

The Linnean

Communicating nature since 1788

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Alfred Russel Wallace
Where is his famous Ternate letter to Darwin?

The Power of
WIKIDATA

Snow Leopard Landscapes

A LOOK AT
WOMEN AS
LEADERS IN
CONSERVATION

About us

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

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



Cover image: Justine Shanti Alexander; This page: Pkabay/Holigi



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Dear Fellows,

As we move towards the end of 2022, we at the Society have been reflecting on the past year, and what 2023 will hold. We're looking forward to our celebrations for Alfred Russel Wallace's bicentenary, including talks, displays and a tree-planting ceremony. To kick it off in this issue, we have an enlightening article about Wallace's famous letter to Charles Darwin, sent from the Indonesian island of Ternate.



The Snow Leopard Trust are recognising the roles that can be played by women in local conservation programmes in Mongolia, India, Kyrgyzstan and Pakistan, which you can read more about in 'Snow Leopard Landscapes'. Additionally, Wikimedian Siobhan Leachman writes about the work continuing globally online to improve the coverage of, and credit given to, contributors from marginalised groups.

And don't forget to sign up for our 2023 events, which will cover subjects from lizard evolution and wildlife crime to the botany of the island of St Helena.

Thank you for your continued support of the Society, and all the best for the holiday season.

Leonie

Leonie Berwick

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

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

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Publish

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

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What's on



LIZARD EVOLUTION IN REAL TIME: FIELD EXPERIMENTS ON THE EVOLUTIONARY PROCESS

Speaker: Jonathan Losos

19 January | 18.00 GMT

Biologists used to think that evolution proceeded at a glacial pace, so slow that change could only be detected over the span of eons, but we now know evolution can occur rapidly enough to be detected over short periods. In this talk, Jonathan Losos will outline the progress of a 30-year experimental evolution research programme studying lizard adaptation to changing conditions in the Bahamas. **(ONLINE ONLY.)**



SOME LIKE IT HOT? USING THERMAL TOLERANCE TO EXPLAIN INSECT BIODIVERSITY

Speaker: Alisha Shah

25 January | 12.30 GMT

In 1967, ecologist Dan Janzen proposed the Climate Variability Hypothesis; that the stable climatic regime of tropical mountains would better support biodiversity than the variable climate of temperate mountains.

Alisha Shah has spent several years testing Janzen's hypothesis using aquatic insects from temperate mountains (Rockies, USA), and tropical mountains (Andes, Ecuador). What has she learned about the biodiversity of aquatic insects, and what do her results mean for aquatic insect vulnerability in a time of rapid climate change? **(ONLINE ONLY.)**



IS WILDLIFE CRIME A SECURITY THREAT?

Speaker: Rosaleen Duffy

26 January | 18.00 GMT (Nature Reader event)

Responses to poaching and trafficking have focused on enhanced law enforcement, militarisation, surveillance and intelligence gathering. There is a renewed sense of urgency to save iconic species from extinction, magnified by COVID-19 because wildlife markets were identified as a possible source of the pandemic. As a result millions of dollars have poured in from donors, governments, philanthropists and corporations to support conservation.

Rosaleen Duffy will focus on her book *Security and Conservation: The Politics of the Illegal Wildlife Trade*, understanding how conservation and security are now shaping each other in complex ways. **(ONLINE ONLY.)**

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



STEP BY STEP: CELEBRATING 150 YEARS OF THE LINNEAN SOCIETY AT NEW BURLINGTON HOUSE

Speakers: Isabelle Charmantier, Andrea Deneau, Leonie Berwick

2 February | 18.00 GMT (Members-Only event)

2023 marks the Linnean Society's 150th anniversary in its current home in New Burlington House. Join us to celebrate at this Members-Only event, where Isabelle Charmantier will take a look back at the history of the Society, and we will officially 'unveil' the stunning images from our collections that will now adorn our staircase. Members will have time to explore the images before retiring to our beautiful library. **(ONSITE ONLY.)**



SUGAR DADDIES AND SICKLE CELL PATIENTS: UNPACKING THE EVOLUTION OF HOMOSEXUALITY

Speakers: Pieter Adriaens

9 February | 18.00 GMT

Many consider human homosexuality to be an evolutionary puzzle. If there are such things as gay genes, how can they spread through a population if homosexuals do not reproduce? In this talk, Pieter Adriaens will debunk a number of solutions for this puzzle—solutions that include sugar uncles and sickle cell patients—by unveiling their erroneous assumptions.

(THIS EVENT WILL BE ONSITE AT BURLINGTON HOUSE AND LIVE STREAMED; PLEASE SELECT THE CORRECT TICKET WHEN BOOKING.)

PARASITES IN BIODIVERSITY CONSERVATION: FRIEND OR FOE?

Speaker: Joshua Brian

15 February | 12.30 GMT

Parasites and pathogens are often overlooked, and when it comes to conservation, 'parasite blindness' poses multiple risks. On one hand, parasites reduce the success of organisms, and often lead to host death and population declines. On the other, they play crucial roles in ecosystem structure and function and support the coexistence of different species. In this talk, Joshua Brian will explore these various perspectives, and discuss how we can reconcile these opposing points of view. **(ONLINE ONLY.)**



ST HELENA: NAPOLEON'S GARDEN ISLAND

Speaker: Donal McCracken

22 February | 18.00 GMT (Nature Reader event)

The remote island of St Helena has an extraordinary botanical history. Located on the homeward voyage of the great East India Company's fleets from Asia, St Helena became a refreshment station and the resting site for exotic plants from Asia and Africa en route to Europe. Donal McCracken will look at the island's many gardens, those who cared for them, and the famous explorer scientists who visited, such as Banks, Cook, Roxburgh and Darwin. **(ONLINE ONLY.)**

Images: The Linnean Society of London; Pieter Adriaens; Joshua Brian; Donal McCracken

News

DESMOND DONOVAN GIFT TO SOCIETY

We are very grateful to be able to share that the Society has received a generous gift of £10,000 from the family of Desmond Donovan FLS (1921–2019).

A palaeontologist and polymath, Desmond's studies and early career spanned the years of the Second World War; the outbreak of war would result in a place under W. F. Whittard, Professor of Geology at the University of Bristol.



In the post-war years, though working on Middle Jurassic rocks, Desmond became drawn to Lower Lias ammonites; his love for Somerset and the Blue Lias would draw him back to the area later in life. He lectured in geology at his alma mater in Bristol, which would lead to a role as Professor of Geology at Hull, and Head of Geology at University College London.

Desmond was elected as a Fellow of the Linnean Society on 24 May 1960, aptly at our Anniversary Meeting, and was admitted later that same year in November. We are incredibly proud to have been able to call Desmond a Fellow for nearly 60 years. His son Daniel told us that, 'Desmond valued the Linnean Society very highly and was very pleased to be able support your work.' He was a supporter of many societies and organisations, including Mendip Society, Bristol Naturalists Society and Bath Natural History Society. We are in great company.

If you would like to talk to us about leaving a legacy or gift, however small, to support our vision of 'a world where nature is understood, valued and protected', please visit www.linnean.org/legacy or contact Priya Nithianandan on priya@linnean.org.

The *Botanical Journal of the Linnean Society* hits 200 volumes!

We are thrilled to announce that the *Botanical Journal of the Linnean Society* has published its 200th volume! The Society has been publishing important papers about botany since 1856, having evolved from the Society's *Transactions*, and has become a vital source of botanical research ever since.



The 200th volume offers much to dive into, from invited reviews (hybridisation in the Neotropics and Asteraceae) to papers covering ferns, Brassicaceae, Iridaceae, Plantaginaceae and the Asteraceae of the Galápagos, linking (via Charles Darwin) right back to the very first issue in 1856!



Editor-in-Chief Professor Michael Fay has masterminded an incredible start to this momentous 200th volume, with four issues available online—and they are not to be missed. All four issues are online now; find volume 200, issue 1 here: <https://academic.oup.com/botlinnean/issue/200/1>

ALFRED RUSSEL WALLACE BICENTENARY APPEAL 2023

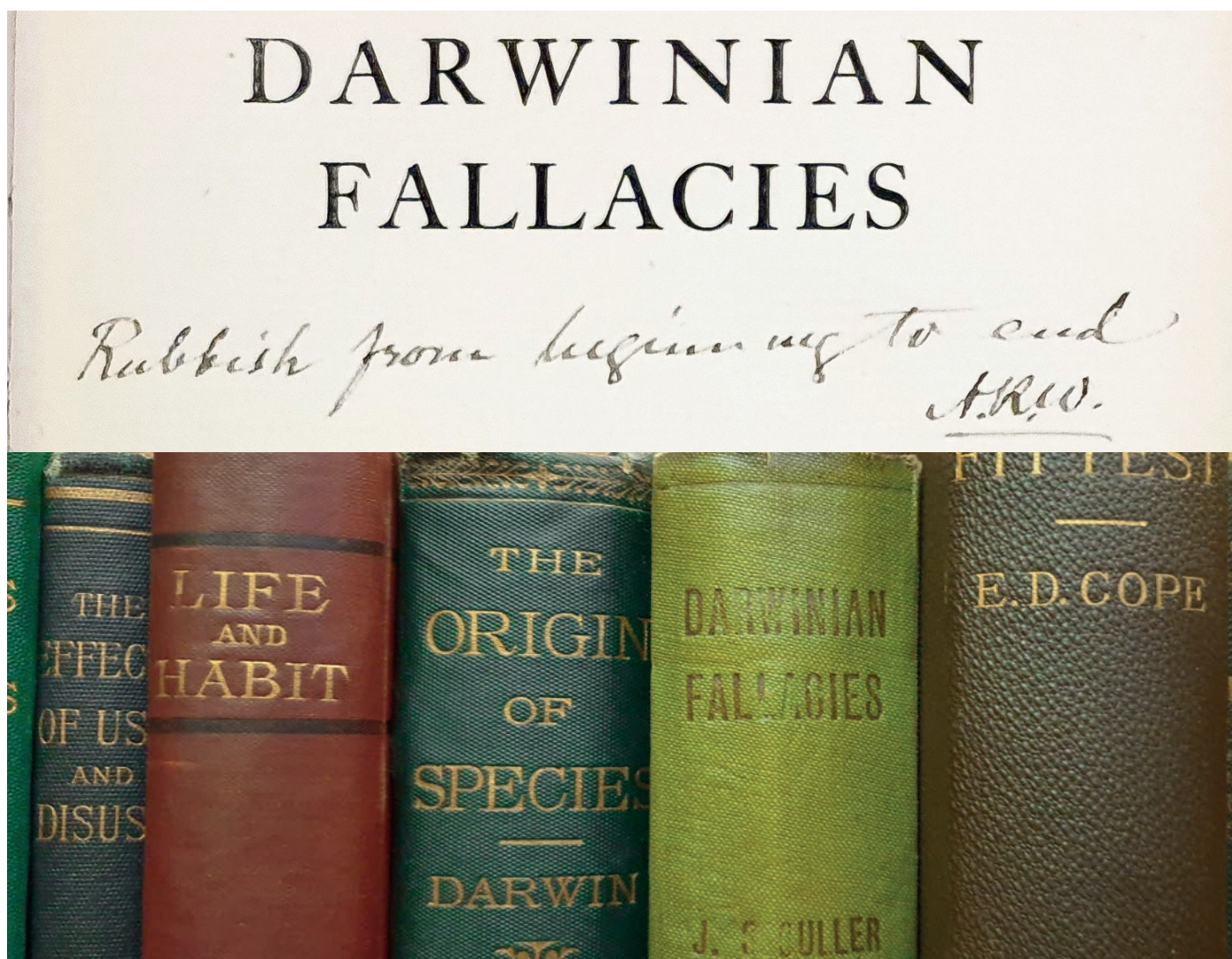
In 1915, the Linnean Society was privileged to receive over 300 books from the private library of Alfred Russel Wallace, the celebrated explorer, naturalist, and co-conceiver of the theory of evolution by means of natural selection.

