Sonya Schönberger produced a video of Francis Buchanan-Hamilton's Nepalese drawings of plants. The video was shown in July at OmVed, a garden and exhibition space in North London.

The Tiger of Sweden fashion brand, with its creative director Christoffer Lundman, based its new spring/summer collection on Carl Linnaeus, and its exclusive magazine featured some of the Society's collections.

Strengthening connections

After just two weeks in post, Will was whisked off to Switzerland to participate in the joined annual meetings of the European Botanical and Horticultural Libraries group and the Linnaeus Link Union Catalogue partners. This took place at Champex-Lac, amidst beautiful alpine scenery, and was both productive and enjoyable. Since the meeting, Will has been sorting various issues with the Linnaeus Link catalogue, and we have welcomed a new partner, the Royal Horticultural Society.

Conservator Janet Ashdown attended the annual meeting of the Natural Sciences Collections Association, 'Dead Interesting: Secrets of Collections Success', which took place in Dublin. She also met with conservators at the American Institute for Conservation/Foundation for Advancement in Conservation annual conference in Houston, Texas, in May.

Swartzia simplex **(Sw.) Spreng., part of the Alexander Anderson collection by artist John Tyley**

Head of Collections Isabelle Charmantier attended the 15th International Congress on the Enlightenment in Edinburgh in July. She gave a talk on 'The Unknown Indigenous Artists of British Enlightenment Natural History' to highlight artwork in the Linnean Society collections requiring more research. As a result, Dr Julie Kim, who has been studying the artist John Tyley (who drew for Alexander Anderson in the West Indies in the 1800s), was able to visit the Society to see the recently cleaned Anderson collections of 147 drawings.

Spring and summer tours

The Library is always busy in the warmer months with guided tours, and this year was no exception. Interested groups included the Society of Botanical Artists, RSPB North West Surrey Local Group, and the Music Club of London. And in addition to the usual annual visits from the University of Suffolk bioscience and ecology students, Harvard University biology students and students from The Rikkyo School in England, we welcomed Joe Cain's UCL students, University of Maryland English Lit students, University of Plymouth bioscience students, and the London International Youth Science Forum. It is always inspiring to see students engage with our collections for the first time. One lecturer emailed to thank us: "It was a truly unique experience and the students absolutely loved it and got so much out of your passion and knowledge and having access to such a wonderful collection."

> "It was a truly unique experience...the students absolutely loved it and got so much out of your passion and knowledge."

Coat of Arms, Wallace and Lapland

At long last, we can now display our 1802 grant of arms, thanks to generous funding from the Garfield Weston Foundation. The stunning vellum document can be viewed at the entrance to the Library in a custom-made case. And a new exhibition in the Library celebrates the 150th anniversary of the publication of Alfred Russel Wallace's *Malay Archipelago* (1869) until mid-November, after which time it will be replaced by a small exhibition celebrating Linnaeus' Lapland journey.

Isabelle Charmantier, *Head of Colllections*
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:

Prof. Janis Antonovics

Janet Ashdown

Karen Magnuson Beil

Pierre Boillat

Dr Maarten Christenhusz

Prof. J.L. Cloudsley-Thompson

Lord Cranbrook

Gwilym Evans

Finska Vetenskaps-Societeten

Javier Francisco-Ortega

Jenny Grundy

Peter Hart

Martin Jacoby

Library of Prof. Peter Jewell & Dr Juliet Clutton-Brock

Colin Kilvington

Prof. Adrian Lister

A.R. Lord

Alex Menez

Prof. Brian Morton

Nepal Art Council

Jan Kresten Nielsen

Bijaya Pant & Bhakta Bahadur Raskoti

David Pescod

Sanjeev Kumar Rai

Real Jardin Botánico, Madrid

Tej Kumar Shrestha

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

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

Dr Cecil T. Prime FLS: A Teacher for all Times

We would like to write about Dr C.T. Prime (1909–79) to emphasise a mode of teaching which influenced us in a gentle but very powerful way and seems to incorporate features from which we can learn today. A group of us have personal memories of Prime which have sustained us over many years. Our contact with Prime has led his pupils to have had quite extraordinary and fruitful lives in biological and earth sciences (Simmonds 1999).

Education requires that the whole person is engaged in both the teaching and the learning experience (Jarrett 1991, Palmer 1997). What can we learn from the teaching and person of Prime? His entire attitude was scholarly in that everything required minute attention and was important. He was never competitive and, as his written work reveals, he depended upon friends and the community in his research and interests. He never put his students under pressure and allowed them to progress at their own pace, but he was always there if the student stumbled or had difficulties. We felt we were always valued and could go to him with ideas and suggestions however wild. He would always listen and give individual attention to his pupils.

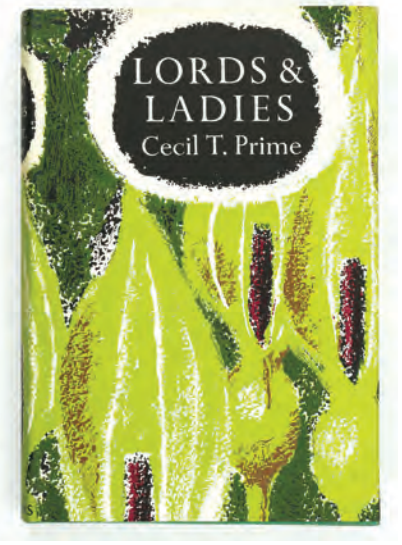
Since he felt everything was of value and of interest, he had a multidisciplinary approach to his teaching and took every opportunity to take the students out into fieldwork, ecology sites, research institutes such as Rothamsted Experimental Station, other laboratories, on expeditions and to other schools. He showed joy in observing and in discovery, especially when it was done by a pupil. This increased self-esteem. There was an enthusiasm for the encounter with the unknown and a wonder about what can be revealed to us. His description of pollination of *Arum* (Prime 1960) should be read as a classic example of precision and asking questions of the plant—he always challenged us with questions. Many of these questions stayed with us for the rest of our lives. We were to become life-long learners from his influence and to have profound reverence for knowledge and the sanctity of life.

Born and brought up in Cambridgeshire, he studied botany at Cambridge University (1927) and on graduation went to Whitgift School, Croydon in September 1931 to become a teacher, a position he held until his retirement in 1969. He was latterly Head of Science. Prime had a love of botany that perfused the school, the local community, national bodies and internationally. His main research work on *Arum maculatum*, for which he

was awarded a PhD, was published as a book in the New Naturalist series (1960). At the young age of 25 years he was elected as a Fellow of the Linnean Society.

As his pupils, we were aware that he belonged to a Learned Society and this enhanced our understanding that we were being taught by a scholar. This role of learned societies in stimulating teaching and research is not appreciated sufficiently in the wider world. Prime knew of the work of Lilian Clarke FLS (1880–1934), a teacher at James Allen's Girls School (JAGS) in Dulwich, and her practical work designing school gardens with pupils compiling their own botany handbooks and textbooks. Both teachers were recognised as pioneers in a Symposium on the History of teaching of Natural History, held at the Horniman Museum in 2014 (Saunders 2014).

Prime always emphasised the importance of personal observation in botany and to look outside the classroom: the school woodlands, "the Copse", were used extensively, but with care. All pupils were urged to care for the environment, always to replace twigs and stones if uncovered. He was an early conservation enthusiast! He used a camera to record what he saw and did not encourage collection unless for a specific purpose.



***Lords & Ladies* by C. T. Prime, no. 17 in the *New Naturalist* series**

During the war years (1941–44) experiments were designed to examine the growth of potatoes under different conditions of nutrient supply (Prime 1944). The help of Rothamsted Experimental Station was most valuable in the experimental design and statistical analysis, with pupils working together as a community to produce food for the population (via the Red Cross). Statistical analyses showed that human sewage did not enhance the growth of potatoes as well as horse manure, but the addition of potash and nitrogen did help one form of sewage (Middlesex sewage).

When the pupils learn as a community they learn from each other, and this was very evident when the taxonomy of plants was investigated. Prime, with Deacock (1953) had produced keys to identify unknown plants and we all remember feverish arguments about the detail of the key ending in a shout… "It worked!" Prime was much amused and pleased with this outcome!

Teaching without extensive notes, but from cards, carefully prepared and arranged, he imbued even rather dry topics such as the hairiness or shape of a leaf with an intense interest which was infectious: "hirsute" and "ovate" are words we will not forget! When describing an event such as fertilisation, he involved us deeply in the process stimulating us to look for the mechanism of this process during later years. So even at the cellular level, his passion for the plant was evident.

Images: C.T. Prime photo courtesy John Kusel; Book cover photo by the Linnean Society of London

Prime encouraged the communication of science and every two years the science department of the school hosted student biological demonstrations at a Conversazione during which lectures also were delivered by students.

Expeditions with senior students under the auspices of the Botanical Society of the British Isles (Junior Section) included a well-remembered trip to the Oceanographic Observatory of Banyuls-sur-Mer, South of France, exposing students to totally new habitats and allowing them to learn from each other. The learning experience extended to less academic subjects such as sardanas dances in the open streets and consumption of local red wine (including the effects of overindulgence). These trips were so worthwhile for learning outside the conventional guidelines, from others and for forming friendships.

His continued interest in his students is undoubtedly the basis of the success they enjoyed as research workers, and in 1987 three became Fellows of the Royal Society (Simmonds 1999).

Lastly, and perhaps the foundations of his influence, were his happy marriage and family life (married to Frances with three daughters), and deep religious faith. Although he took divinity lessons, he did not, to our knowledge, talk to his students about his personal faith, but he did emphasise the importance in later life that we should have deep ethical convictions. His own faith expressed itself in everything he did: this is the essence of a deep faith acting with love. It is this love, given to all, which has been the essence of his profound and lasting influence.

John Kusel (John.kusel@glasgow.ac.uk) & John Hewitt (hewitt.j.h.@btinternet.com)

Acknowledgments

We owe a great debt of gratitude to William Wood, the Whitgift School and Foundation Archivist who alongside his colleague David Clifford, has been most helpful in tracing memories and papers of Prime. Also, we thank former pupils William Allaway, Ian Bonner, John Bryant, Peter Grant and Nigel Merrett for their written memories. The Church Warden, Tony Roberts, of St. Mary's Church, Farleigh, Surrey has supplied valuable information and photographs of the memorial stones from St. Mary's. Many thanks to him and to the Rector, the Rev. Michelle Edmonds.

REFERENCES

Jarrett, J. 1991. *The Teaching of Values*. Routledge.

Palmer, P. 1997. *The Courage to Teach*. Blackwood.

Prime, C.T. 1960. *Lords and Ladies (The New Naturalist)*. Collins.

Prime, C.T. 1944. Microplot experiments at Whitgift School. *School Science Review.* February, 96.

Prime, C.T. & Deacock, R.J. 1953. *The Shorter British Flora*. Methuen.

Saunders, D. 2014. 'The Work of Lilian Clarke and C.T. Prime in the development of botanical education in South London.' *The History of Teaching Natural History* (Society for the History of Natural History conference). Horniman Museum. (PDF available.)

Simmonds, N.W. 1999. Prime's People. *The Whitgiftian*. 502: 126–128.

Correspondence

Action for Biology in Education

In the 'In Memoriam' for Sir David Smith published in October 2018 there is reference to him being involved in *Action for Biology in Education*. As the initiator and secretary of this group in the 1990s I do not recollect Professor Smith being involved at all, though I may be unaware of a background contribution.

From the outset we had a lot of support from the Society, financially and from interested Fellows, which enabled the idea of promoting biology as a vital part of education to take off. Our first event, funded by the Society, took place at Edinburgh Botanic Garden. The Chelsea Physic Garden and the Field Studies Council were very supportive, and hosted events. A number of other organisations including the Royal Society also supported our aims.

However, by the time Sir David became president ABE (initially *Action for Biology in Schools*) was independent of the Linnean Society and a charity in its own right.

But despite having organised a millennial event—Backyard Biodiversity Day—and run a number of Forensic Biology workshops for schools and a Marine Biology event, it was very difficult to raise enough finance to market our ethos and activities to schools, even with a Millennial Award for the Forensic Biology events.

A small group of dedicated people did all the groundwork, but sadly we had to close in 2003 for lack of funds and personnel. Perhaps we were before our time, though I like to think that a little flame was generated and that the Linnean Society helped to spark it.

Virginia Purchon BEd FLS

Dueling Charges of Plagiarism in the mid-19th Century World of Microscopy—Who was the Copycat?

John R. Dolan FLS

Laboratoire d'Océanographie de Villefranche-sur-Mer
Station Zoologique, B.P. 28, 06230 Villefranche-sur-Mer, France

e: dolan@obs-vlfr.fr

From opposite sides of the Atlantic, plagiarism charges were launched in the 1850s. The first North American manual of microscopy, by Joseph Wythes, was published in 1851. The book was reviewed in the first issue of the British journal the *Quarterly Journal of Microscopical Science* and roundly denounced. The American author was accused of plagiarising a standard British manual by John Quekett. The second issue of the same journal accused Wythes of having copied, in a second book, a very popular British book aimed at a young audience on the wonders of microscopy, by Agnes Catlow. In 1854 a new British manual of microscopy by Jabez Hogg FLS was published. A critic in North America labeled the book to largely be a British copy of that first American manual by Wythes. Undeterred by charges of plagiarism, the two microscopy manuals, on opposite sides of the Atlantic—the American by Wythes and the British by Hogg—each became standard reference works going through many editions. Here I attempt to sort out the charges, present examples of the evidence of presumed copying along with some consideration of the norms of the times. I leave it to the reader to decide who was a copycat.

> “Undeterred by charges of plagiarism, the two microscopy manuals, on opposite sides of the Atlantic—the American by Wythes and the British by Hogg—each became standard reference works going through many editions.”

Some explanation is likely due as to how one might learn of relatively obscure charges of plagiarism from over 150 years ago, and why such charges may be of interest. As a microscopist, and also a fan of old books containing images of microscopic organisms, I acquired a copy of an 1851 book by Agnes Catlow, *Drops of Water.* Intrigued by both the Catlow’s illustrations and prose, I searched for documents containing the term “Agnes Catlow”, luckily an unusual name. This bought up an 1853 review of a book in the *Quarterly Journal of Microscopical Science* (Anon.

1853a) in which an American author, Joseph Wythes, is lambasted for copying *Drops of Water* entirely. In the review, reference is made to another book review in the previous journal issue (Anon. 1853b). In this first review, this very same author is accused of having copied at length from the classic British microscopy manual by John Quekett (Quekett 1848). Thus, one is led to finding out who this American author is, and exactly what is in his books.

Joseph Wythes, it turns out, is the author of the first American manual of microscopy (Warner 1982) and is said, without reference to the charges made against him, to be the victim of plagiarism by way of the British author Jabez Hogg FLS (Cassedy 1976). A plagiarist as victim of plagiarism is an irresistible topic. Here I consider the three charges in chronological order: first, the charge that Wythes copied Quekett, then the charge that Wythes copied Catlow, and lastly that Hogg copied Wythes.

With regard to legalities, it bears keeping in mind that at the time there was no international legal framework governing intellectual property rights of any sort. The Berne Convention, often considered year zero of international copyright law, was first signed by a few countries, notably not including the United States, in 1886. Nonetheless the copying of someone else's work without attribution was considered unethical as will be evident in the wording of the charges of plagiarism considered here.

1. Did Wythes copy Quekett?

The charge appears in the unsigned review of Joseph Wythes's 1851 book (Anon. 1853a) in the inaugural issue of the *Quarterly Journal of Microscopical Science*. The founding editor, Edwin Lankester, a very well known expert on microscopy and public health, could be the author of the review and in any event must have approved the review as editor. The reviewer states:

> Its plan and contents are so evidently founded upon the work of Mr. Quekett that we wonder the author did not at once acknowledge how largely he is indebted to that gentleman's labours. It is one of the grievances that literary men have to complain of in this country, that their works are reprinted in America without their obtaining any profit from the wide sale they meet with in that country, and the least they have to expect is, when their works are reprinted or extensively drawn upon, that the debt be acknowledged.
>
> As an instance of how much Dr. Wythes is indebted to the English professor, we would quote the chapter on Test-objects, which is scarcely more than an abstract of the chapter on the same subject in Mr. Quekett's book, and in which no pains have been taken by an alteration of expression to conceal the source of the information. The plates illustrative of this subject are also copied from Mr. Quekett's work, as well as many others.

The review pointedly includes a general lament for British authors copied in America. In defense of the American Wythes one should know that in the preface to his book he states, "free use has been made of English authorities". Admittedly, some "English

authorities" are only named in passing and that is only in the first chapter on the history of microscopy. However, in the example given in the review, the Wythes's section on 'test objects', this particular section is introduced by Wythes with the sentence:

> The discovery of this class of objects by Dr. Goring, a full account of which may be found in Mr. Pritchard's works on the Microscope, was the chief cause of the modern improvements in the achromatic compound microscope. (Wythes 1851 pg. 98.)

Fig. 1 shows that the contentious material appearing in the Wythes book certainly could have originated entirely from Quekett, not mentioned by Wythe in the section, or at least in part from the Pritchard & Goring book (Pritchard & Goring 1845) mentioned in the beginning of the section by Wythes. The Pritchard and Goring book is stated by Quekett to be the source of his material on 'test objects'. Quekett's text is largely in quotation marks. Regardless of which source Wythes used, it is obvious that Quekett was not the original author of the material appearing in the Wythes book. Consequently, the reviewer accusing Wythes of plagiarising Quekett appears to have picked a rather bad example. As noted in the figure legend, interestingly, the contentious section on 'test objects' does not appear in the third and fourth editions of Wythes's book. One might speculate that he took the criticism to heart.

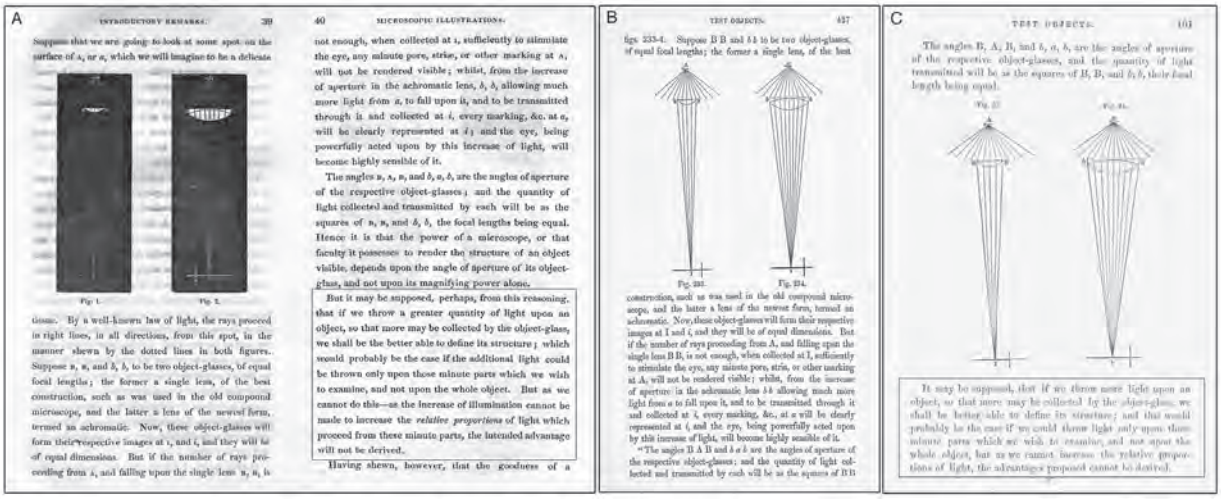


Fig 1. Shown in ***A***: Pages 39 and 40 of "Test Objects" from Pritchard & Goring's 1854 *Microscopic Illustrations*. Shown in ***B***: Page 427 of Quekett's *A Practical Treatise on the Use of the Microscope* (1848). Pritchard & Goring are given as the source of the material; note the quotation marks. Shown in ***C***: Page 101 from Wythes's 1851 *The Microscopist*. The unattributed drawing in Wythes appears to be from Quekett, but the text (box) may have been copied from directly from Pritchard & Goring whose work is mentioned by Wythes in the beginning of the chapter. Recall that in his preface Wythes states that "free use has been made of English authorities". The 'Test Objects' chapter was included in the second edition but not in the third edition (1877) or the fourth and last edition of Wythe's book (1880). For these latter two editions Wythes dropped the "s" at the end his name.

2. Did Wythes copy Catlow?

The second issue of the *Quarterly Journal of Microscopical Science* carried a review of Joseph Wythes's second book, *Curiosities of the Microscope*, destined for a young audience (Wythes 1852). The short review (Anon. 1853b) stated that plates and descriptions of infusoria were directly copied from Agnes Catlow's *Drops of Water.* The review concluded by saying:

> On account of the proved plagiarism of this part of the work, we understand the publishers of Miss Catlow's book have been enabled to prevent the further sale of the American work. We have felt it our duty to call attention to this gross violation of the rights of authorship, and regret to find that it has been perpetrated by a gentleman who claims by his titles to belong to both the medical and clerical professions.

What the review did not point out was that not only were the plates and text copied from Catlow's book, the Wythes book reproduced the nearly square shape of the Catlow book as well as the distinctive page design of the text in a large square (Fig. 2). The evidence appears strong that Reverend Joseph Wythes made free with Catlow's book. The charge of plagiarism apparently did not deter the sale of Wythes's book in America as the second (1853) edition of his microscopy manual included a full page advertisment for *Curiosities of the Microscope* with several very laudatory blurbs attributed to various periodicals (Fig. 3). Interestingly, the advertisement did not appear in the third edition (Wythe 1877), in the fourth edition (1880) nor in the last ('fourth enlarged') edition (Wythe 1883).

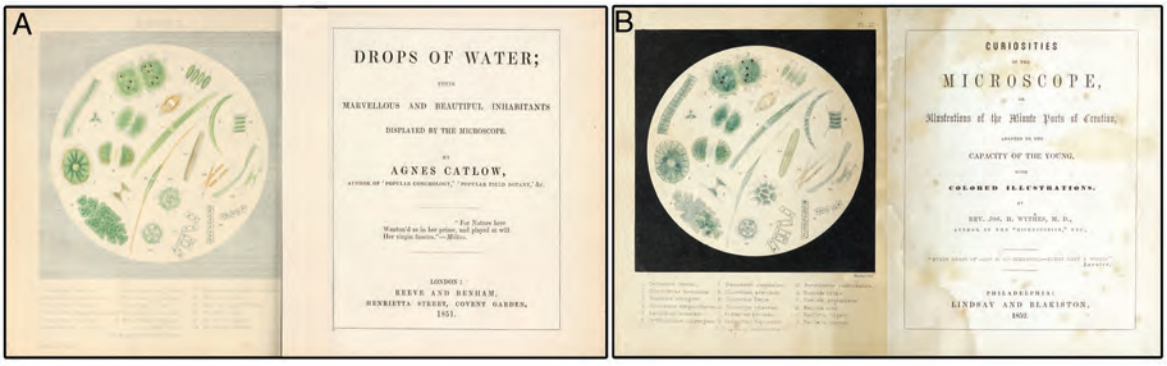


Fig. 2 Shown in ***A***: Catlow's 1851 *Drops of Water.* Shown in ***B***: Wythes's 1852 *Curiosities of the Microscope* (B). Note that Wythes book reproduced not only Catlow's plates, but also the nearly square shape of the book and the page design.

Oddly enough both books are cited in the history of popular microscopy in 19th-century America by Warner (1952) but without any mention of their remarkable similarity. One might ask what is the legacy of the two books? Catlow's book is a well-known popular Victorian account of the microscopic world still cited in recent years (e.g., Keene 2015, Lightman 2015; Dolan 2019). I could find no citations of Wythes's

1852 book. It would appear that Catlow's popular account is still remembered while Wythes's book has been largely forgotten.

3. Did Hogg copy Wythes?

The charge that the English author Jabez Hogg FLS in his 1854 book *The Microscope* (Hogg 1854) copied material from Wythes's American manual *The Microscopist* was made in an unsigned review of Hogg's book in the fourth issue of the journal *The North American Medico-Chirurgical Review* (Anon. 1857). It appeared in July of the journal's inaugural year. The journal was founded and edited by two well-known physicians, Samuel David Gross and Tobias Gideon Richardson. Of the two editors, Richardson was the author of *Elements of Human Anatomy* (Richardson 1858), containing considerable material on microscope structures, and so appears to be the more likely expert on microscopy. Furthermore, the samples given in the review concern the section on micro-injections, a topic presumably, with which the anatomist Richardson would be quite familiar. The scathing review begins with the paragraph below:

THE CURIOSITIES OF THE MICROSCOPE;

OR,

ILLUSTRATIONS OF MINUTE PARTS OF CREATION.

WITH

NUMEROUS ILLUSTRATIONS.

BY THE REV. JOSEPH H. WYTHES, M.D.

AUTHOR OF "THE MICROSCOPIST," ETC., ETC.

"Every grain of sand is an immensity—every leaf a world."—LAVATER.

A neat 16mo. volume. Cloth, gilt, $1 00.

"This is a beautiful little book—beautiful in its printing, its colored plates, and its whole getting up, and is well adapted to instruct and amuse those for whom it is intended. There are twelve plates, containing numerous figures, drawn with much care, even to minute details. The spirit of the work is excellent, and we wish it in the hands of all the children of the land."—*Silliman's Journal.*

"It communicates substantial knowledge in the most entertaining way, and opens to the young intellect the whole subject of natural philosophy. The colored engravings greatly illustrate these instructions. We have seen no book written for young people that we can more cordially recommend."—*Christian Advocate and Journal.*

"The revelations of the microscope are truly astonishing; and the effort to unveil the minute parts of creation visible to youthful eyes by its amazing power, is worthy of praise. The style of this volume is adapted to the class for which it is prepared; and the numerous illustrations, beautifully colored, not only add to its beauty, but also to its usefulness."—*Recorder.*

"The style of the book is simple, yet comprehensive; and there are few men and women who will not, as well as the young, find pleasure and instruction in its pages. The colored plates, showing the appearance of a variety of things, animate and inanimate, as they appear when subjected to the microscope, are well executed, and form not the least attractive feature in the volume."—*Home Gazette.*

"For children who have any germs of a taste for scientific investigations, this little book would be highly attractive, and would encourage in all whom curiosity might tempt to its perusal, that love of Nature which forms one of the purest and richest sources of pleasure through life."—*Saturday Post.*

"No more beautiful present can be given to our children, nor one better calculated to enlarge their views of the wonders of creation. It will also furnish much knowledge to children of a larger growth."—*State Banner.*

LINDSAY & BLAKISTON,

Publishers.

Fig. 3 The advertisement for Wythes's *Curiosities of the Microscope* in the fly pages of the 1853 edition of his microscopy manual, *The Microscope*.

> Our Transatlantic neighbors have so often indulged in whining complaints of the appropriation of their literary labors by others, that it has become a sort of stereotyped criticism upon American publications, no matter how faithfully they may have given credit to their contemporaries when occasion required a reference to their productions. In this instance, however, now before us, the boot is on the other foot. The book of Mr. Hogg has, no doubt, considerable merit as a compilation; and in giving it this title, we mean no disrespect, for it is our opinion, that no useful book on the microscope has been, or can be written, which is not, to a great extent, a compilation. Even Quekett, whose work is regarded as a standard, is largely indebted to his predecessors, especially the works of Pritchard and Goring. Yet that some notice should be taken of their researches, is certainly due to those who have gone before, no matter to what nation they belong. In the work of Mr. Hogg, this common principle of courtesy, and we might add, of honesty, is entirely ignored in reference to an American author, the first, we believe, in this field of research in this country, Dr. Joseph H. Wythes, from whose book, "The Microscopist", whole paragraphs, and nearly

> an entire chapter, have been copied verbatim et literatim, without the slightest acknowledgement or reference—a Hogg-ish proceeding certainly.