As we celebrate the 200th anniversary of Wallace's birth in 2023, we are pleased to offer a selection of items from this collection—in need of conservation and care—up for 'adoption' as part of our long-running AdoptLINN scheme.

Wallace was a voracious reader, and a pragmatic user of books. Many of these items show evidence of enthusiastic use, including annotations and marks of ownership from the

man himself. Eye-catching examples include a copy of John Scouller's *Darwinian Fallacies* (1905), which the usually mild-mannered Wallace has branded 'rubbish from beginning to end' on the title page. Many of his annotated books connected to travel are up for adoption as well, like Henry O'Forbes' *A Naturalist's Wanderings in the Eastern Archipelago* (1885) which Wallace himself reviewed for *Nature* that same year. Could this copy be the one he used?

With this appeal, we hope to stabilise these works for future enjoyment and scholarship, while preserving the evocative traces of their illustrious former owner. For more information, please visit our website at www.linnean.org/AdoptLINN, or email the collections staff at library@linnean.org.



RICHARD PULTENEY CORRESPONDENCE: Fully catalogued and online



The Linnean Society is delighted to announce that the correspondence collection of the English physician and botanist, Richard Pulteney (1730-1801) has now been fully catalogued and detailed descriptions are available to view on our online archive catalogue [Ref: MS/238a-d].

Acquired by the Linnean Society in 1951, this significant collection comprises over 1,200 letters between Pulteney and more than 117 correspondents, most of them physicians, naturalists and collectors. It also includes the correspondence of his wife, Elizabeth Pulteney (née Galton).

The correspondence, which dates from 1733–1829, thus spanning almost a century, is a fascinating record of a provincial practitioner, with extensive discussion of medical matters including pioneering treatments, ‘quacks and quackery’ as well as conditions of individual patients. Despite being based in the small market town of Blandford in Dorset, Pulteney was in regular correspondence with some of the leading physicians of his day including Dr William Cuming, Sir William Watson and Dr Maxwell Garthshore.

Pulteney also exchanged numerous letters with distinguished botanists, including Rev John Lightfoot, Rev Thomas Martyn, Adam Afzelius, John Hope and many others, and he was instrumental in the promotion and acceptance of the, relatively new, Linnean classification system.

There are also fascinating exchanges with famed collectors of Pulteney’s day including Margaret Bentinck, the Duchess of Portland. The 44 letters between her and Pulteney indicate the extensive involvement of Pulteney, as well as other leading botanists, including Henry Seymer, Rev John Lightfoot and Daniel Solander, in the building of her renowned natural history collection which grew to be the biggest of its kind in Britain.

Welcome to Andrew Swan!

Andrew Swan joined the Linnean Society in November 2022 as our new Governance Manager to help implement the Society’s Governance Review launched in 2018. Andrew has spent over five years in operational and governance roles within Royal Charter organisations such as the Royal Institute of International Affairs (Chatham House) and the Law Society.

Prior to working in London, Andrew spent almost five years in Brussels growing the work of the Unrepresented Nations and Peoples Organization (UNPO), an international membership-based organisation established to advocate for and empower the voices of unrepresented and marginalised peoples.

At the Linnean Society, Andrew’s role will see him support important changes to the Society’s governance and the positive impact these will have on fulfilling its charitable mission and objectives. Moreover, as a lapsed historian and traveller, he is very much looking forward to exploring the Society’s unique and fascinating collections as he encounters them.

Please join us in welcoming Andrew to the team!



Images: The Linnean Society of London



Image: Shutterstock.com/Kelvin Haboski

SNOW LEOPARD *Landscapes*

ENGAGING WOMEN AS LEADERS IN CONSERVATION

by Justine Shanti Alexander, Ranjini Murali and Tserennadmid Nadia Mijiddorj

Found in 12 countries in the arid regions of Asia, from the Altai mountains of Mongolia to the High Himalaya of India, the snow leopard is a charismatic big cat. For millennia, this majestic animal has shared space with agro-pastoral and pastoral communities (Mishra *et al.* 2009), where people in these landscapes rely on livestock rearing and/or agriculture for their livelihood (Murali *et al.* 2020). Community-based conservation works on strengthening coexistence with snow leopards and building resilience against negative interactions such as livestock loss resulting from carnivore depredation (Young *et al.* 2021).

LEFT: Community leader milking her livestock in Bayan-Ölgii, Mongolia.

However, these community-based conservation efforts need to be gender responsive in order to be effective and equitable. Across snow leopard landscapes, although socio-economic, cultural, legal and political contexts vary enormously, women usually play important roles in their communities (Khadka & Verma 2012). In general, women hold specialised functions in crop production or pastoralism across Asia's mountains (Anand & Josse 2002). Women also have a stake in the management of natural assets, such as water resources (Murali *et al.* 2021); for example, in Spiti Valley, India, women play primary roles in managing the irrigation systems, putting them at the centre of snow-related ecosystem services that are under threat from climate change (Murali *et al.* 2017). In the main, however, women's access to, and control of, land and other natural resources are uneven, compared to men, and are constrained by legal, social and cultural barriers (Murali *et al.* 2021; Murali *et al.* 2022).

Gender-responsive conservation programmes

Recognising the vital role that can be played by women in conservation efforts, the Snow Leopard Trust and its partner organisations have initiated gender-responsive programmes. In the forementioned Spiti Valley, a programme was initiated in 2013 to strengthen the engagement of women in ongoing conservation activities, focusing on enhancing their skills and agency in



ABOVE: Multi-generational activity—women leading community yarn-spinning to boost funds.

conservation action. It provides training and ‘exposure trips’ to improve skills such as creating handicrafts, managing personal finances, and accounting. Women receive incentives to make group decisions and take action on local conservation issues. They record their actions in journals. Actions include environmental waste removal, raising conservation awareness, and preventing both the illegal hunting of wild animals and the illegal harvest of wild plants. Women are involved in managing the entire programme, including tracking the annual costs of raw materials, handicraft production and sales, and profits, serving to enhance community ownership and participation. Our recent evaluation also shows that participants in the programme had improved attitudes towards snow leopards, and the measures to protect them (Alexander *et al.* 2022).

Other programmes in Mongolia, Kyrgyzstan and Pakistan also focus on women, or try to engage them in wider ongoing conservation work such as livestock insurance, corral reinforcement and other livelihood interventions; their involvement in conservation action and decision-making varies based on the local context. By way of

example, throughout the snow leopard habitat in Mongolia, women’s groups ensure that no illegal poaching of snow leopards happens on their community lands. Women also make up 68% of community leaders (25 of 37 communities) protecting over 12,000 square kilometers of snow leopard habitat. Community programmes make a concentrated effort to guarantee that women make up at least one third of the livelihood enhancement programme participants. Our community records show that in Tost, South Gobi, Mongolia, women are active participants in community conservation planning, with 30% of the livestock insurance programme members being women. In addition, women have been assigned leadership positions for four out of the seven livestock insurance committees; concerted efforts are being made to enhance their representation at the decision-making level.

In the Ala Too Range in Kyrgyzstan, 40% of the members of a new climate-smart livelihood initiative are women. This initiative creates alternative livelihood opportunities for community members through the production and sale of honey. Profits from this sale are reinvested into funding local conservation action;

a decision-making committee oversees the running of the programme, including directing the conservation action. Thirty percent of the members of the committee are women, ensuring that they have good representation at the decision-making level.

What are the challenges?

A number of challenges may arise in engaging women in conservation action; prevailing social norms, legal rights and access, and women's roles can all exclude or discourage women from participation and decision-making (Agarwal 2010). For example, in the Tost Nature Reserve, women account for a small minority of ownership registrations of livestock and of predator-proof corrals. They are also less likely to be involved in management of the reserve in activities such as patrolling for illegal activities, wildlife surveys, or installing camera traps. Similarly, in Spiti Valley, they were found to be less likely to be involved in activities that involved travel outside their own villages. Women also reported that seasonal activities affected their availability to participate in conservation programmes.

Our experiences around the conservation of snow leopards illustrate the diversity of women's roles and rights with respect to the management

of natural resources. They underline the importance of context-specific approaches to engage women as equal partners and decision-makers in biodiversity conservation (Mishra *et al.* 2017). Our experiences and research provide leads into approaches to leverage women's specific experiences, knowledge, and skills for biodiversity conservation. Engaging women often requires sustained, long-term engagement with the wider community, and it requires an understanding of both barriers to participation, and flexible approaches to mobilising women's potential contributions to conservation efforts.

Harnessing critical knowledge

Wide economic, environmental and social changes are underway throughout the snow leopard range. For example, climate change is putting additional pressures on high mountain ecosystems and exacerbating risks to livelihoods and wellbeing (Mijiddorj *et al.* 2020; Mijiddorj *et al.* 2019). These changes are profoundly affecting how people view and value their environment, and how they use, control, and manage natural resources (Anand & Josse 2002; Jodha 2005). While opportunities for new roles emerge, care should be taken to adopt progressive approaches that respect and protect women's rights and address their specific concerns.



LEFT: Snow leopard captured on a camera trap in Kyrgyzstan.



ABOVE: Oyunsuren, a livestock insurance leader, feeds a baby goat in Tost, South Gobi, Mongolia.

Women have critical knowledge, values and experiences related to conservation that need to be better understood and harnessed. Community-based conservation is likely to lead to different impacts on men and women, with varying costs and benefits for each. A better understanding of gender dynamics can serve to strengthen gender-responsive conservation programmes. It can also help avoid exacerbating existing biases and inequalities and support the necessary changes to secure harmonious wildlife/human coexistence in multi-use landscapes.

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Snow Leopard Conservation Foundation, Ulaanbaatar 14250, Mongolia

Recent publications on the role of women in snow leopard habitats:

- Murali, R., Bijoor, A. & Mishra, C. (2021). Gender and the Commons: Water management in Trans-Himalayan Spiti Valley, India. *Ecology, Economy and Society-the INSEE Journal* 4(2354-2021-248): 113–122. <https://doi.org/10.37773/ees.v4i1.378>
- Alexander, J. S., Bijoor, A., Gurmet, K., Murali, R., Mishra, C. and Suryawanshi, K. R. (2022). Engaging women brings conservation benefits to snow leopard landscapes. *Environmental Conservation* 49(3): 180–186.

Find out more about the work of The Snow Leopard Trust: <https://snowleopard.org/>

To purchase products produced by these women and support these programmes, visit <https://shop.snowleopard.org/collections/handmade>

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The **'Letter from Ternate'**

What happened
to Wallace's
legendary
1858 letter
and Darwin's
reply to it?

by George Beccaloni FLS

Alfred Russel Wallace (1823–1913) discovered the principle of natural selection whilst suffering from a fever in the village of Dodinga on the Indonesian island of Halmahera (known then as Gilolo) in February 1858 (McKinney 1972: 131–38; Beccaloni 2019: 1–6). Once he had recovered sufficiently, he wrote a detailed essay explaining his hypothesis, and posted it together with a covering letter to Charles Darwin (1809–1882), from his base on the neighbouring island of Ternate, probably on 9 March 1858 when the monthly Dutch mail steamer visited (Smith 2014: 169). When Darwin received the packet (in June 1858) and read the essay he was horrified, as he realised that Wallace had independently conceived the same hypothesis he had devised some 20 years before. He implored his close friend, geologist Charles Lyell (1797–1875) for help. Lyell sprang into action and he, botanist Joseph Hooker (1817–1911) and Darwin then discussed the matter by letter (Hooker 1909: 15). Lyell and Hooker decided to publish Wallace’s essay, prefixed by some of Darwin’s writings on the subject (which hadn’t been written with publication in mind), to credit both men and indicate that Darwin had arrived at his theory of natural selection before Wallace. Their contributions were read at a meeting of the Linnean Society on 1 July 1858, and then published as a ‘joint paper’ on 20 August of that same year (Darwin & Wallace 1858).

Wallace’s manuscript essay and letter have not been seen since 1858, and are some of the most sought after and discussed ‘missing’ manuscripts in scientific history. All that is known of the letter’s contents is that Wallace asked Darwin to forward the essay to Lyell if he thought it was ‘...sufficiently novel and interesting’ (Lyell & Hooker 1858), and that Wallace made no mention of publishing it. The disappearance of the letter and especially its postmarks, has helped spawn a conspiracy theory which has been the subject of a number of books and research papers (see Davies 2012, for example). So what is known about the fate of the essay, the letter, and the envelope (if there was one)?¹ The envelope was never mentioned. It may have been thrown away after Darwin opened it; it may have been kept with the letter; or (more likely) there wasn’t one.¹ What we know about the essay is that Darwin sent it to Lyell with his ‘anguished’ letter of 18 June 1858 asking for it to be returned.² Lyell must have done this, as Darwin said to Hooker in a letter of 29 June 1858: ‘...I send Wallace & my abstract of abstract of letter to Asa Gray...’³ It was Hooker who shouldered the task of preparing Darwin and Wallace’s documents for presentation to the Linnean Society. There is no record of what then happened to the essay: it could have been sent to the printers for typesetting, and then lost; Hooker may have sent a transcript of it to the printers, then returned the original to Darwin, etc. What we do know is that the original was never returned to Wallace, and that Hooker did not keep it.

The fate of the missing Wallace letter

So what became of the letter? All we know is that, in a letter of 25 June 1858, Darwin wrote to Lyell, ‘Wallace says nothing about publication, & I enclose his letter.’⁴ He sent it to Lyell, who may have kept it, but most likely it was returned to Darwin. In a speech given by Hooker at the Linnean Society in 1908, commemorating the 50th anniversary of the reading of the Darwin-Wallace papers, he said:



LEFT: Colourised image of Alfred Russel Wallace in 1869.

BELOW: Lithograph of Ternate island in the 1880s, after a watercolor by J. C. Rappard. Published in vol. 2 of *Het Kamerlid Van Berkenstein in Nederlandsch-Indië* [1888].

RIGHT: First page of Wallace's reply to Hooker's letter of July 1858. Now owned by the Linnean Society.

Ternate, Moluccas, Oct. 6. 1858.

My dear Sir

I beg leave to acknowledge the receipt of your letter of July last, sent me by Mr. Darwin, & informing me of the steps you had taken with reference to a paper I had communicated to that gentleman. Allow me in the first place sincerely to thank yourself & Sir Charles Lyell for your kind offices on this occasion, & to assure you of the gratification afforded me both by the course you have pursued & the favourable opinions of my essay which you have so kindly expressed. I cannot but consider myself a favoured party in this matter, because it has hitherto been too much the practice in cases of this sort to impute all the merit to the

There are no letters from Lyell relating to it [i.e. the 'Ternate affair'], not even answers to Mr. Darwin's of the 18th, 25th, and 26th June; and Sir Leonard Lyell has at my request very kindly but vainly searched his Uncle's correspondence for any relating to this subject beyond the two above mentioned.⁵ There are none of my letters to either Lyell or Darwin, nor other evidence of their having existed beyond the latter's acknowledgment of the receipt of some of them; and, most surprising of all, Mr. Wallace's letter and its enclosure have disappeared. (Hooker 1909: 15–16).

Curiously, none of the letters sent by Lyell to Hooker are known, although Hooker preserved many or all of those which Darwin sent to him about the matter.

If Darwin was the last person in possession of Wallace's 'Ternate letter', what became of it? Interestingly, none of the letters which Wallace, Lyell and Hooker sent to Darwin in 1858 regarding the 'Ternate affair' are known to survive, except for an incomplete letter from Hooker to Darwin dated 31 July 1858.⁶ In a book of Darwin's letters published after his death, his son Francis offered an explanation:

It was his custom to file all letters received, and when his slender stock of files ('spits' as he called them[]) was exhausted, he would burn the letters of several years, in order that he might make use of the liberated 'spits.' This process, carried on for years, destroyed nearly all letters received before 1862. After that date he was persuaded to keep the more interesting letters, and these are preserved in an accessible form. (Darwin 1887: Vol. 1 p. v)

Despite this, some scholars became suspicious. For example, Arnold C. Brackman recounted the following about a 1979 interview he did with scholar Barbara Beddall (who knew Francis' explanation as she cited it in an earlier paper (Beddall 1968: 309–310)):

...she found it 'very odd' that the most critical correspondence in Darwin's files was missing. 'I think that Darwin was much more aware about Wallace

than he let on,' Beddall said. 'Someone cleaned up the file.' In her opinion, Francis Darwin destroyed the 'missing letters.' (Brackman 1980: 348)

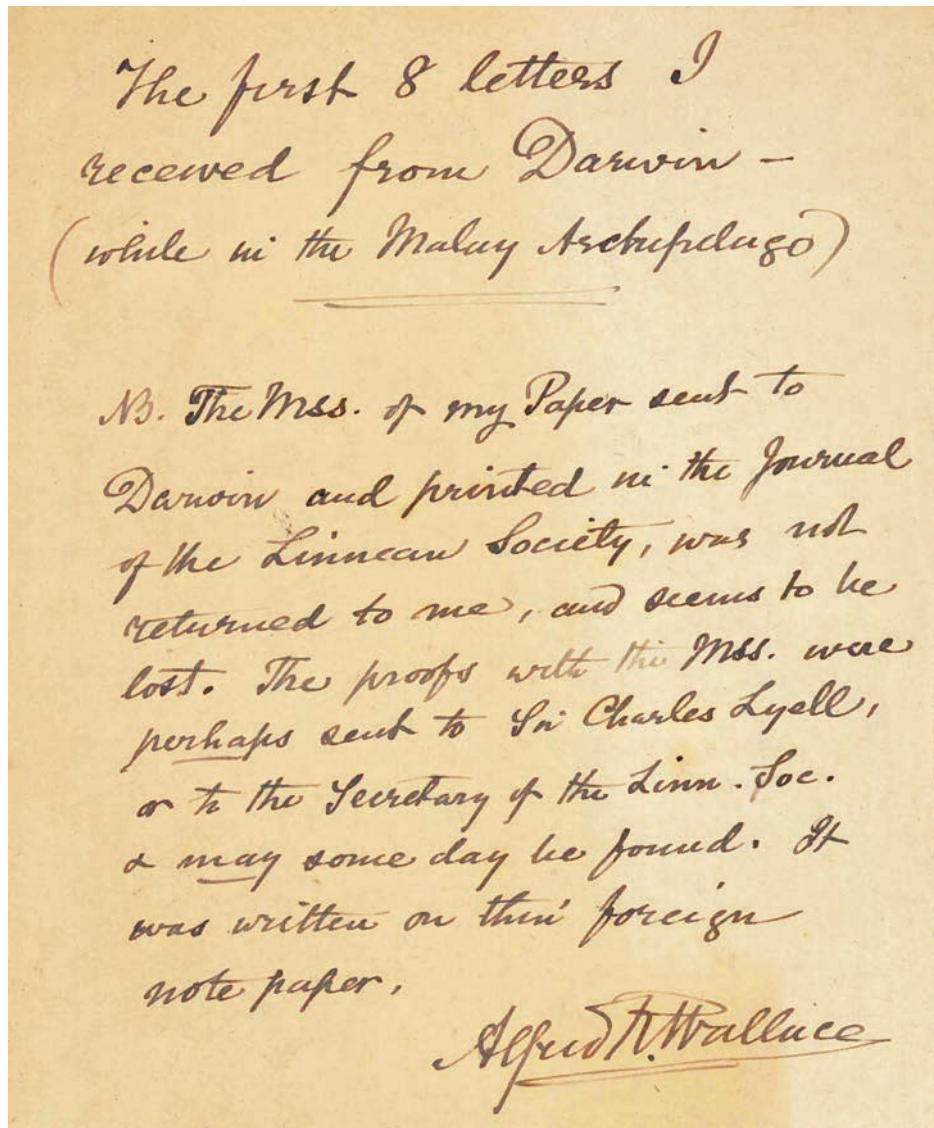
Recently, however, I found a letter from Darwin to Katharine Lyell (who published many of Lyell's letters after his death, see Lyell 1881) dated 26 December 1875,⁷ which seems to have been overlooked by scholars, and which corroborates Francis' statement:

I used formerly to burn all letters excepting a few, and such as I have kept from Lyell I now send. From the year 1862 I preserved all letters, and wish I had done so earlier. I am thus enabled to send all the letters from Lyell from 1862 to 1869 inclusive. Since '69 I have not received many, & they have not been classed by my son George (who is just going to start abroad) and therefore I cannot send any if I possess them. Should I hereafter find any, they shall be sent to you. Although I valued most highly all the letters I received from Lyell, I suspect that they are much too special to be of any interest to the public; but I am at present so busy that I have not had time to read over a single one...⁸

Hopefully this matter can now be put to rest. Unfortunately, however, the questions relating to the mailing date of Wallace's 'Ternate letter', and the date Darwin received it, will probably never be resolved.