As the reviewer begins by commenting on English complaints about Americans, and goes on to specifically mention the English source (Quekett) Wythe was accused of copying, it appears then that the reviewer was directly responding to accusations made earlier against Wythes in the *Quarterly Journal of Microscopical Science* (Anon. 1853a). The review goes on to present several sections of text from Wythes's book side by side with the corresponding text from Hogg's book. An example of the texts and the illustrations are given in Fig. 4. The evidence of copying by Hogg appears unambiguous. The parting shot of the reviewer exposes a certain disgust, which is telling evidence that while not illegal, copying was obviously considered unethical and perhaps even despicable:

> We can scarcely trust our pen to express our utter contempt for the conduct of which Mr. Hogg has been guilty, and dismiss the subject with the above exposé of his plagiarism.

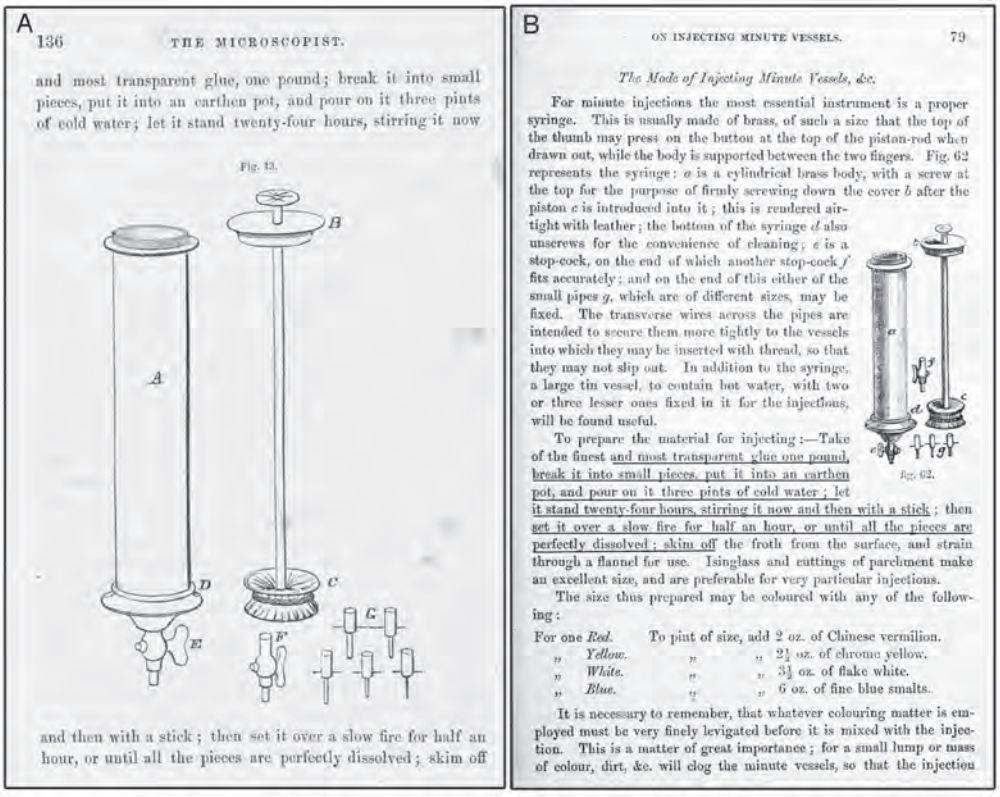


Fig. 4 Shown in ***A***: Page 136 from Wythes's 1851 *The Microscopist* showing the syringe for micro-injections and instructions for preparing injection material. Shown in ***B***: Page 79 from Hogg 1854 containing both the sketch of the syringe and the instructions without attribution of any sort. The text and illustrations were included in all the subsequent editions of Hogg's book, up to and including the last and 17th edition (1898) that appeared the year preceding Hogg's death.

Fig. 5 The covers of the microscopy manuals by Wythes and Hogg greatly resembled each other.

The Wythes and Hogg books, like the Wythes and Catlow books, physically resembled each other at least judging from covers (Fig. 5). However it should be pointed out that the design of the cover of a book was perhaps not one of the prerogatives of an author. If publishing a book in the 1850s is anything like it is now, it is the publisher who tightly controls the overall design and appearance of a book.

Hogg's book was also reviewed in the *Quarterly Journal of Microscopical Science* but quite glowingly, with no mention of any similarities with the Wythes book reviewed earlier (Anon. 1854). As noted in the legend to Fig. 4, Hogg included the contentious material in all the subsequent editions of his book. Hogg seems then to have been either ignorant of, or indifferent to, the charge of plagiarism. It should be mentioned that both Joseph Wythes and Jabez Hogg were substantial personalities in their respective communities. Wythe was a 'Professor of Microscopy and Biology in the Medical College of the Pacific' in San Francisco, a school that merged with the University of California Medical School in later years. Wythes's pocket-sized *The Physician's Dose and Symptom Book* went through 17 editions. Hogg was quite active in the Royal Microscopical Society (Michael 1941), and a member of the Royal College of Surgeons of England. Neither appeared to have had their careers damaged by

accusations of plagiarism. Finally, one could say that, in the end, the duel appears to have been a draw.

REFERENCES

Anon. 1853a. The Microscopist or a complete Manual on the Use of the Microscope by Joseph H. Wythes, M.D., Philadelphia. Lindsay and Blackiston. *Quarterly Journal of Microscopical Science* s1–1:51–53. https://jcs.biologists.org/content/joces/s1-1/1/51.full.pdf

Anon. 1853b. Curiosities of the Microscope by the Rev. Jos. H. Wythes, M.D. Philadelphia: Lindsay and Blakiston. s1–1:138. https://jcs.biologists.org/content/joces/s1-1/2/138.full.pdf

Anon. 1854. The microscope: its history, construction, and applications. By Jabez Hogg, M.R.C.S. London, Orr and Co. *Quarterly Journal of Microscopical Science* s1–2:277–278. https://jcs.biologists.org/content/s1-2/8/277b

Anon. 1857. The microscope: its history, construction, and application. *The North American Medico-Chirurgical Review* 1: 571–574.

Cassedy, J.H. 1976. The Microscope in American Medical Science, 1840–1860. *Isis* 67: 76–97.

Catlow, A. 1851. *Drops of Water: Their marvelous and beautiful inhabitants displayed by the microscope*. London: Reeve and Benham.

Dolan, J.R. 2019. From the Popularization of Microscopy in the Victorian Age: A Lesson for Today's "Outreach". *Protist* 170: 319–327.

Hogg, J. 1854. *The Microscope: Its history, construction, and application*. London: The Illustrated London Library.

Keene, M. 2015. *Science in Wonderland*. Oxford: Oxford University Press.

Lightman, B. 2010. The Microscopic World. *Victorian Review* 36: 46–49.

Michael, A.D. 1941. The History of the Royal Microscopical Society. *Journal of the Royal Microscopical Society* 61: 16–29.

Pritchard, A. & Goring, C.R. 1845. *Microscopic Illustrations of Living Objects.* London: Whittaker and Co.

Quekett, J. 1848. *A Practical Treatise on the Use of the Microscope*. London: Hippolyte Bailliere.

Richardson, T.G. 1858. *Elements of Human Anatomy*. Philadelphia: Lippincott, Grambo and Co.

Warner, J.H. 1982. Exploring the Inner Labyrinths of Creation: Popular Microscopy in Nineteenth-Century America. *Journal of the History of Medicine and Allied Sciences* 37: 7–33.

Wythes, J.H. 1851. *The Microscopist*. Philadelphia: Lindsay and Blakiston.

An Unrecorded Photograph and Insights into the Character of Robert Garner FLS

R. B. Williams FLS

e: raybw66@gmail.com

In 1867 the London publisher Robert Hardwicke issued an anonymous work entitled *Holiday Excursions of a Naturalist: Forming a Guide-Book to the Natural History of the Inland and Littoral*. Although Kennedy *et al*. (1971) and Carty (2000) record the author as Robert Garner (1808–90), I have hitherto failed to discover their original evidence for this. Recently, however, I obtained a copy of this book providing cogent proof of the author's identity, for it contains an original photograph, inscribed "The Author" (Fig. 1). Those same words in other presentation copies of *Holiday Excursions* and *The Natural History of the County of Stafford* (Garner 1844) are in handwriting identical with Garner's.

Fig. 1 A photographic portrait of Robert Garner (original image 9.2 × 5.3 cm, not cut square).

The photograph is clearly of the same person shown in the only two previously known images of Garner. One, a photograph in The Potteries Museum and Art Gallery, Stoke-on-Trent, is of a portrait painting, the original of which is lost. The other, a published lithograph (Anon. 1886) of another photograph, perhaps taken during the portrait sitting, bears a striking resemblance to the missing painting but this photograph is also untraceable. The most likely London repositories, namely the National Portrait Gallery, the British Museum, the Linnean Society, the Royal College of Surgeons, the

Wellcome Library and the Natural History Museum, hold no portraits of Garner. The present photograph may therefore be unique.[1]

Robert Garner was a surgeon-naturalist who resided for most of his life in Stoke-on-Trent. Desmond (1977) provided several biographical sources,[2] which reveal rather little of Garner's family life and personal traits. However, the account by Edees (1950) is the most extensive; he alone drew information from *Holiday Excursions* (Anon. 1867), and since Garner's excursions are mostly undated, Edees attempted to place them in context.

Nevertheless, much more may be discovered from *Holiday Excursions*. It is a largely overlooked work in which Garner displayed remarkably extensive knowledge of zoology, botany, geology, topography, ethnology, linguistics and antiquities, comparable with his similarly based account of Staffordshire (Garner 1844, 1860a). Travelling widely with family and friends, he described many localities, both British and foreign, and exhibited his familiarity with the works of contemporary naturalists. Especially valuable are his explanations of vernacular names of local faunae and florae, providing, often in comprehensive footnotes, their Latin names.[3] Equally valuable are the insights into Garner's social network of professional associates and friends, though not all are named. His entertaining anecdotes reveal aspects of his character, particularly his self-deprecating sense of humour and irony, not readily evident from formal biographical accounts.

Although an outstanding medical student during 1829–30 at the then new University of London, scoring a tally of two gold and four silver medals with eight certificates of honour, Garner gained no medical degree, since the university was not empowered to confer them until 1836 (Edees 1950: 18). Clearly, however, he was not at all self-conscious about this:

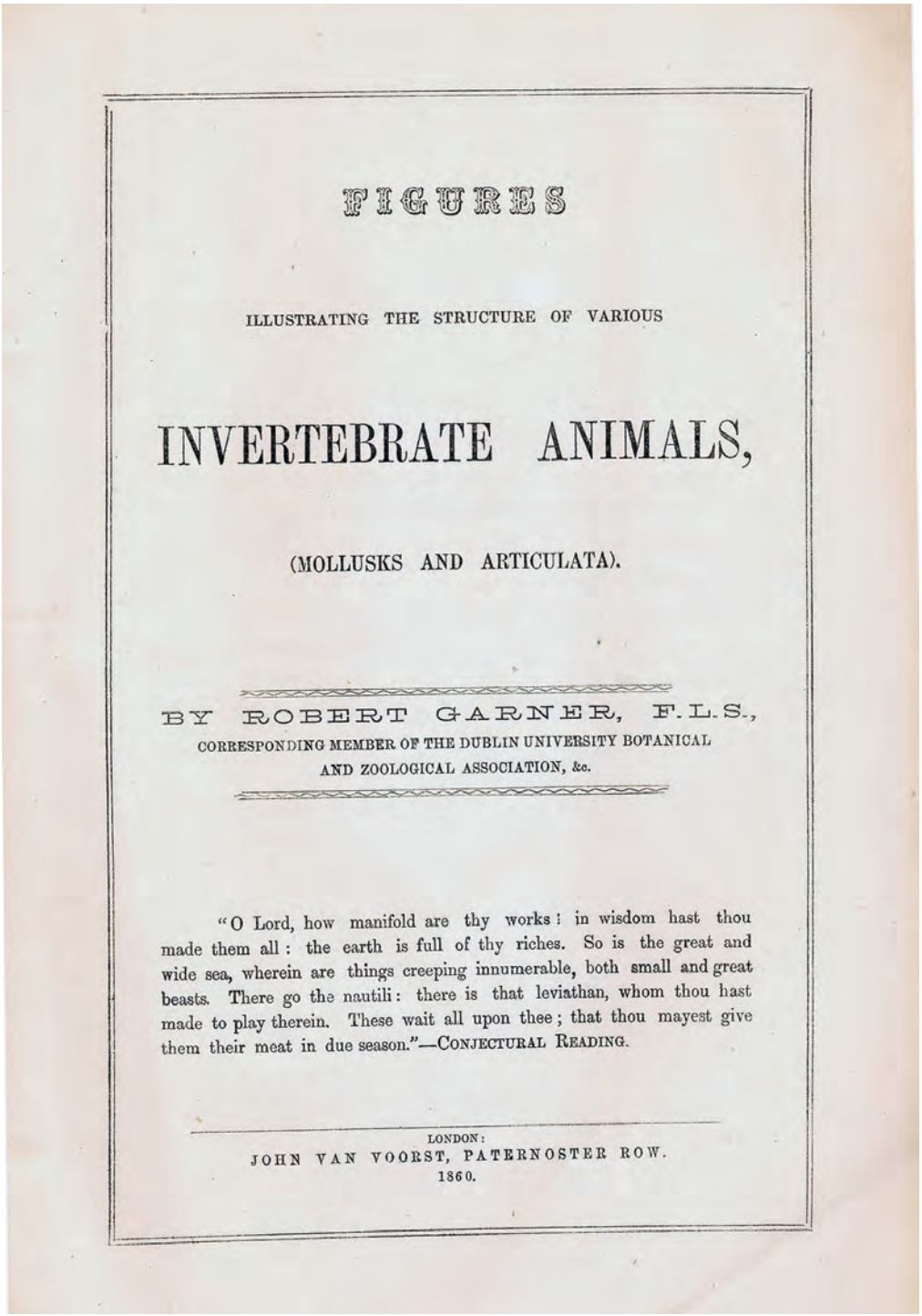
> Professors and doctors abound in Scotland. The writer was dubbed professor *in the landlady's bill*. 'Ye are na a professor, then? Then may be ye are a doctor of medicine? No! Ye are na a minister, sure?' I fell many degrees in the good woman's estimation when I affirmed that I was simply Mr. So-and-So. (Anon. 1867: 185)

Nevertheless, he ultimately earned the post-nominals L.S.A. (1830, Licentiate of the Society of Apothecaries), F.L.S. (1835–1890, discontinuously owing to pecuniary

1 It is not a carte-de-visite, but is rough-cut from thin photographic paper. I have traced no other examples.

2 Biographical notes are provided online by The Royal College of Surgeons of England (Plarr's *Lives of the Fellows*, accessed 16 June 2019), at URL: https://livesonline.rcseng.ac.uk/client/en_GB/lives/search/detailnonmodal/ent:$002f$002fSD_ASSET$002f0$002f374128/one?qu=robert+garner&te=ASSET

3 Referring to some fossils, "Specimens of Terebratula, Rhynconella, and Spatangidae, if I may coin the last word" (Anon. 1867: 41), Garner apparently believed that he had established a new family of echinoids (phylum Echinodermata), not realising that Gray (1825) had founded the Spatangidae long before with type-genus *Spatangus*.