Darwin's missing reply to Wallace's Ternate letter

Darwin replied to Wallace's 'Ternate letter' on 13 July 1858, almost two weeks after his and Wallace's articles had been read at the Linnean Society.⁹ He enclosed a letter from Hooker which explained what had happened at Linnean Society on 1 July (Wallace's reply to this, dated 6 October 1858, survives as Darwin forwarded it to Hooker, who preserved it).¹⁰ Curiously, although Wallace kept most, perhaps even all of the letters he received from Darwin when he was in the Malay Archipelago, the important letter from Darwin of 13 July (and the enclosed letter from Hooker) is one of the few that are missing.¹¹ John Langdon Brooks thought that the 'disappearance' of the



ABOVE: Wallace's inscription on the envelope used to enclose the eight Darwin letters which were sent to Cockerell (WCP3958).

the Darwin Correspondence Project. So, Darwin's letter of 13 July was never in the envelope, and as we will see, Wallace knew it was missing the year before. He clearly made a mistake when labelling the envelope and should have written something like 'The first 8 *surviving* letters I received from Darwin...'

The fate of the missing Darwin letter

Two letters I recently found resolve the mystery of the missing letter from Darwin, and also provide Wallace's earliest known statement that the manuscript of his Ternate paper was not returned to him (his later statement of 1909 was written on the envelope containing the letters he sent to Cockerell).

As mentioned, Hooker attempted to locate the surviving documents relating to the 'Ternate affair' in preparation for the Linnean Society's meeting on 1 July 1908, which commemorated the 50th anniversary of the reading of the Darwin-Wallace papers. Not only did he ask Lyell's nephew to search his late Uncle's papers, but he also wrote the following to Wallace in a letter dated 2 June 1908:

letter and its enclosure was suspicious and wrote:

Their absence is exceptional, because Wallace carefully saved all of the other Darwin letters. On an envelope containing them he had, at some unknown time, written, 'The first 8 letters I received from Darwin— (while in the Malay Archipelago)'[...] The first two were written in 1857 and the third extant one in January 1859. The missing letter of July 13, 1858, was actually the third. (Brooks 1984: 201)

Had Wallace kept Darwin's letter of 13 July 1858 in this envelope, only for it to have gone missing at a later time? The answer is no. I discovered that the envelope in question was sent with eight letters inside, enclosed in a letter to Sydney Carlyle Cockerell (1867–1962, of the Fitzwilliam Museum) on 22 March 1909 for an exhibition at Cambridge to celebrate the 100th anniversary of Darwin's birth.¹² The letters were transcribed and published (Darwin 1909) not long after Wallace sent them and consist of seven sent by Darwin to Wallace while he was in the Malay Archipelago,¹³ plus one from Darwin dated 7 March (no year),¹⁴ which Wallace must have thought he had received before his return to England on 31 March 1862. James Marchant (Wallace's biographer) dated this letter '1860' (Marchant 1916: 140–141), but it was later amended to '1867' by

Darwin-Wallace Celebration, 1908.

WEDNESDAY, JULY 1st 1908.

17

Row Seat

Darwin-Wallace Celebration, 1908.

THE PRESIDENT AND COUNCIL
.. of the ..

LINNEAN · SOCIETY · OF · LONDON

request the pleasure of the Company of

Mr. Wallace

At a SPECIAL MEETING, to be held
On WEDNESDAY, JULY 1st, 1908, at the
Institution of Civil Engineers, Great George Street,
Westminster, at 2.30 p.m.

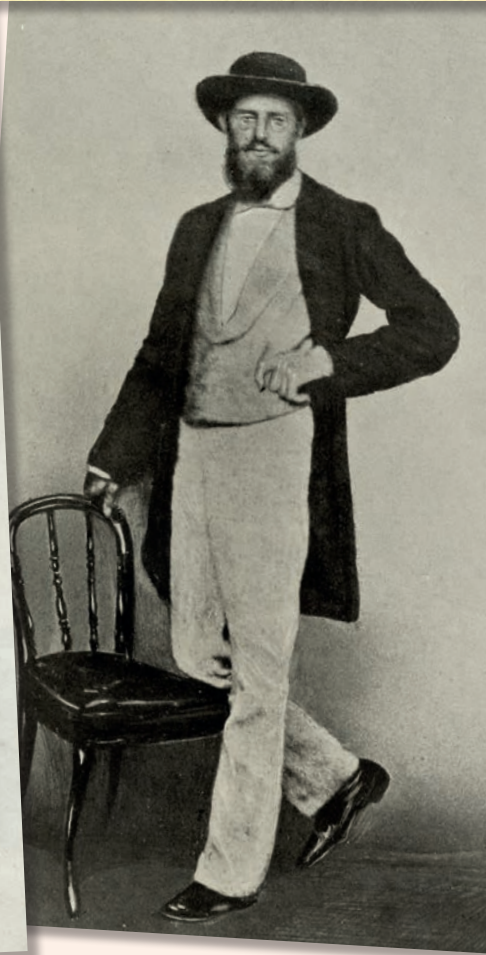
TOP: Wallace's ticket to the Linnean Society's Darwin-Wallace Celebration of 1 July 1908 (WCP5400). Now in the collection of the Natural History Museum, London.

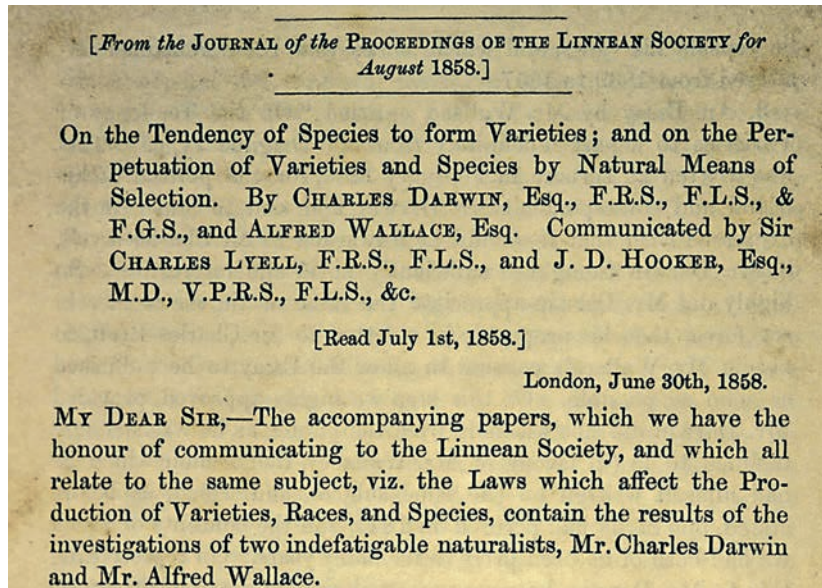
BELOW LEFT: Wallace with his friend Frederick F. Geach in Singapore in February 1862. Now in the collection of the Natural History Museum, London.

BELOW RIGHT: Wallace in Singapore in February 1862. As can be seen in the original photograph, Frederick F. Geach was to his right, but he was removed. From James Marchant's *Alfred Russel Wallace Letters and Reminiscences* (1916).



F. F. Geach. Alfred R. Wallace
Singapore Feb. 1862.





ABOVE: Title of Darwin and Wallace's 'joint paper' on natural selection of 1858 (Darwin & Wallace 1858).

published, I never troubled about it, till I reprinted it (from the 'Journal') in my 'Natural Selection' in 1870.

I should think the Sec[retary] of the Linn. Society, or whoever edited the 'Journal', would have had it, and would either have destroyed it or kept it till applied for by the author, according to what was the custom of the Society with regard to Mss. sent from abroad.

As to your letter and that of Darwin, informing me what had been done about the paper, I have not the least recollection of having seen them after I came home. Considering the matter closed, by the receipt of them, and my acknowledgement to Darwin, I fear I did not keep them, as at that time I had not begun to keep the letters of my correspondents.

If I did keep them, I probably sent them home with some of my collections, and they may easily have got mislaid or destroyed; and three years afterwards when I came home I was so much occupied with my own collections and with the discussions excited by the 'Origin' and by H[erbert]. Spencer's works, that I may myself have thrown them away as of no further interest. (But I do not think I did). If I had, at any later period come across them, I should certainly have sent them to F. Darwin for the 'Life & Letters', and that I did not do so, is the best proof I can offer that I have not now got them.

It is certainly curious that I have letters from Darwin in 1857—and 1859, the latter referring to my reply to his letter & yours in 1858 - but that those 2 letters—which now would be the most interesting—seem irretrievably lost.

It is just possible they may have got into some book or paper, after showing them to some one, and if so they may turn up after another half century!¹⁶

Sadly, after more than a century, neither letter has been found, despite the fact that Wallace's surviving papers have been examined and catalogued, and the books he owned checked for inserted or loose documents. It is highly improbable, but not impossible, that one or both survive.

Mr F[rances]. Darwin informs me that your letter & enclosure received by his Father June 18 1858 was nowhere to be found when he published the 'Life & Letters' in 1887, & that it has not since turned up. Can he have returned it to you? if so would you kindly send him or me a copy? Also copies of my letter to you on or about July 13th. 1858 enclosed in one from Darwin (see 'Life & Letter' ii 128) & Darwin's covering letter, are very much desired by us—we are collecting scattered documents relating to the subject of your & Darwins [*sic*] views appearing in Linn. Soc. Proceedings.¹⁵

Wallace replied on 4 June 1908:

I am quite sure that I never saw the Mss. of my paper or the letter I sent to Darwin in Feb. 1838 [1858], at any time afterwards. After the paper was printed, and I had copies of the 'Journal' with it, - and especially after the 'Origin' was

published, I never troubled about it, till I reprinted it (from the 'Journal') in my 'Natural Selection' in 1870.

I should think the Sec[retary] of the Linn. Society, or whoever edited the 'Journal', would have had it, and would either have destroyed it or kept it till applied for by the author, according to what was the custom of the Society with regard to Mss. sent from abroad.

As to your letter and that of Darwin, informing me what had been done about the paper, I have not the least recollection of having seen them after I came home. Considering the matter closed, by the receipt of them, and my acknowledgement to Darwin, I fear I did not keep them, as at that time I had not begun to keep the letters of my correspondents.

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Sadly, after more than a century, neither letter has been found, despite the fact that Wallace's surviving papers have been examined and catalogued, and the books he owned checked for inserted or loose documents. It is highly improbable, but not impossible, that one or both survive.

George Beccaloni (g.beccaloni@wallaceletters.org)
The Alfred Russel Wallace Correspondence Project and Wallace Fund

Acknowledgements

The newly found documents discussed above were discovered during the course of my work on Phase 2 of the Alfred Russel Wallace Correspondence Project (<https://wallaceletters.myspecies.info>). I am very grateful to the John Templeton Foundation for funding Phase 2, and to the Charles Darwin Trust for managing the grant. I also thank the project staff and volunteers for all their hard work, and James Costa for his comments on this article.

Notes

The numbers below prefixed by ‘WCP’ are unique identifiers for letters; the transcripts and metadata of which are present in the Wallace Correspondence Project’s online archive: (<https://tinyurl.com/WallaceInEpsilon>).

1. It may well have been a lettersheet (where one page of the letter was folded in such a way that it formed an envelope with one side bearing the postal address of the intended recipient). A letter from Wallace to Frederick Bates dated 2 March 1858 (WCP367), which he posted on 9 March 1858, was a lettersheet and enclosed a long letter to Frederick’s brother Henry (WCP366).
2. Letter WCP5647.
3. Letter WCP5311.
4. Letter WCP5648.
5. The two letters Hooker mentioned are WCP5647 and WCP5648, but Lyell also kept two others from Darwin: WCP5649 and WCP5651. None of the other letters he received from Darwin or any that Hooker sent to him regarding the ‘Ternate affair’ survive.
6. Letter WCP5326.
7. Darwin, C. to Lyell, K.M. 1875. Darwin Correspondence Project: Letter no. 13826. <https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-13826.xml>
8. Darwin’s explanation agrees with the fact that only three pre-1862 letters from Wallace to him survive: part of a torn page of a letter dated 27 September 1857 (WCP4080), the postscript to a letter tentatively dated to December 1860 (WCP4079), and most of a letter dated 30 November 1861 (WCP4109), which Darwin would have received in early 1862, perhaps after he burned his pre 1862 letters. Most of the letters sent by Wallace to Darwin after 1861 seem to have survived.
9. This is known because in a letter from Darwin to Hooker dated 13 July 1858 (WCP5298) he writes: ‘...your letter to Wallace seems to me perfect, quite clear & most courteous...and I have today forwarded it with a letter of my own.’
10. Letter WCP1454.
11. One letter from Darwin to Wallace is definitely missing. Part of it, a list of the chapters of Darwin’s manuscript book ‘Natural Selection’ (WCP7215), was copied by Wallace into his Species Notebook (Costa 2013: 430–431). A study of the chapter headings by Costa (2013) suggests that the list was sent to Wallace in late 1858 in a lost letter. In a letter dated 12 October 1858 (WCP5335) Darwin tells Hooker he sent Wallace 8 copies of the offprint of Darwin & Wallace (1858), so the chapter list may have been sent together with these. Possibly two other letters are also missing. In a letter to Lyell dated 25 June 1858 (WCP5648) Darwin wrote, ‘I sh[oul]d not have sent off your letter without further reflexion...But I confess it never did occur to me, as it ought, that Wallace could have made any use of your letter.’ This suggests that he sent Wallace a letter from Lyell, probably with a covering letter of his

own, in June 1858. If so no mention of it was ever made by Wallace or anyone else. Finally, in a letter to Wallace dated 25 January 1859 (WCP1841) Darwin said “I sent off, by same address as this note, a copy of Journal of Linn. Soc. & subsequently I have sent some 1/2 dozen copies of the Paper.”, suggesting he sent a copy of the whole journal containing Darwin & Wallace (1858) prior to his letter to Hooker of 12 October 1858 (WCP5335) which mentioned the offprints.

12. Letter WCP3958, in which Wallace writes ‘...I send you also the 8 Early letters I received from Darwin while in the Malay Archipelago, which, though all but one have been printed, may be of interest...’.
13. Letters WCP1839, WCP1840, WCP1841, WCP1842, WCP1843, WCP1844 and WCP1846.
14. Letter WCP1845.
15. Letter WCP2904.
16. Letter WCP5564.

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ALFRED RUSSEL WALLACE

Bicentenary Celebrations 2023

In 2023 we'll be celebrating the bicentenary of the birth of Alfred Russel Wallace (1823–1813), co-discoverer of the theory of evolution by natural selection and Father of Biogeography. To mark the occasion we have lined up some terrific talks and events.

SUN 8 JANUARY 2023: DAY EVENT IN USK, WALES

Usk Civic Society and Usk Rotary Club, together with the Linnean Society of London, have organised a day of special events in celebration of Wallace's birth, in his Welsh birthplace.

- **Walk with Wallace Trail (guided)**
- **Tree planting (of a *Sorbus anglica*) at the Wallace Arboretum**
- ***You Should Ask Wallace*: Theatre performance***
- **Wallace the Botanist: A talk by Dr Sandra Knapp FLS FRS**

Any Fellows who would like to attend should contact Jonathan Stephens FLS (jmhstephens@icloud.com) for further details.

*Payment required for theatre performance

TUES 10 JANUARY 2023: LINNEAN LENS, 14.00 GMT

ALFRED RUSSEL WALLACE'S 'PALMS OF THE AMAZON'

Wallace was fascinated by the rich flora of the tropics, and in particular palms—plants that stand out in tropical forests and were, and still are, widely used by people in their daily lives. His ship home from South America caught fire and sank, destroying all his collections, save the shirt on his back and some drawings he was working on in his cabin. Among these were his sketches of palm trees, which **Dr Sandra Knapp PPLS** of London's Natural History Museum will dive into in this talk. (ONLINE)



TUES 14 MARCH 2023: LINNEAN LENS, 14.00 GMT

WALLACE'S REMARKABLE DISCOVERIES IN THE 'MALAY ARCHIPELAGO'

This talk will look at Wallace's beginnings, then explore the great discoveries he made during the 'central and controlling incident' of his life—his eight-year collecting expedition to the 'Malay Archipelago'. He collected an astonishing 126,000 animal specimens, details of which were recorded in a series of collecting notebooks, which **Dr George Beccaloni FLS**, Director of the Wallace Correspondence Project, will investigate and display in real time. (ONLINE)



FRI 30 JUNE 2023: NATURE READER, 18.00 GMT

RADICAL BY NATURE

Dr James Costa FLS, Executive Director at the Highlands Biological Station, Western Carolina University, will be revealing the revolutionary life of Wallace in this talk, painting a fascinating portrait with his new biography, *Radical by Nature*.

Drinks will follow in the Reynold's Room at the Royal Academy of Arts—where Darwin and Wallace's contributions on evolution by natural selection were first read.

Events are subject to change so please keep an eye on our website for alterations or other activities as the year progresses!



Visibility Matters

*Giving credit where
it's due in natural history collections*

by Siobhan Leachman, Wikimedian

We can all agree that natural history collections are of vital importance, helping improve knowledge about such topics as taxonomy, climate change, conservation, invasive species and medical treatments. However, despite the importance of these collections, many are underfunded, understaffed and generally undervalued. One of several reasons for this is that, unlike those who use natural history collections to undertake research and subsequently publish books or scientific articles, the people who do the vital work of creating, curating and caring for natural history collections are often overlooked (Groom et al. 2020).

Natural history collections are also struggling to improve the coverage of and credit given to contributors from marginalised groups. Natural history institutions, like many other cultural heritage organisations, are attempting to redress an imbalanced narrative caused by a backdrop of bias and the resulting under-appreciation of contributions made by marginalised people (Davis 2019; Anon 2021).

Linking data to improve our knowledge

One method being utilised to address these issues is to link items to relating biographical information; for example, linking a specimen to the biographical information of the collector of that specimen, ensuring that the collector is properly acknowledged. This acknowledgement, as well as linking to information regarding other contributors and curators in the item's history, can go some way to determining that this work is recognised as valuable, enabling an institution to give credit where credit is due.

There are also wider benefits that can result from linking to this biographical data. It can help inform the history of science by giving context to the creation and care of collections, and the resulting scientific impact of contributors. It can facilitate new discoveries on how and why specimens were collected, as well as improve the quality of the specimen's data. This work linking information also provides an opportunity to engage not only with a wider and more diverse group of contributors, but with a more diverse audience, especially if the ability to undertake this linking is democratised (Dillon et al. 2021).

A simple example of this type of linking can be seen in a story on the Linnean Society website, 'The Man Who Taught Charles Darwin Taxidermy', which highlights the contributions made by Guyanese taxidermist John Edmonstone (Melbourne 2018). This article offers biographical information and recognises Edmonstone's contributions to the natural sciences, particularly his influence on Charles Darwin.

Identifying links

Such linking between people, their biographical information and their contributions also occurs within institutional databases. The ease of this linking is enhanced if unique identifiers exist for each element needing to be linked. For example, contributors to collections may be assigned, or can create for themselves, a unique identifier. Often people have numerous identifiers assigned to them by different institutions; a botanical researcher may create an ORCID identifier to use when they publish scholarly articles, but that same researcher may also have an identifier assigned to them by their affiliated natural history institution. In addition, library databases, natural history societies and genealogy databases may all assign identifiers to that same researcher.