FIGURES

ILLUSTRATING THE STRUCTURE OF VARIOUS

INVERTEBRATE ANIMALS,

(MOLLUSKS AND ARTICULATA).

BY ROBERT GARNER, F.L.S.,

CORRESPONDING MEMBER OF THE DUBLIN UNIVERSITY BOTANICAL AND ZOOLOGICAL ASSOCIATION, &c.

"O Lord, how manifold are thy works! in wisdom hast thou made them all: the earth is full of thy riches. So is the great and wide sea, wherein are things creeping innumerable, both small and great beasts. There go the nautili: there is that leviathan, whom thou hast made to play therein. These wait all upon thee; that thou mayest give them their meat in due season."—CONJECTURAL READING.

LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.
1860.

Fig. 2 Title-page of *Figures Illustrating the Structure of Various Invertebrate Animals* (original page 28.1 × 18.9 cm).

considerations), and F.R.C.S. (1864). In 1830, Garner's final medical studies undertaken at the hospitals of La Charité and Hôtel Dieu in Paris presented the opportunity to meet well-known naturalists such as Georges Cuvier, Geoffroy St Hilaire and Henri de Blainville. However, events took a dramatic turn when he took part, possibly at some risk, in tending the wounded following the July Revolution that precipitated the abdication of Charles X (Edees 1950: 19).

"Events took a dramatic turn when he took part, possibly at some risk, in tending the wounded following the July Revolution that precipitated the abdication of Charles X."

We may here clear up Edees' (1950: 32) confusion regarding Garner's attributions of "Corresp. Memb. of the D. U. Z. and B. A., of the Epid. Soc. &c." (Garner 1860a: title-page). Having erroneously taken "D. U. Z." to stand alone for "Deutsche Universitiits Zeitung", Edees then regarded "B. A." as a separate abbreviation for "British Association". In fact "D. U. Z. and B. A." comprises a single entity standing for "Dublin University Zoological and Botanical Association", as indicated (slightly amended) on the title-page of Garner (1860b) (Fig. 2).[4]

Garner's family played a significant part in his studies. His first wife drew trees for *The Natural History of the County of Stafford* (Garner 1844; see "Mrs Garner", p. [vii]). Their children also made useful contributions: "I searched the shore well at Ramsey, and also the rocks near St. Maughold's Head, or rather I and mine did.[5] Children are capital collectors when they are taught a little, the terriers of such sportsmen as the writer" and "I might give a long list of such Algæ as my young people[6] brought to me" (Anon. 1867: 81, 83). The dedication in *Holiday Excursions* is to Garner's second wife: "To his gentle companion in most of the excursions described this little book is dedicated by her husband the author".

Garner's social ease and mutual teasing with "lady-friends" appears to be somewhat inconsistent with modern perceptions of what was acceptable in Victorian times: "At a meeting of the British Association (*the British Ass*. my lady-friends sometimes call

4 Elected on 15 October 1858 (see *Proceedings of the Dublin University Zoological and Botanical Association* 1 (2): 162 (July 1859).

5 This references the Isle of Man, visited apparently around the meeting of the British Association for the Advancement of Science at Liverpool in 1854. Garner had four children with his first wife, Lucy Cotterill, who died in 1844 (Edees 1950): Lucy Emma (1834–1906); Henry Fletcher (1836–37); Robert Cotterill (1838–62); Henry Middlemore (1841–65). Since Lucy and Robert were elsewhere in 1854 (Edees 1950), only Henry could, in fact, have been with his father, presumably accompanied by Garner's second wife, Emma Bishop, whom he married in 1848, but there were no further children (Edees 1950).

6 "Young people" presumably refers to Henry, perhaps with friends.

it) …" (Anon. 1867: 61). Indeed, he records one instance that some contemporaries might have considered quite scandalous. Having failed, because of rough seas, in an attempt to explore the Calf of Man:

> The nugatory result of my excursion obtained for me the banterings of my female friends upon my return, who asked me what I thought of the Calf of Man, with other withering insinuations, under which I succumbed not, but, to end matters, avowed that I had enjoyed the trip much, especially as the squally weather afforded me numerous views of the *calf* of the other portion of creation—there were ladies on board. (Anon. 1867: 67–68)

Nevertheless, Sir Oliver Lodge described Garner as "deeply religious", with strong views about Sunday observance, Bible reading and Christian conduct; this was, however, orthodox Victorianism and he never displayed any deep emotional fervour (Edees 1950: 42). Garner had been educated variously by a Wesleyan minister, an Anglican clergyman and Roman Catholic priests of Aston Hall and Sedgley Park (Edees 1950: 17). Hence, perhaps, his religious compromise and self-deprecating humour on his arrival on the Isle of Man in 1854:

> The day after my arrival was Sunday, and as the Manx are, ostensibly at least, a religious people, often perhaps, like the Welsh, visionary and superstitious, I made no long excursion. Chapels appear to be much more numerous than churches, and there was out-door preaching, by the regulars however, in the afternoon on the quay. My friends went to conventicle in the morning, and I with them, but I did not feel obliged to sit out a second long discourse in the afternoon, and therefore climbed the headland, and at one place the rocks looked so tempting that myself and a friend with me yielded, and got down, myself however to be punished, as I tripped, slid down, and suffered a rent in the habiliments. (Anon. 1867: 63–64)

Being an Anglican associated with the church of St Peter ad Vincula in Stoke-on-Trent, Garner was not apparently much in favour of evangelical dissenters, but nevertheless maintained his equanimity, tempered by customary humour during this 1865 encounter in Cornwall:

> What solitude is too remote for the tract distributor to penetrate? I received one from a puritanic-looking man in Kynance Cove, with an injunction to read it for my good. I promised to do so as I went home on the coach, and wandered on. Presently up came a choleric-looking gentleman, nervously fingering his cane, as if inclined to use it, and demanding whether I had just before given his son a tract. I said I had not, but if he himself would like one he might have mine, as I had just been presented with one, and did not care much about it. I saw he was in no humour to be joked, so walked on. (Anon. 1867: 150)

Even when, on the title-page of his *Figures Illustrating the Structure of Various Invertebrate Animals* (Garner 1860b) he quoted the King James version of Psalm 104

Fig. 3 Prime Minister William Ewart Gladstone

so beloved of Victorian naturalists, he could not resist mischievously, almost covertly, replacing "There go the ships" by "There go the nautili", excusing himself by describing it as a "conjectural reading" (see Fig. 2). Maintaining his French connections, he presented a copy to Henri Lacaze-Duthiers of Lille (now in my collection).

In his later years, Garner surprisingly peppered a paper on "Blackberries" with oblique political references and his wry humour (Garner 1886), apparently stimulated by William E. Gladstone's (Fig. 3) very public confrontation with T. H. Huxley:[7]

> When a great statesman, though not generally a Conservative, gives his attention to the *preservation* of our small fruits, we lesser lights may be excused for taking up the subject of blackberries … In the brambles, according to Mr. Darwin's views, it may be said that we have the manufacture of species going on before our eyes; according to this view we need have no regard to any original species; wherever the locality and circumstances are suitable for a sufficient length of time, there a suitable variety or species will be found … But let us leave the more difficult Darwinian part of the subject, and recur to the Gladstonian or culinary department.

In the same paper, Garner also revitalised Darwin's original comment[8] on taxonomic practice long before it became part of modern biological jargon:

> But with respect to the numerous varieties or species of rubus we may quote a facetious friend who divides botanists into two classes, "splitters and lumpers." Mr. Babington[9] splits "fruticosus" into so many varieties that he has no "fruticosus" left, whilst others lump so many kinds together as to make about thirty different looking plants into one.

"Getting on in life's course", Garner became increasingly concerned about a topic not usually addressed in naturalists' works during that era, the environmental effects of industrialism:

7 In 1885 and 1886 Gladstone and Huxley posited the biblical and geological arguments for and against creation in their famous exchanges in the periodical, *The Nineteenth Century*.

8 In a letter to Joseph Dalton Hooker (1817–1911), URL accessed 23 June 2019 (http://www.darwinproject.ac.uk/letter/DCP-LETT-2130.xml).

9 Charles Cardale Babington (1808–95), the eminent botanist.

> We also see the rising smoke and vapour from many works along this coast, as near Castell Llwchwr and Swansea, further to the right. But, looking nearer on Gower alone, those factories and furnaces might be far away, for they seem to have no bad influence on the appearance of the surface or of vegetation, and I was too well versed in the effects of such works not to notice them if they had been present. … A sort of eudiometry,[10] by means of observations on trees and plants, may be carried out in mining and manufacturing districts, and thus a judgment made of their healthiness or un-healthiness. (Anon. 1867: 128).

REFERENCES

Anon. [Garner, Robert] 1867. *Holiday Excursions of a Naturalist: Forming a Guide-Book to the Natural History of the Inland and Littoral*. London.

Anon. 1886. R. Garner, F.R.C.S., F.L.S. *Annual Report. North Staffordshire Naturalists' Field Club and Archaeological Society* 1886: 130–134.

Carty, T. J. 2000. *A Dictionary of Literary Pseudonyms in the English Language*. Second edition. London.

Desmond, R. 1977. *Dictionary of British and Irish Botanists and Horticulturists*. London.

Edees, E. S. 1950. Robert Garner, 1808–1890. *Transactions and Annual Report. North Staffordshire Field Club* 84: 13–45.

Garner, R. 1844. *The Natural History of the County of Stafford; Comprising its Geology, Zoology, Botany, and Meteorology: also its Antiquities, Topography, Manufactures, etc.* London.

Garner, R. 1860a. *Supplement to the Natural History of the County of Stafford*. London.

Garner, R. 1860b. *Figures Illustrating the Structure of Various Invertebrate Animals*. London.

Garner, R. 1886. Blackberries. *Annual Report. North Staffordshire Naturalists' Field Club and Archaeological Society* 1886: 121–124.

Gray, J. E. 1825. An attempt to divide the Echinida, or Sea Eggs, into natural families. *Annals of Philosophy* (new series) 10: 423–431.

Kennedy, J., Smith, W. A. & Johnson, A. F. 1971. *Dictionary of Anonymous and Pseudonymous English Literature (Samuel Halkett and John Laing).* New edition. New York.

10 A eudiometer is an instrument for ascertaining air purity or for analysing gases.

Charles Darwin on Tierra del Fuego: Yesterday and Today

Sergio Zagier FLS

Cuenca 4435, 1419 Buenos Aires, Argentina

e: sergio@zagier.com

Much is written regarding Charles Darwin's visit of a few weeks to Galápagos Islands on HMS *Beagle*, mostly because of the resulting influence on his scientific thought later on. Visiting the islands today is a wonderful experience from all points of view, notwithstanding some sites could experience a kind of overcrowding. In popular spots several cruise ships and sailing boats may coincide, and many people on beaches and wooden trails do not end up having a completely 'wild' experience.

However, Darwin's wanderings throughout the Fuegian Archipelago and the southern tip of South America (Fig. 1) are overlooked. His pass throughout the "End of the World" as it is sometimes called was much longer, being the main task of Captain Robert FitzRoy's expedition aboard HMS

Fig. 1 A map of South America contemporary to Darwin's journey

Fig. 2 The inner waters of the channels and fjords around the Beagle Channel, once the nightmare of navigators, have recently started to see more visitors.

Beagle to survey the area of Tierra del Fuego and the Magellan Straits. The *Beagle*, much of the time with Darwin on board, spent many months in the extreme waters of Patagonia, Falklands (Malvinas) and Tierra del Fuego, arriving in 1832 and departing in 1834.

Is that pristine environment accessible today or did it disappear forever for common people? The answer is that nowadays the landscape is quite the same as you might have seen two centuries ago, possibly even 50. Perhaps some hanging glaciers have changed its aspect, receding in some cases before flowing into the Beagle Channel. But the lack of settlements like towns and *estancias* (farms) has not changed much since the old days of exploration. Only a couple of small cities serve as the gateway for exploring the region: Punta Arenas in the Chilean Magellan Straits and Ushuaia in the Argentine section of Tierra del Fuego. Both countries share the area, though the huge constellation of islands, channels and fjords that were once the nightmare of navigators belong to Chile (Fig. 2).