OPPOSITE: Technology has connected the scientific world for decades, as this satellite image of sunrise over the South China Sea illustrates. Now it can help to uncover and link lesser-known names in natural history collections, widening the pool of research.



These identifiers can then be used to help link the person to their biographical information and, in turn, to their contributions. There are numerous tools and workflows that can be used to do this, but one tool that democratises the process and empowers anyone to undertake this important work is Wikidata: <https://www.wikidata.org/>.

The power of Wikidata

Wikidata is a project overseen by the Wikimedia Foundation, and is a sister project to Wikipedia. Simply put, it is a database which contains many millions of items about multiple entities, including people, and it can be edited by anyone. It empowers both humans and machines to create items about people or subjects, and allows anyone to add factual statements to those items. (Vrandečić & Krötzsch 2014)

It can also be edited in multiple languages (Kaffee & Simperl 2018). This ensures that a wider pool of people, including those in marginalised groups, can contribute knowledge to the database in their own language, allowing everyone to benefit from that enrichment.

Wikidata is a particularly powerful tool for linking people in marginalised groups as it has a lower

notability criteria than Wikipedia. Notability criteria is the measurement of a person's 'notability', by way of coverage in secondary sources; Wikipedia requires entities to have significant coverage. By contrast, Wikidata only requires items to either have a valid site link to any Wiki projects maintained by the Wikimedia Foundation, or to cover a clearly identifiable entity described by publicly available trustworthy references, or to fulfil a structural need in Wikidata (Wikidata 2022). Achieving any of these three criteria will ensure the entity is considered 'notable' for the purposes of Wikidata and enables a Wikidata item to be created for it.

Some Linnean linking

How does this help redress the imbalance for underrepresented groups? This lower threshold ensures that people who, until now, may have been unable to have a Wikipedia article, are now able to have a Wikidata item. Take for example Hannah Robertson (c. 1826–1910), phycologist and wife of the Scottish naturalist, geologist and Fellow of the Linnean Society, David Robertson (1806–1896). Currently, it is arguable whether she can be considered notable by Wikipedia's standards; some may say she has

BELOW: The Wikidata item for Hannah Robertson allows for multiple aliases, and helps to consolidate her contributions to science that might otherwise go unrecognised.

The screenshot shows the Wikidata page for Hannah Robertson (Q91538022). The page is in English and shows the item's description: "British phycologist and scientific collector of natural history specimens (c.1826-1910)". Below the description, there are aliases: "Hannah Alston", "Mrs David Robertson", "H Robertson", and "Mrs D Robertson". A table shows the item's label and description in multiple languages (English, French, German, Spanish). The "Statements" section shows the item is an instance of "human".

Language	Label	Description	Also known as
English	Hannah Robertson	British phycologist and scientific collector of natural history specimens (c.1826-1910)	Hannah Alston Mrs David Robertson H Robertson Mrs D Robertson
French	Hannah Robertson	No description defined	
German	Hannah Robertson	No description defined	
Spanish	Hannah Robertson	No description defined	

yet to receive ‘significant coverage’ in secondary sources. However, she is definitely notable for the purposes of Wikidata, as she is the main subject of one scholarly article, her specimens are held in numerous natural history collections, and the Harvard Index of Botanists has created a unique identifier for her under the name ‘Mrs D. Robertson’: <https://www.wikidata.org/wiki/Q91538022>.

As can be seen here, another advantage of Wikidata is that multiple aliases can be attached to the item. This can be particularly helpful when consolidating the contributions made by women who may have changed their name through marriage, or for people known by different names during their lifetime.

When creating or improving items on Wikidata, it is good practice to reference any factual statements added; references help to ensure the data is verifiable. Adding references can also be a method for collating coverage in secondary sources on underrepresented people. One example is the Wikidata item for one of the first women elected as a Fellow of the Linnean Society, Annie Lorrain Smith (1854–1937): <https://www.wikidata.org/wiki/Q4267084>.

This item contains a statement that Smith was a member of the British Mycological Society. It is referenced and includes a link to the Wikidata item for the scientific article ‘Naming Names: The first women taxonomists in mycology’ (Maroske & May 2018). This referencing ensures the data added can be verified, and enables researchers to more easily find literature discussing Smith’s contributions.

Another important aspect of Wikidata is that it also links to other databases. A Wikidata item for a person can contain not just referenced biographical data, but may also link out to other databases that themselves contain data on the subject (Erxleben *et al.* 2014). This allows Wikidata to act as a database hub, connecting the information contained in other databases with the information contained in Wikidata, building a linked network of information about the person in question. This aggregation can then help increase the information known about a subject.

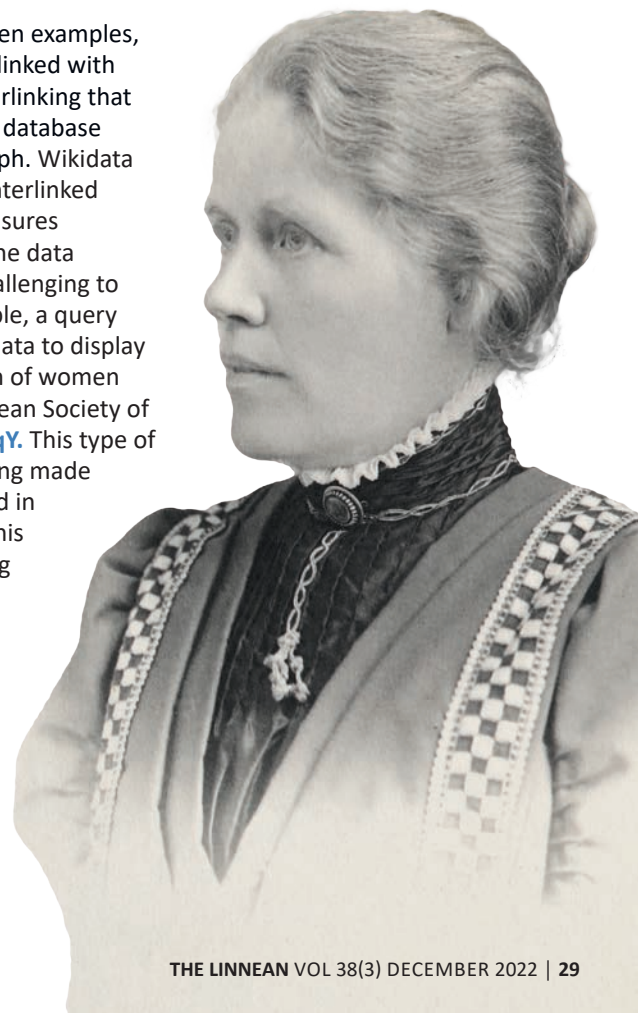
To give an example of this linking, consider another of the Linnean Society’s first women

Fellows, palaeobotanist Margaret Jane Benson (1859–1936) <https://www.wikidata.org/wiki/Q15994297>. Her Wikidata item contains a list of identifiers produced by various databases. The databases that are connected include the Oxford Dictionary of National Biography, the National Archives and the Harvard University Herbarium Index of Botanists. These identifiers can be clicked on to transport the reader from the Wikidata item directly to the other linked databases, extending opportunities for researchers to discover in depth biographical information about Benson.

Obviously for living people this aggregation of data and linking may raise issues of infringement of privacy. Wikidata values the dignity of everyone it covers, attempting to ensure that all data is accurate and, in relation to living people, conforms to expectations of privacy. As such, Wikidata strives to mitigate the possible dangers of this aggregation of data by creating and enforcing policies regarding its coverage of living people (Wikidata 2022).

As can be seen from the given examples, Wikidata items can be interlinked with each other and it is this interlinking that transforms Wikidata from a database into a linked knowledge graph. Wikidata is also queryable, and the interlinked nature of Wikidata items ensures questions can be asked of the data that might otherwise be challenging to answer. By way of an example, a query can be created asking Wikidata to display on a map the places of birth of women who are Fellows of the Linnean Society of London: <https://w.wiki/5bqY>. This type of query relies on the data being made publicly available and placed in Wikidata. Queries such as this can not only assist in helping answer more challenging research questions, but can also be used to highlight gaps in the data available, which in turn can encourage further research and assist in improving knowledge about marginalised people.

BELOW: Wikidata acts as a hub for linking information; Margaret Benson's Wikidata item connects information from several databases, raising her profile and extending opportunities for research.



OPPOSITE: This conference poster highlights some results generated from ongoing research into the women after whom plant genera have been named. Preliminary results indicate a trend away from naming plant genera for mythical women to naming plant genera after women who have contributed to the science of botany (von Mering *et al.* 2022).

Researchers are now using Wikidata to create and link data to inform their research, like the research currently being undertaken in linking women to plant genera named in their honour (von Mering *et al.* 2022). Items about these women have been added to Wikidata and augmented with biographical data, and have then been connected to the items for the related plant genera. Wikidata can then be queried and used to generate data visualisations to further inform research into those women, their occupations, the patterns and timelines of the naming, and so much more.

Visibility matters

The data held by Wikidata is also openly licensed under a Creative Commons CC0 licence, which affirms that the data can be reused by anyone, for any purpose. Examples of institutions that reuse this data include internet search engines like Google and virtual assistants such as Siri. This helps to ensure underrepresented people with a presence in Wikidata are much easier to find, and their contributions are more visible.

This Creative Commons CC0 licensing also supports the building of tools that can help connect people to their contributions. One such tool is the website Bionomia: <https://bionomia.net/>, a website that enables data from Wikidata to be used to create a profile for natural history specimen collectors. Bionomia then suggests digitised specimens that may have been collected by that collector, by using the digitised specimen data held in the Global Biodiversity Information Facility (GBIF) (Güntsch *et al.* 2021). Bionomia empowers volunteers to link those specimens to a specific person's Wikidata item, which benefits not only the institution whose specimen data has been placed in GBIF, but anyone undertaking research on those specimens and those researching the history of science. The linking can enable Bionomia to share such information as the co-collectors of the person, the locations where the collector concentrated their work, and whether the collector specialised in collecting particular organisms.

Another tool that makes use of Wikidata is the website Science Stories: <http://www.sciencestories.io/>, a website created to highlight the stories of women scientists and scientists from marginalised groups (Thornton & Seals-Nutt 2018). It links to and constructs visualisations using the data, images, articles and biographies contained in Wikidata, Wikipedia and WikiCommons. By using Wikidata to link to underrepresented peoples, their contributions and to other databases, this website allows anyone to study the stories of marginalised people and their contributions to science.