The extremely low human development in European terms was seen in Darwin's time as a downside. Today it is considered a blessing to have the chance to witness an environment as it was during the last millennia, after the last de-glaciation. One aspect is completely different, however. There is no trace of the ancient peoples that for thousands of years inhabited the area, particularly in the inner seas. Except for shellfish and bone middens mixed with earth, no other signs can be found regarding natives. Even descendants are quite unknown today or very old in age. As John Goldsmith put it in 1977 when sailing on a replica of the *Beagle* being filmed for the BBC:

> Darwin lived in an age when huge areas of the world were undeveloped and untamed, where the spirit of man was still expansionist, where virgin country cried out to be settled and cultivated. In the late twentieth century, with our vast cities devouring and modern agricultural systems despoiling the land and our teeming populations—unimaginable to a Victorian—demanding that the process of destruction should continue, it is Tierra del Fuego which suggests life and the Brazilian jungles, torn up to make six-lane highways, bulldozed to make room for new towns and new industries, that suggest the death-process.[1]

How long this wilderness will remain untouched is uncertain. The most remote islands and channels to the south and west of the Fuegian Archipelago perhaps will be a no man's land for ever. They are too inhospitable, isolated, rough and dangerous. When surveying in the *Beagle* in 1827, Commander Pringle Stokes wrote on his journal:

> The nature of the coast like all that I have hitherto described, to the westward of Cape Froward [the southernmost tip of the American continent], rocky and barren, an utter solitude, uncheered alike by man or any other animal, save a few water fowl, geese, shags, and penguins.[2]

But the more accessible Magellan Straits and Beagle Channel are being "menaced" by the slow development of new roads built by the Chilean and Argentinian governments. It is not a change that can be measured in just a few years; it will take decades. Chile has a master plan of approaching the extremes of its incredible labyrinthine southern coasts. Dirt roads are traced to sites like Yendegaia Bay in the Beagle Channel, between Ushuaia and the glaciers that flow into that watercourse. Argentina too has recently developed a controversial project for a road along the northern side of the Beagle Channel eastward. If built, it will be the end of pristine historical sites, as well as the known and unknown indigenous repositories that date back thousands of years. The aforementioned roads have no other purpose than to approach remote areas for recreation by car and SUV.

> **"It was there, in Wulaia Bay, that Captain FitzRoy attempted to develop a settlement for three young Fuegians that were for some time educated in Britain."**

Some of the events of the *Beagle* expedition (1831–36) happened along coastal sites of the Beagle Channel. As well, a previous expedition on HMS *Adventure* and *Beagle* (1826–30, captained by Philip Parker King) had relevant activities in the area of the archipelago. In some cases, the surveying of complex channels had to be done by whalers and small boats.

An especially eventful site is located slightly south of the Beagle Channel, in the coast of a short and narrow channel called Murray. It was there, in Wulaia Bay (Fig. 3), that Captain FitzRoy attempted to develop a settlement for three young Fuegians that were for some time educated in Britain (the

Fig. 3 South of the Beagle Channel **is** Wulaia Bay, where Captain FitzRoy attempted to establish a settlement

famous Jemmy Button amongst them). The trial did not succeed and was ended a few weeks after it began. Some years later the place also witnessed a massacre of missionaries.

Several of the sites that can only be approached by water can be visited today. Besides renting a sailing boat with crew in Ushuaia or Puerto Williams (a small Chilean village in the southern coast of the Beagle Channel), every austral summer some of the cruise liners that navigate from Ushuaia to Antarctica or round South America pay short visits to Cape Horn and other sites. Renting a boat maximises accessibility to any spot in the area, no matter how small or hidden, but is costly.

Perhaps the best and most realistic option to visit the area (to fully engage with both the history of exploration and the natural history of the surroundings) is to take one of the weekly cruises given by the Chilean company Cruceros Australis. They operate during the hottest part of the year with two vessels of 200 passengers, with landings in places like Cape Horn, Wulaia, glacier fronts, etc.

In particular, the visit to Wulaia Bay includes a walk to a view point from where it is possible to see the whole area, including Button Island and some other islets. It is also possible to wander throughout the shore and appreciate the remains of native settlements in the form of piles of shells of molluscs, burnt bones from seals and birds, rock splinters and even an arrow or a spearhead. The cruise company has organised a museum about the Fuegians inside an old building that remains there.

Another highlight of a Fuegian sailing tour is a visit to Cape Horn lighthouse. Weather permitting, a turbulent journey of rubber boats on a small inlet takes the visitors to the base of a steep staircase that scales the cliff. A wooden trail of several hundred

meters then leads to the tower of the lighthouse, as well as the home of a Chilean Navy officer and his family, where they live year round, facing the dark and ominous ocean that separates them from Antarctica.

Last but not least, “Glacier Alley” is a section of the Beagle Channel west of Ushuaia that houses several hanging glaciers on the north shore of the waterway, most of them with names of European countries like Italy (Italia), Holland (Holanda) or Germany (Alemania). All of these glaciers are ‘born’ in the ice field over the extensive mountain range, Darwin Cordillera. It is supposedly Holland Glacier that ruptured and threatened to sweep away Darwin’s boats in this story of rescue:

> Our boats were hauled up out of the water upon the sandy point, and we were sitting round a fire about two hundred yards from them, when a thundering crash shook us—down came the whole front of the icy cliff—and the sea surged up in a vast heap of foam. Reverberating echoes sounded in every direction, from the lofty mountains which hemmed us in; but our whole attention was immediately called to great rolling waves which came so rapidly that there was scarcely time for the most active of our party to run and seize the boats before they were tossed along the beach like empty calabashes. By the exertions of those who grappled them or seized their ropes, they were hauled up again out of reach of a second and third roller; and indeed we had good reason to rejoice that they were just saved in time; for had not Mr. Darwin, and two or three of the men, run to them instantly, they would have been swept away from us irrecoverably. Wind and tide would soon have drifted them beyond the distance a man could swim; and then, what prizes they would have been for the Fuegians, even if we had escaped by possessing ourselves of canoes. At the extremity of the sandy point on which we stood, there were many large blocks of stone, which seemed to have been transported from the adjacent mountains, either upon masses of ice, or by the force of waves such as those which we witnessed. Had our boats struck those blocks, instead of soft sand, our dilemma would not have been much less than if they had been at once swept away.[3]

Usually one is unable to disembark near these hanging glaciers, owing to the lack of beaches and safety conditions. But one of them, Pia Glacier, though not visible from the Beagle Channel, lays inside a fjord and is a favourite spot for landing and watching large pieces of ice fall (Fig. 4). Several other spectacular glaciers that flow to fjords of the northwest shore of the island of Tierra del Fuego are also visited. These rivers of blue ice are surrounded by virgin forests and solitary beaches that have only recently started to see visitors, following decades of no human presence after the previous inhabitants vanished around a century ago.

A visit to the south of Patagonia and Tierra del Fuego becomes an amazing experience when accompanied with the reading of the journal or narrative of an early explorer.[4] Since Magellan five centuries ago, the southernmost extreme of America left deep emotions—good and bad—on the memories of most of the travellers that dared to confront it.

REFERENCES

FitzRoy, R. 1839. *Narrative of the surveying voyages of His Majesty's Ships* Adventure *and Beagle between the years 1826 and 1836, describing their examination of the southern shores of South America, and the* Beagle*'s circumnavigation of the globe. Proceedings of the second expedition, 1831–36, under the command of Captain Robert Fitz-Roy, R.N.* London: Henry Colburn.

Goldsmith, J. 1978. *Voyage in the Beagle*. London: Chatto & Windus.

Stokes, P. 2007, *The Journal of HMS* Beagle *in the Strait of Magellan*, in *Four Travel Journals*. London: The Hakluyt Society, Series III, volume 18.

Regarding Charles Darwin and HMS *Beagle* logs and journals, a convenient source on electronic format is available thanks to John van Wyhe, ed. 2002. *The Complete Work of Charles Darwin Online* (www.darwin-online.org.uk). As well, historical sea charts as *Cape Horn* and *Isla de los Estados* published by Zagier & Urruty impress showing the big amount of shipwrecks that populate those untamed waters.

Fig. 4 Pia Glacier, in Glacier Alley

In Memoriam

The past few months have seen the loss of several significant figures in taxonomy and systematics. They include both botanists and zoologists, with two having close links through work in Papua New Guinea.

Harold Trevor Clifford (1927–2019): An Australian botanist and taxonomist, Harold gained his PhD in England, then taught agriculture for three years in Nigeria. On returning to Australia, he lived and worked in Queensland, teaching botany at the University of Queensland for 34 years, and becoming Professor Emeritus on retirement. Also a Research Associate attached to the Geology section of the Queensland Museum, he focussed on the study of their fossil plant collection.

His research work fell into four main strands: the taxonomy of monocots (especially grasses), numerical classification, evolutionary taxonomy, and hybridisation. The unifying principles across these were, as he said in his professorial lecture in 1985, 'Taxonomy, Tradition and Technology'. Taxonomy was his main passion, with its ubiquitous application to almost every aspect of life: we name and classify things all the time, giving meaning to each. This passion revealed itself in his fascination with the linkages between 'things' across time and space, and the use of nomenclature to describe the nature of those 'things'. His love of discussion was enormous as he explored the world, bouncing ideas off people and in doing so probing concepts in his head, following this intellectual life with rigorous and diligent measurements and observations. With around 30 books and 200 research papers to his name, archives of his papers are held by the Hunt Institute for Botanical Documentation, and at the Basser Library (Australian Academy of Science).
http://www.austehc.unimelb.edu.au/guides/clif/CLIP001.htm
https://www.anbg.gov.au/biography/clifford-harold-trevor.html

David Gamman Frodin (1940–2019): David Frodin (*aka* Frodo) died in August after a short illness. After obtaining his degrees, David spent a year employed in the Division of Botany, Lae, New Guinea, as a temporary scientific officer, undertaking a number of herbarium study visits and short field trips in Australia and the Far East. A lecturer in botany in the University of Papua & New Guinea at Boroko, near Port Moresby from 1971 he participated in collecting field trips in Papua, New Caledonia, the Bismarck Archipelago, New Britain, with a range of taxa named after him. David was employed as a contract Senior Scientific Officer, at Kew, in what became the 'Species Plantarum' section in 1993, retiring in July 2000, becoming an Honorary Research Associate post-retirement. Widely known for his *Guide to the standard floras of the world* (for which he won the Engler Silver Medal

> "His informed opinions were well worth listening to. David was our Wikipedia before the internet."

for the second edition), and world checklists (Araceae, Araliaceae, Euphorbiaceae, Fagales, Magnoliaceae, Sapotaceae, etc.) His all-consuming interest was in *Schefflera* in particular and he recently published *The genus Schefflera in Sabah, Malaysian Borneo*. A profuse note taker at any meeting or lecture he attended; you could rely upon David to be one of the first in the audience to ask an insightful question. His conversations were often interesting (even with himself) and, if directed, would concentrate all available relevant information to the enquirer His informed opinions were well worth listening to. "David was our Wikipedia before the internet."

Robert (Bob) Johns (1944–2019): Bob was well known to all at the Royal Botanic Gardens, Kew for his enthusiasm for the flora, fauna and people of New Guinea, having dedicated his life to exploring, and understanding the plants, especially the ferns, of the world's largest tropical island. A native New Zealander, he went to Papua New Guinea (PNG) to work at the National Herbarium where he served from 1968 to 1971. From there he went to the Papua New Guinea Forestry College in Bulolo until 1979. From there he went to the University of Technology in Lae. He joined the Royal Botanic Gardens, Kew as a Senior Botanist specialising in taxonomy in 1990, retiring at 60. Bob was a great cook and he loved entertaining. Whilst in PNG he became an avid collector of local artefacts—all of which he brought with him to the UK.
https://apps.z.facebook.com/floramalesiana/photos/a.201155620275428/971539926570323/?type=3

Campbell Robert Smith (1951–2019): Campbell Smith was employed as an entomologist at London's Natural History Museum (NHM) for 35 years, during which time he worked on various catalogues, curated parts of the museum collections, and contributed to the output of several research groups. In 2009 he took early retirement to look after his widowed father. His sudden and unexpected death in March 2019 came as a shock to former museum staff and various entomologists around the world. Born at Stoke Newington, North London, his family moved to Leigh-on-Sea, an Essex town on the banks of the Thames estuary. There he developed not only his interest in music, but also an enduring fascination with the natural world, including birds and fossils. Secondary education was followed by a BSc in Zoology at University College London in 1973. A year later he was recruited to the Entomology Department of the NHM. Professionally, he was a skilled museum entomologist, insightful researcher, and excellent cataloguer.

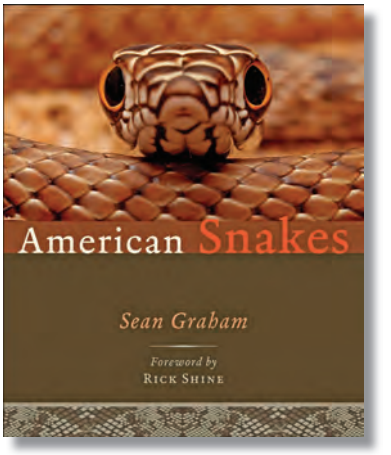
In the course of his academic work he became a member of several learned societies, notably the Willi Hennig Society, Royal Entomological Society, and Linnean Society of London. Probably influenced by Colin Patterson, Brian Gardiner and Chris Humphries, 'The Linn', which he joined in 1989, was his favourite. For more information see the tribute by Richard I. Vane-Wright published in *Nota Lepi.* 42(1) 2019: 121–128 | DOI 10.3897/nl.42.37808, from which the above information was taken.

Book Review

American Snakes

Sean P. Graham

312pp, Johns Hopkins University Press, 2018, hardback.
Col. and mono illustr. £22.00
ISBN 9781421423593



If you believe that snakes are mainly pythons, cobras or rattlers, do not look away now. Welcome to the world of coachwhips, copperheads and cottonmouths, of gartersnakes, gophersnakes and groundsnakes, of hog-nosed and hook-nosed snakes, of racers, ratsnakes and ribbonsnakes, of massasaugas, et al. The book was written to help identification, to understand the group's biology and ecology and to provide an accessible summary for the American public.

The succinct title indicates what the book is about. A comprehensive Introduction precedes 10 chapters covering: form and function; daily life; sex; food; predators; defence; dangerous snakes; alien introductions (Burmese pythons have made the Florida Everglades their own); and conservation. There are no Latin names in the text, but the Introduction uses international nomenclature for America's five snake families.

> "Scattered throughout the book are short biographies of herpetologists and snake enthusiasts whom the author considers interesting, smart and dedicated."

The author, an Assistant Professor in a small southwest Texas university, has a lifelong interest in snakes. Very few of the c. 500 references (listed by chapter at the end of the book but not cited in the text) are attributed to him. Searching for sources for the serious reader is therefore time consuming, but is probably little impediment to the main target reader not likely to be interested in the science. Scattered throughout the book are short biographies of herpetologists and snake enthusiasts whom the author considers interesting, smart and dedicated, and are said to have published many papers, but these also are rare in the reference section.

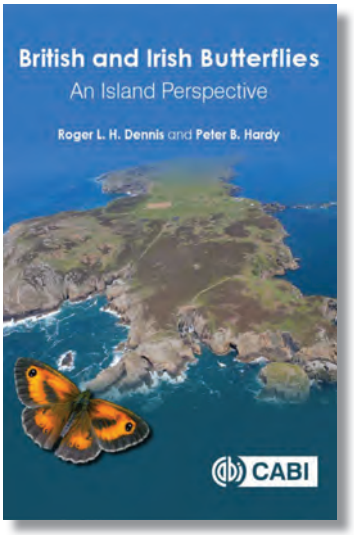
The text is in a casual style, with many anecdotes of the adventures of the author, his students and other eminent snake enthusiasts. The large format book has a clear font that covers only a little over half of a page. Clear coloured figures enhance the text; many superb photographs illustrate snakes and their habits (and habitats) but neither are these cited in the text. There is much here to appeal to the general reader, especially in view of its very low price.

Trevor Wilson FLS

British and Irish Butterflies: An Island Perspective

Roger L.H. Dennis & Peter B. Hardy

406pp, CAB International, 2018, Hardback.
Col. and mono illustr. £75.00
ISBN 9781786395061



It was originally intended that this erudite and immensely fascinating book would provide an update of an earlier 1996 work (Dennis, R. L. H. & Shreeve, T. G., *Butterflies on British and Irish Offshore Islands: Ecology and Biogeography*, Gem Publishing, UK). It quickly became apparent to the authors, however, that a wider perspective of the butterflies of the British and Irish Islands was required. The Isle of Man and the Channel Islands are treated as separate entities and it came as a great surprise to this reviewer that there are more than 900 islands in the area of interest with sizes in excess of ten hectares. Records for 393 of these islands are included in the book.

British and Irish Butterflies is aimed at various levels of expertise and interests and largely succeeds in these objectives. Three opening chapters cover basic topics in biogeography, past environments and aspects of butterfly biology. The next three chapters are more concerned with issues that affect species richness and incidence on the smaller islands. Chapters 7 and 8 look at faunal changes, especially turnover and evolution, on the islands. A final chapter examines key features resulting from the study, summarises basic issues of island faunas and considers studies for the future. The book is essentially of two sections. The first is the text, as outlined. The second comprises no less than 15 Appendices that present records and some details of more complex issues. This brief summary of content does not include a further 13 Supplementary Appendices that are available online. Two plates appear before the Appendices, the first comprising 17 separate photographs (not including front and back covers) of Island Landscapes and the second 83 photographs of all butterfly species likely to be encountered.

The Bibliography covers 46 pages. At about 25 references per page this gives a total of almost 1,200 references, many of which are very recent. There is also a list of relevant websites. The senior author of the book appears as sole or first author for more than 50 of the references dating from 1972 to 2018. The junior author is cited as first author in a further ten publications. A glossary of terms (including statistical terminology) proved very helpful to the reviewer and is sure to be for many readers. The index is comprehensive and includes both common and binomial names as well as listing many locations.

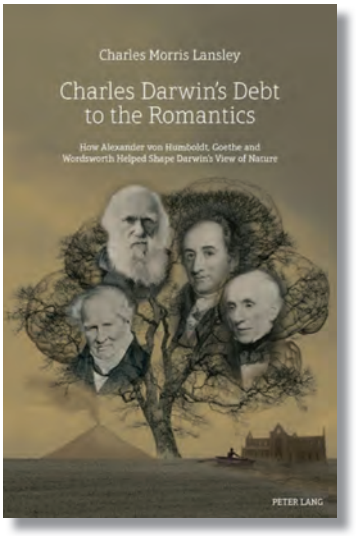
The text is very readable for such a technical book and is clearly presented. Delightful, comprehensive, colourful and readily understandable figures complement the text. This book is a major contribution to studies of the diurnal Lepidoptera of the greater British Isles. As for its predecessor, it is likely to become outdated rather quickly. The rather costly price may make it inaccessible to many amateur lepidopterists, but it should be on the library shelves of every sixth-form college, university and public depository.

Trevor Wilson FLS

Charles Darwin's Debt to the Romantics

Charles Morris Lansley

286pp, Oxford: Peter Lang, 2018, hardback.
£60.00/$90.95 (US)
ISBN 9781787071384



Charles Darwin is certainly the FLS about whom most has been written, so whenever a book appears with his name in the title one immediately considers its novelty. Sometimes overlooked figured or noted specimens of Darwin's come to light, but Lansley's book is not about those; rather his subtitle indicates 'How Alexander von Humboldt, Goethe and Wordsworth Helped Shape Darwin's View of Nature'.

Following details of Figures and Acknowledgments, Lansley's Introduction defines terms such as "Romanticism" and is a synopsis of the ensuing chapters. Chapter 1 deals with Humboldt's view of the unity of Nature; a "web of affinities" where godless laws bring about the living world. Poet William Wordsworth's influence on Darwin's notion of double consciousness is covered here too. Humboldt's impact on Darwin's "Romantic" imagination continues in chapter 2 with ideas of one common human progenitor and equality amongst extant races of people. Chapter 3 examines how Humboldt helped Darwin's grasp of natural selection, alongside the non-romantics Thomas Robert Malthus and Joseph Townsend. Johann Wolfgang von Goethe's "Genetic Method" is here too, regarding how it helped Darwin's concept of evolutionary changes through time. Titled "Darwin's Romantic Theory of Mind", chapter 4 considers humans' concept of nature as not purely empirical but including moral reflections. Chapter 5 deals with "Romantic Materialism" which, like aesthetic reflection, has developed over a very long time. Chapter 6 is a sociological appraisal of Darwin's own moral values

in relation to Victorian society to conceptualise Romantic concepts such as "Nature" and "Mind". Darwin's material experiences, e.g. the *Beagle* voyage and his barnacle works, are considered in chapter 7 as to how his notion of "Mind" changed from the 1830s to 1870s. Notwithstanding Darwin's denial of its influence, chapter 8 analyses how poetry by Erasmus Darwin affected his grandson's view of materialism. Chapter 9 concludes with more analysis of poetry; here it's by Ruth Padel (2010), a great-great-granddaughter of Charles. With references also to Samuel Taylor Coleridge and Percy Bysshe Shelley, romanticised quotes from Darwin here include "…from Death comes Life, from Matter comes Mind".

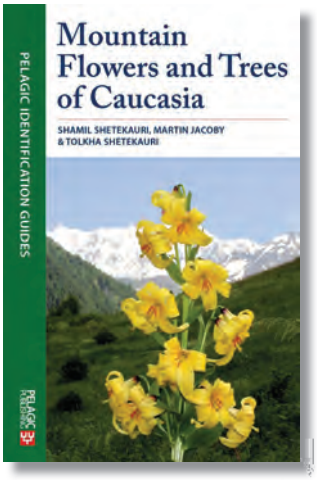
This book is based on Lansley's doctoral thesis; its structure is scholarly, with copious footnotes and a bibliography of 185 primary and secondary sources, ranging from Plato's day to 2015. He defines many "Romantic" terms, with the resulting text resembling German in its use of the upper case. He rightly indicates which translations or editions he has read, but I found references such as Goethe (2009) anachronistic; likewise, I was surprised to read that "Terms like 'scientist' and 'botanist' are twenty-first century terms". Well over a third of Darwin's life was pre-Victorian, but Lansley emphasises events from her reign when Darwin published most. Four monochrome and four colour figures adorn the text, but I'd like to have seen a chronology for 1770–1870, covering what Langley calls the "Romantic era". If you like biography in a cultural and philosophical context, this book is for you.

H.L. Pearson FLS

Mountain Flowers and Trees of Caucasia

Shamil Shetekauri, Martin Jacoby & Tolka Shetekauri

380pp, Pelagic Publishing, 2018, paperback. £30.00
ISBN 9781784271732 (also epub & PDF)



Most wildlife trips to Georgia are to watch the autumn bird migration that follows the eastern shore of the Black Sea or for spring birdwatching in the mountains. However, if you choose to look down to the ground you will see many familiar and unfamiliar plants. At the crossroads of several biomes, the country hosts over 4,000 species of vascular plants, many of which are endemic to the Caucasus or just to Georgia.

Mountain Flowers and Trees of Caucasia is an English language field guide that covers about 1,000 species of the angiosperms occurring in the mountains (above

1,000m). Virtually every species is illustrated with photographs, taken by the authors. Photographs have their limitations but, judging from those plants known by this reviewer, these are chosen and printed at a size that makes the flowers recognisable (even for the Apiaceae). The pictures are grouped by family. Although all these families occur in the British Isles, the authors have provided a simplified key both to get you to the correct group and, for some families, also to the genus.

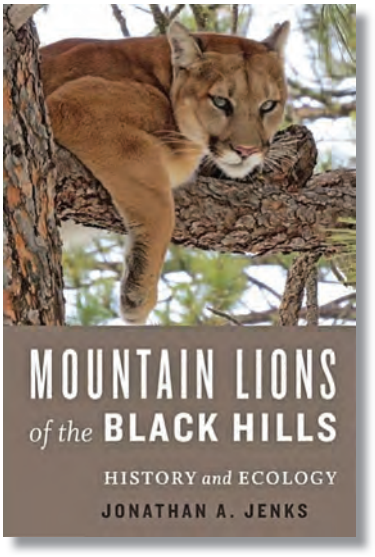
To keep text concise, they have used technical terms but there is a glossary (for example if you are vague about the meaning of "lomentaceous") and a full index of the species included. To be fair some of the specimens are a bit "gone over" in the photos and I have not been to Georgia to try it out, but I do not think you will find many plants that cannot be named. The country is a very desirable desirable botanical destination and this looks to be a good and useful guide to take with you.

Brian Livingstone FLS

Mountain Lions of the Black Hills: History and Ecology

Jonathan A. Jenks

160pp, Johns Hopkins University Press, 2018,
Hardback.
Mono illustr. £55.50
ISBN 9781421424422



This book examines the biology and ecology of a secretive large carnivore and its re-colonisation of a semi-isolated region in northern USA. Its main readership will be university students (the author lectures at South Dakota State University) and wildlife managers plus legislators and "recreationalists", including hunters.

The book is about mountain lions in the Black Hills (South Dakota State), something the author never lets us forget. Six of eight chapters have "mountain lions" in their title, and "mountain lions" and "Black Hills" appear several times on most pages. Mountain lions (*Puma concolor*), also known as puma and cougar, are widespread in the USA. Chapters cover: Characteristics, Population Dynamics, Disease Ecology, Nutritional ecology, Genetics and Perceptions (the latter via a questionnaire survey).

The period of study was 1991–2016, when the lion population increased manyfold through recolonisation and then declined partly from "harvesting" (population

control), although road kill was an important cause of mortality. As expected over a long period, protocols were modified and new ones introduced. The capture-mark (radio collars)-recapture technique was much used. Capture usually involved leg traps or "treeing" with hounds, underlining different welfare approaches between America and Britain/Europe.

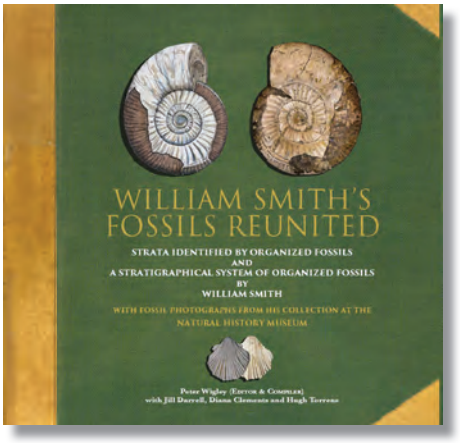
Prior to undertaking and supervising graduate students in this study, the author was a wild ruminant biologist. The text, in the first person singular (I) and plural (we), often becomes discursive, describing his and his wife's thoughts on long road journeys from university to study area. The small format book has a readable font but black and white photographs and satellite images (no colour illustrations) are poorly reproduced. References appear at the end of each chapter rather than in a single terminal list. The index is adequate. This is a useful contribution to the literature of a large American wild cat but may appeal more to South Dakotans than a wider audience. Perhaps the retail price reflects the publisher's expectations of the sales volume.

Trevor Wilson FLS

William Smith's Fossils Reunited

Peter Wigley (editor), with Jill Darrell, Diana Clements & Hugh Torrens

160pp. Wellington: Halsgrove Publishing, 2019, hardback. Colour illustr. £34.99
ISBN 9780857043375



A significant part of our scientific understanding of fossils is an appreciation of their discovery and interpretation in an historical context. Not only British palaeontology but also worldwide stratigraphy owe a great deal to the so-called 'Father of English Geology', William Smith (1769–1839). This richly-illustrated and scholarly book by Wigley et al. draws one's attention to the great advances (plus some mistakes) made by Smith, upon whose shoulders today's palaeontologists rest.

The Foreword by Sir David Attenborough FLS reminds us of Smith's stratigraphical map of 1815 showing England, Wales and part of Scotland. More successful as an engineer than as a manager of money, Smith sold most of his fossil collection in 1816 to the British Museum, now London's Natural History Museum (NHM). Also, Smith only published certain parts of his manuscripts for his *Strata Identified by Organized Fossils and A Stratigraphical System of Organized Fossils*.

Following an idea of a Mr D. Williams of Lostwithiel in 2015, Darrell and Clements researched Smith's illustrated specimens that remain at the NHM to present a bicentennial exhibition relating his original fossils to his pioneering map. Torrens encouraged Williams to digitise his rare copies of Smith's *Strata…* and *A Stratigraphical…* for republication here. Wigley has successfully combined the curatorial skills of Darrell and Clements with the decades-long biographical research of Torrens on William Smith to bring about this impressive volume. Eight maps showing 389 English and Welsh localities where Smith collected fossils are gloriously reproduced in this new book. Detailed notes and appendices accompany these maps to clarify geographical points and nomenclatural revisions of Smith's names for his fossils, plus their stratigraphical origins.