Barriers to overcome

However, despite the power of Wikidata, barriers still exist. Wikidata relies on the information about underrepresented people and their contributions being documented and recorded in a form that can be added and linked to Wikidata. If a marginalised person's biographical information is not recorded, or exists in a form that Wikidata is currently unable to incorporate, Wikidata will be unable to assist in ensuring these people obtain credit for their contributions.

Despite these limitations, Wikidata is an extremely useful tool that can be used by anyone to improve knowledge and raise the profile of people from marginalised groups. By linking seemingly disparate pieces of information, it is often possible to gather enough data to tell at least a part of someone's story, and to give some credit for their contributions.

The Linnean Society is assisting with the effort to increase the visibility of underrepresented peoples. By linking the Linnean Society collections to the people who have created, curated and cared for those collections, the Society, and its members, can increase what is known about marginalised people and their important contributions to natural history.

Siobhan Leachman, *Wikimedian CC BY 4.0*
Wikimedia Aotearoa New Zealand. <https://orcid.org/0000-0002-5398-7721>



FAKE MUSE!



Were more plant genera *really* named for nymphs than women who actually lived?

Sabine von Mering, Sandra Knapp, Siobhan Leachman, Heather L. Lindon,
Carmen Ulloa Ulloa, Sarah Vincent, Maria S. Vorontsova, Lauren M. Gardiner

This project began with tweets – celebrating the women for whom plant genera are named, but seeking information on why there appeared to be so few plant genera named for women.

We used Burkhardt (2018, 2022) and Mari Mut (2017-2021) to compile a list of eponymic generic names, verified each was indeed named for a woman and categorised the person-names.

Where it started - where it went:

- ❖ Only 40 such women had Wikidata entries, now more than 700 women are linked to genera named for them
- ❖ Of the several thousand genera named for people fewer than 10% are named for women

We used Wikidata to create linked open data for both plant genera and the women for whom they have been named.

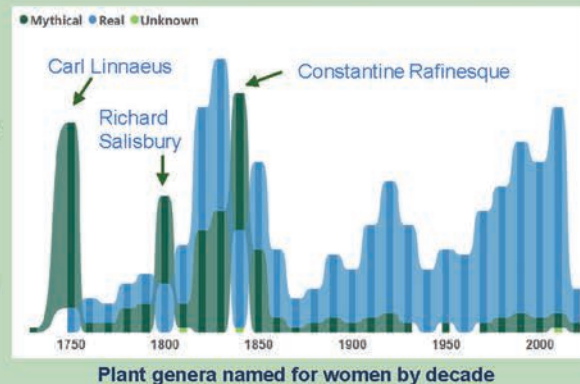
A statement was added to each appropriate Wikidata item linking the genus to the woman using the “named after” property. This method required the creation and enrichment of multiple Wikidata items for women and genera. We also added links in the women’s Wikidata items to other databases including those maintained by herbaria, museums, libraries, genealogical, history and botanical institutions.

By adding and enriching Wikidata, our research and the women it celebrates has been made visible, encouraging the ongoing enrichment and reuse of these data.

Linnaeus (1751) had rules for naming genera – such names were not given lightly, but *could* commemorate mythical figures, kings or botanists.....

So far we have found:

- ❖ a shift from naming genera for mythical women ca. 1850
- ❖ some authors coined many names based on mythical women - some of whom are not known in classical mythology - are they made up?
- ❖ an emerging trend to name genera for women who have contributed to the science of botany
- ❖ modern trend of explaining etymology contributes to celebration of diversity in botany



References: Linnaeus C (1751) [Systema Naturae](#); Burkhardt L (2018, 2022) [The Naming of Plants](#); Mari Mut JA (2017-2021) [Plant genera named after people \(1753-1853\)](#)



We are only just beginning our analyses! What are YOUR questions for these data?
#eponymatrices #WomenPlantGenera



Celebrating Women Through Naming



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Spilling the Tea

Adapting our tea conference during a global pandemic



by Romita Ray

Fittingly, it began over a cup of tea in the summer of 2018 at the National Maritime Museum (NMM) in Greenwich, where I had recently arrived as a Caird Research Fellow. Aaron Jaffer, the NMM's Curator of World History and Cultures, suggested I meet Jordan Goodman FLS, who was busy investigating Sir Joseph Banks and the movement of plants around the world. My own research focused on the tea plant, so, naturally, I was intrigued. One thing led to another, and over more cups of tea, this time with Jordan, an idea was born: how about organising a conference about tea? Better still, why not approach the Linnean Society to see if they might be willing to host the conference, at their home on London's Piccadilly? After all, leafy tea specimens tucked away between herbarium sheets hover like quiet whispers at Burlington House, beckoning at researchers to follow their trail through the herbaria assembled by Carl Linnaeus and Sir James Edward Smith, and through the Insch Tea Library and the porcelain tea services that once belonged to Linnaeus and William Stone (Stone's tea set is decorated with motifs inspired by the naturalist Maria Sibylla Merian's drawings of flowers and butterflies).

Tea trails

Another tea trail began to emerge as Jordan suggested we approach Richard Coulton, co-author of *Empire of Tea: The Asian Leaf that Conquered the World* (2018), to join our small but growing team of organisers. Richard had co-organised the Linnean Society's 2018 Day Meeting 'Remembering

ABOVE: Tea was on the rise and signalled the movement of wealth, people and ideas. Johan Zoffany (1733–1810), *The Auriol and Dashwood Families*, oil on canvas, about 1783–1787.



ABOVE: Examining Tea Specimens with Head of Collections Dr Isabelle Charmantier (Left) at The Linnean Society of London, 2022.

James Petiver (1665–1718) with a deft touch. Unbeknownst to the three of us at the time, our cheerful collaboration that began over a cup of tea would last for four years. Coincidentally, I had just started exploring the Linnean Society's tea collections with Head of Collections Isabelle Charmantier and Honorary Botanical Curator Mark Spencer. Proposing the conference was a natural next step, and much to our delight, our proposal was well received. Conference planning now began in earnest and we found ourselves grappling with the immense global footprint of tea: what stories about this plant commodity might we prioritise? What interdisciplinary conversations could we open up about a botanical curiosity that triggered the American War of Independence and Opium Wars, inspired a European ceramics revolution, and transformed the landscapes of India, Sri Lanka and Africa? The political economies of tea are inseparable from its scientific value, the histories of art and technology, and the geographies of cultivation.

They are also enmeshed with botanical matter that, together with edible leaves and fragile porcelain, have long forged complex global trajectories of science, commerce, taste, and consumption.

The mobilities of Chinese tea signalled the movement of wealth, ideas, objects, and people. By the early 1800s, the East India Company was exporting 30 million pounds of tea from China. At this same time, tea appeared in a box in the painted ceiling of the Revenue Committee Room of the East India House in London; filled porcelain cups in countless conversation pieces; and preoccupied physicians, naturalists, merchants, shop-keepers, auctioneers, ship captains, artists, porcelain-manufacturers, and East India Company administrators. It was planted in the Calcutta Botanic Garden and found its way into Bartram's Garden in Philadelphia. Chinese tea was on the brink of becoming a British imperial (trans)plant and a British imperial drink.

Focusing on the natural history of tea

But history can look very different, depending on where one stands. What, then, are the stories of tea that unfurled across both land and sea in Asia and Europe in the 17th and 18th centuries—stories that would spill over into 19th-century transformations of a leafy plant into an imperial commodity? A spate of excellent books published these past few decades have focused on the imperial histories of tea—Andrew Liu's *Tea War: A History of Capitalism in China and India* (2020), Erika Rappaport's *A Thirst for Empire: How Tea Shaped the Modern World* (2017) and Jayeeta Sharma's *Empire's Garden: Assam and the Making of India* (2011). In sharp contrast, only a handful of books have examined the emergent colonial histories and geographies of tea. Still fewer have looked at the natural history of the tea plant. So, for our conference, it was to the early materialities, narratives, and spaces of tea that we decided to turn.

As a list of international speakers emerged from across North America, Britain, Europe, and Asia, we could not help but consider the significance of our conference location: the port city of London with its deep material and cultural legacies of tea, to which the Linnean Society belongs. Adding a second conference day would give us the



opportunity to engage with those legacies by extending our discussions into the Society's herbaria, and to the China Tea Trade pictures and artefacts at the Martyn Gregory Gallery and the National Maritime Museum. Richard offered to curate a walk tracing tea's historic journey in London. We even considered organising a tea-tasting session.

A fresh plan

And then in March 2020, COVID-19 brought the world to a grinding halt. Delta and Omicron arrived, prompting us to postpone the conference not once, but twice. Finally, after much deliberation, we decided to go virtual in June 2022. With the pandemic still disrupting international flights and borders, we simply could not take the risk of meeting in-person. But, as Padma Ghosh, Events and Communications Manager at the Linnean Society reminded us, reconceptualising and reorganising our conference on Zoom would necessitate a level of flexibility, agility, and creativity to which we were unaccustomed. We had to be mindful of different time zones and the vagaries of Zoom fatigue.

A fresh plan was devised. Nine short research presentations spread over three days would be clustered under three broad categories that would link science with art, history with geography, and commerce with innovation: the natural history of tea in science and society; the material culture of tea in Asia and Europe; and Chinese tea and global commerce. Was this enough, we wondered? How might we

ABOVE: Spiridione Roma, *The East Offering its Riches to Britannia*, oil on canvas, 1778.



ABOVE: Mak Sau 麥秀 (active Guangzhou, China 1770s) for John Bradby Blake (1745-1773). Illustration of the tea plant (*Camellia sinensis*), inscribed: 夷茶 E Chaw. Ink and colors on unmarked paper with traces of pencil.

Acknowledgements

On behalf of her co-organisers, Jordan Goodman (UCL) and Richard Coulton (QMUL), Romita thanks the Linnean Society for hosting the tea conference. They are also grateful to the conference speakers and participants, and to Todd Rubin (The Republic of Tea) and Peter Crane (Oak Spring Garden Foundation) for their unwavering support. Additionally, they thank Mark Nesbitt, Senior Research Leader and Curator of the Economic Botany Collection at the Royal Botanic Gardens at Kew, and Aurora Prehn, researcher at Kew, for their input.

supplant our original plan to visit different tea-related archives and collections? We struck upon the solution to invite nine institutions in Britain, India, Taiwan, and the USA to contribute short videos about their tea collections. Each day would conclude with a panel discussion with our video presenters. Our goal had broadened to animate our scholarly discussions of tea, uncover hidden tea treasures in collections, and think about the future of tea science.