Much of this book is made up of colour photographs of NHM specimens, named, sized and carefully paired opposite the original engravings by James Sowerby, plus Smith's captions of names and stratigraphical origins for his fossils. These fossils range in age from the Lower Carboniferous Mountain Limestone of Derbyshire and Cumbria to the Plio-Pleistocene Crags of East Anglia. Amazingly, very few of these figured specimens remain unlocated. Most of the fossils are invertebrates, especially molluscs; many are from Bath, Norwich and Gloucestershire, reflecting areas where Smith worked on canals, coal mines, roads and drainage schemes, such as the New Cut beside what is now RSPB Minsmere in Suffolk.

The Afterword by Malcolm Brown PPGS, echoes some of Attenborough's prefacing remarks to put Smith's work into context. Smith was the first recipient of the Wollaston Medal of the Geological Society of London and that body awards an annual William Smith Medal today. Brown praises Wigley *et al*. for their synthesis of Smith's ideas on stratigraphy, for the cataloguing of Smith's fossils and for the splendid photographs presented here.

Over a quarter of the Selected References are to works by Torrens and I was surprised not to find amongst them the biography of Smith by Simon Winchester (2001). However, Wigley *et al*. refer readers to further bibliography at the UKOGL website www.Strata-Smith.com.

This new book is far more than an eye-catching adornment to a coffee table; the combination of historical maps, texts and engravings and their updating within the body of 21st-century palaeontology will extend Smith's fame yet further. Perhaps my only disappointment is that Smith included just one fossil plant amongst his chosen specimens, but that is my palaeobotanical bias, no fault of Wigley *et al.*'s. I recommend this book to Fellows who might already be devoted fossilists but also to those with little or no palaeontological experience. It must tempt some to go fossil hunting at some of the localities where Smith found his specimens some 200 years ago.

H.L. Pearson FLS

231st Anniversary Meeting of the Linnean Society

held at Burlington House, Piccadilly, London W1J 0BF

4.00 pm, Friday 24 May 2019

1. **The Vice-President,** Professor Paul Henderson, took the Chair and and warmly welcomed 85 Fellows to this first part of the Anniversary meeting (AGM). Guests (42) joined the meeting after the formal AGM.
2. **Apologies** had been received from 19 Fellows.
3. **Admission of Fellows**: The following were admitted as Fellows: Juliette JOWIT, Chris RAMSDEN, Jan SCHRIPSEMA, George WETTACH and Richard WILDASH.
4. The **Minutes of the Meeting held on 16 May 2019** were approved and signed.
5. **Third Reading of Certificates of Recommendation for HonFLS and FMLS:**

   a. **Fellow *honoris causa:* *Dr Vaughan Southgate***

   Dr Vaughan Southgate had a singularly productive term as President of the Linnean Society from 2009 to 2012, attracting a record number of new Fellows and building links with the Royal Society of Medicine, and internationally, with His Majesty the Emperor of Japan, the Ambassador of Nepal and colleagues in Sweden. Vaughan spent his professional life as a zoologist at the NHM, where he led the museum's research on biomedical parasitology.

   b. **Foreign Members:** ***Professor Ib Friis***

   Professor Ib Friis is Emeritus Professor of Botany at the Natural History Museum of Denmark, University of Copenhagen. He has made unrivalled contributions to understanding the natural history of the Horn of Africa over a 45-year career, writing over 300 publications documenting the flora and vegetation of the region, botanical nomenclature and the history of natural history exploration.

   c. **Foreign Members:** ***Professor Sir Peter Crane FRS***

   Professor Sir Peter Crane FRS is a botanist and current President of the Oak Spring Garden Foundation and Senior Research Scientist in the School of Forestry and Environmental Studies at Yale University in the US. Alongside his work in leading educational and natural history organizations like the Field Museum in Chicago and the Royal Botanic Gardens, Kew, he has had a long research career, focusing on linking studies of fossil and living plants in order better to understand plant evolution.

6. **Appointment of Scrutineers**. David Cutler, Gordon McGregor Reid and Mary Morris.
7. **Ballots**. Fellows voted for Members of Council, Officers, including Treasurer, for Foreign Members and Fellow *honoris causa*, and ordinary Fellows.

8. Treasurer's Report

The Interim Treasurer, Dr Mark Watson, explained that he had been appointed by Council on 7 December 2018 as Interim Treasurer, following the resignation of Deborah Wright, who was thanked for her dedication.

Dr Watson referred to the 2018 Trustees' Annual Report and Accounts now presented to the Fellowship for acceptance before being submitted to the Charity Commission. The Annual Review 2018 contains a summary of the financial statements; both documents are available at **www.linnean.org**.

The Society's income increased slightly to £2.14M (2017 £2.12M). The membership of 2,872 Fellows (2017 2,770) provides our second largest source of income at £148K. Advancing scientific knowledge through publications continues to be our largest source of income, which rose to £1.72M in 2018 (2017 £1.7M), following the move of the Society's journals to Oxford University Press in 2017. The Society continues a hybrid model for Open Access (OA) publication, maintaining no or low page charges and no-cost or low-cost access to qualifying institutions in low-income countries. Income from tours, reprographics and the AdoptLINN programme came to £11.5K.

£11.5K was received in donations, including a generous, unrestricted bequest from the estate of Jan Pingree. External funding benefits include grants from John Lyon's Charity for the BioMedia Meltdown education project, and the Arts Council England for the PRISM grant enabling curation of J. E. Smith's carpological collection. The Society's Discovery Room was made possible by generous grants from the Wolfson and the Garfield Weston Foundations.

The Society saw a modest increase in expenditure of £1.45M (2017 £1.21M), almost all of this was spent supporting our charitable activities, and only £7K on managing investments to raise funds. Financial details for all projects are included in the Annual Report. One element of expenditure which is pertinent to the overall financial picture is the increasing cost of running the Society's premises, which came to £190k (£2017 182k), excluding rent. We have ring-fenced reserves funds to cover the significant increases in back rent, and are in negotiation over future rent.

The Trustees are pleased to report a surplus of £334K (2017 £1.16M). The reduction in surplus was due to increases in expenditure on charitable activities in education and our heritage collections, and also to an unrealised loss on investments during the year of £356K.

The Society's reserve funds are split between endowments (£676K), restricted funds (£2.4M), and unrestricted funds (£3.6M). Restricted funds included a valuation of Heritage Assets of £1.6M: these are collections which are held in trust and cannot be sold. Within our unrestricted funds, £1.4M is set aside as designated funds to cover future expenditure associated with the Society's buildings and financial liabilities, and £2.2M is held as a General Reserve to enable

continued operation for 6 months if income fails. The General Reserve is also used to fund projects internally, such as the BioMedia Meltdown project which the Trustees decided to fund for a 2-year period following the conclusion of back-to-back grants from John Lyon's Charity. The Trustees consider the balance between reserve funds reasonable given budgeted costs and uncertainty over continued occupation of New Burlington House.

Net assets at year-end were £6.5M, and the Trustees agree with the external auditors in judging the Society to be in a financially healthy situation. The financial accounts for the year ending 31 December 2018 were scrutinised by the Finance Committee, Officers and Audit Review Committee. Council approved the financial accounts on 21 March. The Interim Treasurer called upon Professor Mike Fay, one of the ordinary Fellows on the Audit Review Committee, to report to the Fellowship and propose a motion to accept the accounts for 2018.

9. Motion to Accept Accounts for 2018

Professor Mike Fay FLS read the following statement: *"In accordance with Bye-Law 12.6, the Annual Statement of Accounts for 2018, and the report of the professional auditors, were carefully examined by the Audit Review Committee of Fellows on 11 March 2019. On behalf of the Committee, of which I was a member, I am pleased to report to the Anniversary Meeting that we concluded that the Accounts give a true and fair view of the Society's finances as at 31 December 2018. I therefore move that they be accepted."* This was carried unanimously.

10. Appointment of Auditors for 2019 and Banking Arrangements

a. **The Interim Treasurer** moved that the firm of **Knox Cropper, of 65 Leadenhall Street, London, EC3A 2AD,** be appointed as **auditors** in accordance with Bye-Law 12.5, which was accepted unanimously.

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

11. Names of Vice-Presidents

Dr Olwen Grace, Dr Blanca Huertas, Professor Paul Henderson and **Dr Malcolm Scoble.**

12. Results of the Ballots

78 ballot papers were returned. The following were elected to Council: **Prof Beverley Glover, Mathew Frith, Professor Anjali Goswami, Professor Alistair Hetherington, Professor Max Telford** and **Dr Natasha de Vere.** The following Officers were elected: **President Dr Sandy Knapp, Treasurer Dr Mark Watson, Editorial Secretary Professor Mark Chase FRS, Collections Secretary Dr John David, Scientific Secretaries Professor Simon Hiscock** and **Dr Malcolm**

Scoble. Fellow *honoris causa* Dr Vaughan Southgate; FMLS Professor Sir Peter Crane and **Professor Ib Friis.** A further 42 FLS were also elected.

13. Any Other Valid Business. None.

14. Overview of Society Achievements 2019

The Executive Secretary referred to the recently published *Annual Review 2018*, and highlighted how the unstinting commitment and innovative approaches of the staff team, supported by the dedicated editors, volunteers, curators, Trustees and Fellows, ensure that the Society fulfils its charitable objectives. The Society's public benefit was recently estimated at £8.2M annually, over five times annual expenditure. Thanks to the committed efforts of our editors and new publishing partner Oxford University Press, the Society's three academic research journals continue to underpin revenues, while various grants (from Wolfson and Garfield Weston Foundations, John Lyon's Charity, Arts Council England/PRISM) have facilitated specific projects, key amongst which were development of the Discovery Room, a special education space at Burlington House (BH), preservation of our Founder's carpological collection, and completion of the second phase of BioMedia Meltdown. The Collections team saw over 12K searches of the online library and archives catalogues, and added over a thousand images to the online collections. Linnaeus Link now has 17 international partners, with c. 150K views of this online union catalogue. AdoptLINN generated record revenues of £7.5K. Another key achievement was the conservation and display of Linnaeus' original herbarium cabinet. The Society's social media statistics show notable increases on Facebook, Twitter and Instagram, and a record number (45) events were held in 2018, with over 50K views of our lectures on YouTube. Diversity is high on the Society's agenda, and our *Women in Science* day meeting was very successful. Collaborative events with the other Courtyard Societies are important, with a record-breaking number of visitors at Open House, and our overall merchandising efforts yielded almost £2K, with £400 from sales of Jenny Grundy's cards. The Linnean Learning team (LL) has taken part in educational events in Cambridge, Birmingham, Leeds and Sheffield, as well as exhibiting at the *Green Man Festival* in Wales. Overall, the LL team engaged with nearly 6K students in 2018, and saw 19K views of LL videos and c. 12K downloads of educational resources. Ten Linnean Learning podcasts were published in 2018, and the BMM competition had a whopping 1,149 entries. The presentation finished with a celebration of the Fellowship. Unlike many membership organisations which are shrinking, the Linnean Society continues to grow, with an increasingly diverse demographic. We hugely value all that the Fellowship does for the Society, from acting as Trustees, assisting with our education & public engagement programmes, reviewing grant applications, and of course annual contributions, which adds up to nearly £150K, about 7% of our total income. So please encourage your colleagues and friends to become part of this evolving Society.

15. Citations and Presentations of Medals and Awards

a. The **2019 Linnean Medal in the field of Botany** was awarded to **Dr Vicki Funk**.

"Vicki Funk, a Senior Research Botanist and Interim Associate Director for Science at the National Museum of Natural History (NMNH) of the Smithsonian Institution, is undoubtedly the most accomplished synantherologist working today. Her work on the daisy family has increased understanding of species diversity as well as the evolutionary relationships in this complex and ecologically important family. She edited *Systematics, Evolution and Biogeography of the Compositae* which remains *the* volume for understanding this family. Author of more than 300 peer-reviewed publications, Vicki also led the Biological Diversity of the Guianas (BDG) Program at the Smithsonian. She was awarded the NMNH Science Achievement Award in 2014. Recently, Vicki has spearheaded the Global Gardens Genome Initiative—a programme designed to collect genome quality DNA across the tree of plant life from botanic gardens worldwide to create a resource for the future study of the genomics of plant diversity. In addition to her highly impactful career as a scientist, Vicki has served on numerous committees and boards and as President of several Learned Societies internationally. Vicki has also mentored many postdoctoral fellows and graduate students, while her support for the collections at her own and other institutions is unfailing."

b. The **2019 Linnean Medal in the field of Zoology** was awarded to **Professor Samuel Turvey**.

"Sam Turvey has made major contributions in two distinct areas of natural history. Firstly, the diversity, evolution and ecology of Late Quaternary mammal faunas, and the dynamics of extinctions during the Late Pleistocene and Holocene. Secondly, integrating extinction studies past and present to achieve a greater understanding of human pressures on biodiversity through time. Sam is involved with practical project development and management for poorly-known threatened species such as saola, Asian river dolphins, agouta, hutia and Chinese giant salamander, correlating success and failure in mammal species' recovery programmes to refine conservation strategy, and co-ordinates major multi-stakeholder conservation planning workshops. A long-term conservation programme for the Hainan gibbon, the world's rarest mammal, was developed through fund-raising, employment and management of project

Medal and Award Winners: (L to R) John Burton, Dr Leanne Melbourne, Dr Sarah Hill, Deborah Lambkin, Dr Steve Portugal, Prof. Samuel Turvey and Goronwy Wynne

staff in China. An academic editor for *PLoS One*, a member of grant review/judging panels for the Royal Society, an adviser to WWF, and a member of the Institute of Zoology's Athena SWAN committee, these wider conservation management and outreach activities complement Sam Turvey's research programme into mammal extinction dynamics."

c. The **2019 Darwin-Wallace Medal** was awarded to **Professors Svante Pääbo & David Reich**.

"Dr Svante Pääbo and Dr David Reich have conducted ground-breaking research in ancient human population genetics, and have provided invaluable insight into the fundamental forces that have shaped our species. Together, they have given us the true story of our origins: revolutionising our ability to extract and analyse DNA from the fossils of human ancestors at unprecedented scale and speed has resulted in important developments in archaeology and the life sciences. As leading pioneers in the study of evolutionary genetics they have developed powerful techniques for experimental and computational analysis of ancient DNA, and have discovered that hominid population history involves extensive mixing and interbreeding, and elucidated migration of specific human populations throughout the world spanning numerous time periods and species. Many of these points were previously topics of heated

debate—that they are now resolved is a testament to the power of genomic archaeology and the remarkable contributions by Pääbo and Reich."

d. The **2019 Bicentenary Medal** was awarded to **Dr Steve Portugal**.

"Dr Portugal is an internationally recognised, integrative biologist, whose research interests encompass comparative biomechanics, behavioural ecology and physiology, focusing on avian form and function. Taking inspiration from natural history, and using the latest tools such as pioneering biologging technology, Dr Portugal has been instrumental in providing new insights into avian brood parasitism, bird of prey vision, kicking mechanics of secretary birds, and the physiology behind migration and moult in water-birds. Key studies have demonstrated that birds don't train for migrations, and revealed the aerodynamic mechanisms that birds use when flying in formation to save energy: taking turns to lead the V-formation, in a direct reciprocal form of cooperation, changing our understanding of group dynamics, as well as inspiring advances in robotics and artificial intelligence. Dr Portugal has also made a significant contribution to the public's understanding of animal biology."

e. The **2019 Irene Manton Prize** was awarded to **Dr Leanne Melbourne**.

"Dr Leanne Melbourne's thesis 'The effect of environmental change on the structure, composition and subsequently the structural integrity of un-attached corallines', focuses on the ability of free-living, calcified red algae (rhodoliths) to maintain complex habitats in response to climate change and ocean acidification. Rhodoliths are habitat-formers, creating maerl beds that are recognised under EU legislation for their high biodiversity and as an important habitat for shellfish. Her highly interdisciplinary thesis, combined biodiversity discovery, ecology, mineralogy and engineering in a new way, revealing the complexity of coralline algae and the possible impacts of climate change. 3D models were created and used to demonstrate how the calcified skeleton of rhodoliths will behave under the intense pressures of future stormier conditions. Leanne also discovered and described a species of rhodolith new to Britain, and continues to be involved in a biodiversity discovery project at the Natural History Museum. Overall, the judges were very impressed with the eloquence with which arguments were made and tested, the intrinsic interest and relevance

of the questions being addressed, and the fact that this was supported by evidence of three published papers and a string of communication efforts."

f. The President presented the **2019 John C. Marsden Medal to Dr Sarah Hill.**

"Dr Sarah Hill's thesis 'Genomic approaches to virus discovery and molecular epidemiology' represents an important novel approach to analyse viral diversity in wild animal populations, and provides useful new insights into the diversity and evolution of viruses in populations of wild badgers and swans. This authoritative work includes the identification of viromes and new viral species and a detailed investigation into the effect of wild swan immunity, population density and age profiles on the acquisition and spread of highly pathogenic avian influenza. The work exclusively utilises high-throughput sequencing techniques combined with sophisticated bioinformatics applications and algorithms and data mining from available repositories on population dynamics of avian host species. Her thesis shows a clear style of writing, with the information explicitly organised. The published outputs are exceptional, with four first author papers in high quality peer-reviewed journals and, as noted in the Head of Department's report, the data contributed to five more papers, four in *Science* or *Nature*."

g. The **2019 H. H. Bloomer Award** was awarded to **Goronwy Wynne**.

"Goronwy Wynne has been dedicated to botany for the whole of his life, even extending his house to accommodate his many herbarium cabinets! He was a Recorder for the Welsh county of Flintshire for the Botanical Society of Britain & Ireland for 40 years, publishing the *Flora of Flintshire* in 1993, as well as many other formal and informal publications, and is a frequent broadcaster on radio and television. His *magnum opus*, however, is the 575-page volume entitled *Blodau Cymru*. This massive work is the culmination of over 20 years' focused activity following Goronwy's retirement from lecturing in botany in 1990 and is testament to his love and passion for his native country and its plants. Although written in Welsh, the plant names are given also in Latin and English. This flora is of immense importance to Wales, being awarded 'Book of the Year for Creative Non-fiction' for 2018, with the judges proclaiming that every school and library in Wales should have a copy."

h. The **2019 John Spedan Lewis Medal** was awarded to **Dr John Burton**.

"John Burton has devoted his entire working life to conservation, having founded the World Land Trust (WLT) in 1989, providing a far-sighted and highly innovative solution to an evident problem of deforestation. He offered supporters the chance to 'Buy an Acre' in Belize for £25. Having raised the funds, the land purchased is turned over to a local conservation partner NGO, which is then provided with management support by WLT. John developed WLT from very small beginnings into a substantial and solid organisation—purchasing more than 700,000 acres, and leveraging this to bring a further 500,000 acres under conservation management, in many tropical and sub-tropical countries, the United Kingdom and Armenia, often in areas that have been passed over by other organisations. The model has necessarily diversified into novel ways to bring land under conservation protection in perpetuity through, for example, private reserves, payment of ecosystem services, often around ensuring water supplies, reforestation and carbon off-setting. Although having only a small number of staff, WLT now has some 25 partner NGO's, forming a mutually supporting network around the world."

i. The **2019 Jill Smythies Award** was awarded to **Deborah Lambkin**.

"Deborah Lambkin developed her interest in botanical art after she wrote a thesis on Visual Communication at the National College of Art and Design, Dublin in 1990. Deborah is now an established botanical artist, having been the 'official' Botanical Artist to the RHS Orchid Committee since 2005, contributing more than 400 fine paintings in that role. She provided the artwork for about 50 species accounts in *Curtis's Botanical Magazine*, including the recently published issue on the Australian clade of *Nicotiana*, widely admired for the fine attention to detail and, in particular, the stunningly accurate representation of the leaf texture, which was highlighted by the panel of judges. Deborah has exhibited at the National Botanic Gardens and several times at the Royal Horticultural Society where in 1999 she was awarded a Gold Medal for her work. She has painted a series of endangered Irish wildflowers used as posters for schools. Deborah is a member of the Watercolour Society of Ireland and the RHS Picture Advisory Panel."

j. The **David Attenborough Fieldwork Award** was awarded to **Marko Lukic.**

"The Attenborough Award for the best fieldwork project from the Systematics Research Fund recipients 2018, has been awarded to Marko Lukic, a self-funded PhD student from the Croatian Biospeleological Society and Department of Biology, University of Ljubljana, Slovenia, for his project on the systematics and biogeography of the troglobitic genus *Verhoeffiella*, a springtail. Troglobites are small animals, so well-adapted to life in a cave that they would be unable to survive in the surface environment. Although the first known discovery of a troglobite occurred in Slovenia in the 1600s, Marko's was the first detailed morphological and molecular study on cave springtails in the Western Balkans, serving to elucidate their unresolved taxonomy. Marko found two species, *V. longicornis* and *V. verdemontana*, in the same cave in Boznia and Herzegovina with significantly different troglomorphic traits, raising questions about the evolution and adaptive value of such traits in a subterranean environment. This work was published in *Invertebrate Systematics* in October 2018."

16. The Presidential Address: *Fieldwork in Fancy Dress: A natural history of women in the field*

The Chairman introduced the lecture to be given by the President, Dr Sandy Knapp. The lecture had been pre-recorded because Sandy was undergoing surgery that day. Dr Knapp considered the challenges faced by women in the field in the past as well as the present day. **View the lecture: www.linnean.org/AM2019**

Prof Henderson extended a warm thank you to Dr Knapp, and also to the Society's Digital Content Producer, Ross Ziegelmeier, who had produced the video.

The next **Anniversary Meeting** will be on **Friday 22 May 2020**.

Fellows Elected April–Sept 2019

Dr Arkhat Abzhanov
Mr Daniel Adebayo
Dr Faith Akinnibosun
Ms Sonia Ali
Mr Henry Amujiri
Dr Mark Anderson
Dr Andrew Anthony
Ms Janna Aparece
Mrs Suha Aranki
Ms Claire Banks
Dr Emma Bastow
Dr Stewart Ross Campbell
Mr Bruce Clements
Mr Sean Cole
Mr Kevin Coutinho
Prof. Pearce Paul Creasman
Mr Kevin Creed
Mr Richard Crowell
Ms Emma Dale
Mr Antti de Ruano-Keskisaari
Dr Victoria Dickenson
Dr John Dolan
Mrs Susie Joy Evans
Mr Simon Fleming
Dr Nicola Fletcher
Mr Jonathan Franklin
Mr Micah Freedman
Dr Amelia Grass
Miss Carla Greco
Dr Michael Gunton
Mr Benjamin Harris
Prof. Les Hatton
Dr Hishmi Jamil Husain
Mr Ahmad Shah Idil
Prof. MacDonald Idu
Dr Mariko Ikeda
Ms Rebecca Jeffree
Prof. Chris Jiggins
Dr John Jones
Mr Simon Jones
Dr Loganathan Karthik
Dr Jim Labisko
Mr Julian Lai
Mr Clive Lundquist
Mr Jack Lunz
Dr Panagiota Malakasi
Dr Charles Marshall
Ms Diana Melville
Ms Geeta Menon
Dr Nicholas Millichamp
Ms Dhobasheni Newman
Mr Patrick Oakley
Mr Francois Paillier
Dr Sandip Patil
Mr Tom Pennance
Ms Bridget Pinchbeck
Dr Robyn Powell
Mrs Ranee Prakash
Miss Hannah Pressman
Mr Herman Reichenbach
Mr Samuel Roots
Mr Mark Raymond Rose
Prof. Johnny Rotimi
Mr Graham Rowe
Mr Owen Ryles
Prof. Jan Schripsema
Dr Dennis Taylor
Dr Beth Tobin
Ms Katrina van Grouw
Mr Michael Waller
Dr Susan Watson
Dr William West
Ms Gill Weyman
Mr David Whitaker
Dr Timothy Whitfeld
Mr Bernard Williams
Ms Lauren Williams
Dr Andrea Wolfe
Prof. Clive Wynne
Dr Alberto Zilli

Associates

Mr Arturo Crespo Moctezuma
Mr Nat Dyer
Mr Andrew David

Mr James Fagerburg
Mr Trefor Llewellyn-Pace
Mr Marcelo Monge
Mr Eric Motley
Capt. Scott Pallett
Ms Alison Shea
Mr Alastair Wanklyn
Ms Stephanie Wong

Students

Miss Dunya Baradari
Ms Joanne Blinkhorn
Mr Andrew Brinkworth
Mr Louis Chambers
Mr Myles Cummins
Mr Michael D'Antonio
Ms Rudy Diaz
Mr Harry Dodd
Ms Leah Fitzpatrick
Mr Miles Gibson
Ms Harriet Jones
Mr David Juszkiewicz
Ms Claire Mc Dermott
Ms Louisse Paola Mirabueno
Mr Matthew Moreira
Mr Tuhar Mukherjee
Mr Colman O'Cathail
Ms Gill Owen
Mr Antonio Pires
Mr Theodore Reoch
Mr Cristian Riccio
Mr Michael Roffe
Mr Aniket Sengupta
Ms Sayali Sheth
Mr Mathew Sloan
Mr Andrii Tarieiev
Ms Harriet Wills
Mr John Wojahn

Deaths Reported to Council

Prof. David Batten
Prof. John Cairns Jr FMLS
Prof. Harold Clifford
Prof. Jack Cohen
Mrs Marilyn Francis
Sir Peter C. Hutchison
Dr Robert Presley
Mr Campbell Smith
Mr Ronald Ward-Howlett
Dr Gerald Wickens
Dr Hazel Wilkinson

Send a part of our collections to friends and family this Christmas with a Linnean Society Christmas card.

For the first time, four bright, clean designs are available to buy individually or in packs.

Visit **www.linnean.org/christmascards**
or email **info@linnean.org** to order yours!

The Linnean Society of London : Programme of Events

November 2019–January 2020

6 Nov
12.30–13.00

The Wonderful Biology of Bryophytes

Prof Jeff Duckett FLS, *Natural History Museum, London*
LECTURE FOLLOWED BY FIELD TRIP

7 Nov *
09.30–17.30

A "Central & Controlling Incident": Celebrating *The Malay Archipelago* & the Intellectual Legacy of Alfred Russel Wallace

Co-sponsored by The Charles Darwin Trust
Speakers include: Dr Andrew Berry FLS, Dr David Collard, Prof James T. Costa FLS, Ms Eleanor Drinkwater, Prof Martin Fichman & Clay Bolt

14 Nov
18.00–19.00

Sir Julian Huxley Lecture 2019: Sixty Years in Asian Rainforests—How Systematics could support their Anthropocene Future

Prof Peter Ashton FLS, *Harvard University*

20 Nov
18.00–19.00

Darwin Lecture 2019: The Genetics of Schizophrenia—Darwin, Linnaeus & Precision Psychiatry

Prof Mike Owen, *MRC & Cardiff University*
TAKING PLACE AT THE ROYAL SOCIETY OF MEDICINE

21 Nov A
18.00–19.00

Francis Hamilton's Gangetic Fishes

Dr Ralf Britz, *Natural History Museum, London*

28 Nov
18.00–19.00

Murder Most Florid: Botany & the Crime Scene + BOOK LAUNCH

Dr Mark A. Spencer FLS

2 Dec A
18.00–19.00

Founder's Day 2019: Linnaeus in Lapland—Parasites, Reindeer & People

Prof Staffan Müller-Wille FLS, *University of Exeter*

11 Dec
12.30–13.00

Butterflies & Biodiversity: The Challenges & Opportunities

Dr Blanca Huertas FLS, *Natural History Museum, London*

12 Dec A
18.00–19.00

Christmas Lecture 2019: Music & Birds—A Violinist's View

Paul Barritt, *Hallé Orchestra*

16 Jan A
18.00–19.00

Species Response to Climate Change

Prof Jane Hill, *University of York*

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

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

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