Going virtual gave us the unique opportunity to connect with a global audience. More than 900 conference registrations and attendees from over 50 countries are powerful testament to the global appeal of this subject—an appeal that brought tea industry experts, tea enthusiasts, historians, scientists, art historians, geographers, artists, material culture researchers, literary scholars, anthropologists, science writers, curators, archivists, and museum directors into the same Zoom room over the course of three days. Plants have the unique ability to connect people.

The dried herbarium tea specimens at the Linnean Society, long forgotten bits of human history, were now a part of a series of global conversations on Zoom. The tea plant had grown out of a natural history archive into a virtual frame, while our conference, 'Tea: Nature, Culture, Society, 1650-1850', lives on in the digital sphere of the Linnean Society's YouTube channel: <https://bit.ly/3ALLZhB>

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CHASING LINNAEUS

As Janice Pariat's book *Everything the Light Touches* joins *The New Yorker's* 'Best Books of 2022', she tells us of her experience researching Carl Linnaeus and his work in our London library.

I was all prepared to dislike Carl Linnaeus. And to depict him as unlikeable too. After all, I was attempting to write this sweepingly epic novel, exploring the tussle between different ways of seeing the world—the Linnaean way, intent on categorising and labelling, on reducing the natural world into an immutable, mechanistic collection of parts, and the Goethean way, that relied instead on unification and holism, on connection and imagination, on understanding living beings as existing in a state of constant 'becoming'. It was important that the narratives within my book, *Everything the Light Touches*, bolster the latter, that the section involving Linnaeus, served to nudge the reader into leaning toward Goethe's way of seeing.

And so, I set off that summer, in 2018, to the Linnean Society with this explicit mission in mind. I had limited time; a month, perhaps a month and a half in London, away from New Delhi, India, where I teach.

When I arrived, I remember thinking that I was stepping into an extraordinarily beautiful building—with a library, compact and light-filled, where I could see myself happily hidden away. I knew about the 'Linnaean Collections', which held, among other treasures, Linnaeus' unpublished Lapland journey diary from 1732, but more necessary for me was to access the 1811 translation of the same by James Edward Smith. My idea was this—that within a novel that hoped to question our penchant to categorise, I would insert, amidst the prose, a section of lyric narrative, told entirely through verse, and more specifically, Erasure. Erasure poetry is crafted using an original pre-existing text, and mine would be Linnaeus' 'Lachesis Lapponica' or 'Tour in Lapland'. The journal entries would serve as material for poems—not in the more tangible way that Erasure can function (for example, 'blacking out' or visibly obscuring portions of the text to craft a wholly new work from what remains) but in a gentler, less intrusive manner. To take

Linnaeus' words and place them in a poem, sometimes teasing them into a sestina or sonnet form, or allowing them to work in free and blank verse.

Within these verses, I thought I might conjure the image of Linnaeus obsessed with naming and organisation and little else, but over those weeks, I grew to realise that I might have been misled.

The Tour in Lapland diary was a delight to read.

Not just because I enjoy historical travel memoirs and it offered fascinating insight into a part of the world at a particular long-ago time, or that I found strange, lovely resonance between the ways of the Sami and the indigenous communities I belong to in India's Northeast—it was also because the 25-year-old Linnaeus I encountered within its pages was filled with wonder. It was powerful, and undeniable—his magnificent love for the natural world. The awe he felt, the affection, the careful attention he bestowed upon the living beings he came across—including the gnats that vexed him so!

I was, admittedly, a little unsettled. This was not according to plan. But it was, I came to realise, necessary—to

complicate my understanding of him, and more importantly, to acknowledge this in my book. He may have boasted about organising the world, but he was also deeply, profoundly appreciative of its wildness and beauty. All this I learned, perhaps most appropriately, in the Linnean Society Library. I felt I'd learned a lesson, as a person, as a writer. That in my attempt to challenge a way of seeing, I'd fallen prey to it myself. People are unwieldy. Even Linnaeus himself is uncategorisable.

Janice Pariat, author and poet

Everything the Light Touches (2022) is published by HarperCollins and is available now.





Spiritual Sages

A look at the harvest of white sage (*Salvia apiana*)

by Cassidy Adlof

ABOVE: *Salvia apiana* is found in the coastal sage scrub habitat and chaparral plant communities of southern California and northern Baja California.

There exists a fascinating relationship between humans and different plant species. We rely on them for food, shelter, medicines, and even our diverse array of spiritualities. Members of the mint family (Lamiaceae) are of particular interest due to their potent, and often pleasing, aromatic fragrance. Sages, mints, and rosemary plants all fit this category; along with many other culinary herbs.

Cultural significance

White sage (*Salvia apiana*), also known as bee sage and smudging sage, is a plant endemic to the coastal sage scrub and chaparral plant communities of southern California and northern Baja California (Davis *et al.* 1994, Baldwin *et al.* 2012). It is used as part of cleansing rituals, called smudging. Leaves and sometimes branches, either loose or bound into wands, are burnt, and the smoke is passed over a person, object, or walked throughout a home or area. Traditionally, this was done with white sage by different southern California Indigenous American cultures, and the use has expanded into more Indigenous American tribes, New Age, Druid, Wiccan, and other nature-centric religious groups for similar spiritual purposes.



White sage handles traditional harvest practices well, and when gathered in small amounts, there isn't any significant damage to the plant's health or overall fitness. Typically, individual harvesters that gather only for personal and gifting use will use techniques that are non-destructive to the plant. Regardless of cultural affiliation, they tend to take 25% or less of the plant, focusing on the collection of loose leaves or small pieces of a branch, distributed throughout the plant. Plants are carefully selected, with leaves being observed for healthy colour and low insect damage, and an offering of water (a limited resource for plants in California) is often made to the plant (Adlof 2016).

Plants are grown and sold commercially; however, some Indigenous American tribes believe that buying and selling white sage is immoral, and they require that leaves be gathered from wild populations (Adlof 2016). Many stores will also harvest from wild populations, sharing their techniques and stories in their 'About Us' website pages. Informal interviews suggest that this is in part due to the difficulty of growing white sage, especially outside of its native range. While some stores use techniques similar to individual harvesters, most will remove the entire surface portion of the plants, leaving only roots. White sage is adapted to fire, so can resprout after complete removal (Franklin *et al.* 2004, Marais *et al.* 2014). However, this negatively impacts the health and fitness of the plant, and frequent removal prevents the plant being able to store enough resources to resprout (Franklin *et al.* 2004, Marais *et al.* 2014).

Many wild-harvested plants around the globe are experiencing increased use (Cunningham 2001, Ticktin 2004), and white sage is no exception. As demand for this species has increased, there has been concern within the California Indigenous American community that populations are in decline due to overharvesting (USDA NRCS Plant Guide 1999, Pers. Obs. from Interviews in 2015). This concern isn't limited to white sage, and has been documented as an issue for wild herbs around

ABOVE: Wild populations of white sage are being harvested for commercial purposes, impacting on the fitness of the plants.



ABOVE: A *Salvia apiana* plant resprouting after complete removal.

the globe (Ticktin 2004). This can also be compounded by other pressures on the plant, such as a fragmented environment within a limited native growing range.

A limited native range

White sage's native range exists within a portion of the California floristic province hotspot. While white sage is not classified as endangered (USDA NRCS Plant Guide 2015), populations are fragmented and occur in low densities throughout the northern part of its native range (Davis *et al.* 1994). The region has less than 25% of the original vegetation remaining (Myers *et al.* 2000) and 60–80% of land that historically supported white sage habitat is located within just 0.382 km of a road (Riitters & Wickham 2003). This means that impacts on native plant species are widespread, and as a consequence these plants have a higher risk of rapid decline (Malcolm *et al.* 2006, Dirnböck *et al.* 2011, Lindenmayer *et al.* 2011).

The importance of sustainable harvest

The concern around white sage overharvest, and the taboo regarding the purchasing of sacred plants, has resulted in cross-cultural friction for some groups. For those that buy white sage, there is the worry that the plant could be harmed by improper, and possibly disrespectful harvesting practices; they would rather pay someone with the appropriate knowledge to do so. Access to the plant is the other issue; with the difficulty associated with growing white sage, a large proportion of those who might use plant as a part of their practices cannot grow it where they live (Adlof 2016).

Overharvest also brings other drawbacks. Trading one sacred herb for another is a common practice in Native American cultures. Gift giving is particularly important and is an integral part of many Native

American cultures, in turn extending to other cultural groups (Adlof 2016). Typically, these gifts are gathered by individual harvesters from one area, and exchanged with friends in different parts of the United States, even globally. While the act of gift giving brings with it obvious benefits of friendship and community building on many scales, it could also be a positive way to protect plants like white sage. By preserving certain cultural practices, the species can then be safeguarded by the promotion of sustainable harvest techniques used by individual harvesters, and bring the added value of stronger cross-cultural community ties.

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Echota Cherokee Tribe Member

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A Beautiful Fragment

The bicentenary of William Burchell's *Travels in the Interior of Southern Africa*

by Roger Stewart

Twenty-twenty two is the bicentenary of the publication of the first volume of *Travels in the Interior of Southern Africa* by William John Burchell FLS DCL (1781–1863).

The narrative starts in November 1810 and ends in August 1812 with his first departure from Litakun, the capital of the Bachapin (Batlhaping), about 70 km north of today's Kuruman. He returned to Cape Town in April 1815 and to London in November of the same year.

In 1817, Burchell wrote a laconic summary of his entire journey in the short-lived *Journal of Science and the Arts* and announced the future publication to 'communicate the result of his labours to the public giving that narrative part of his travels separate from that relating to natural history' (Burchell 1817a). However, the first volume was published only in 1822.

Prolonged Gestation

Burchell funded his African odyssey and could, therefore, also set his priorities on his return to the family home in Fulham, London. It was only 11 months after his return that he started to unpack and sort the more than 40,000 specimens in his southern African herbarium (McKay 1937). His first priority was horticulture: in the spring of 1816, he set about cultivating the bulbs and seeds he had collected on his return journey. He recorded progress in his *Hortus Fulhamensis*, now at the Royal Botanic Gardens, Kew,¹ and early successes were reported in the *Botanical Register* (Table 1).

1 WJB: Papers of William Burchell (1781–1863) Naturalist, Library of the Royal Botanical Gardens, Kew, London. Manuscript documents WJB/2/8 Hortus Fulhamensis: 1816–1825.

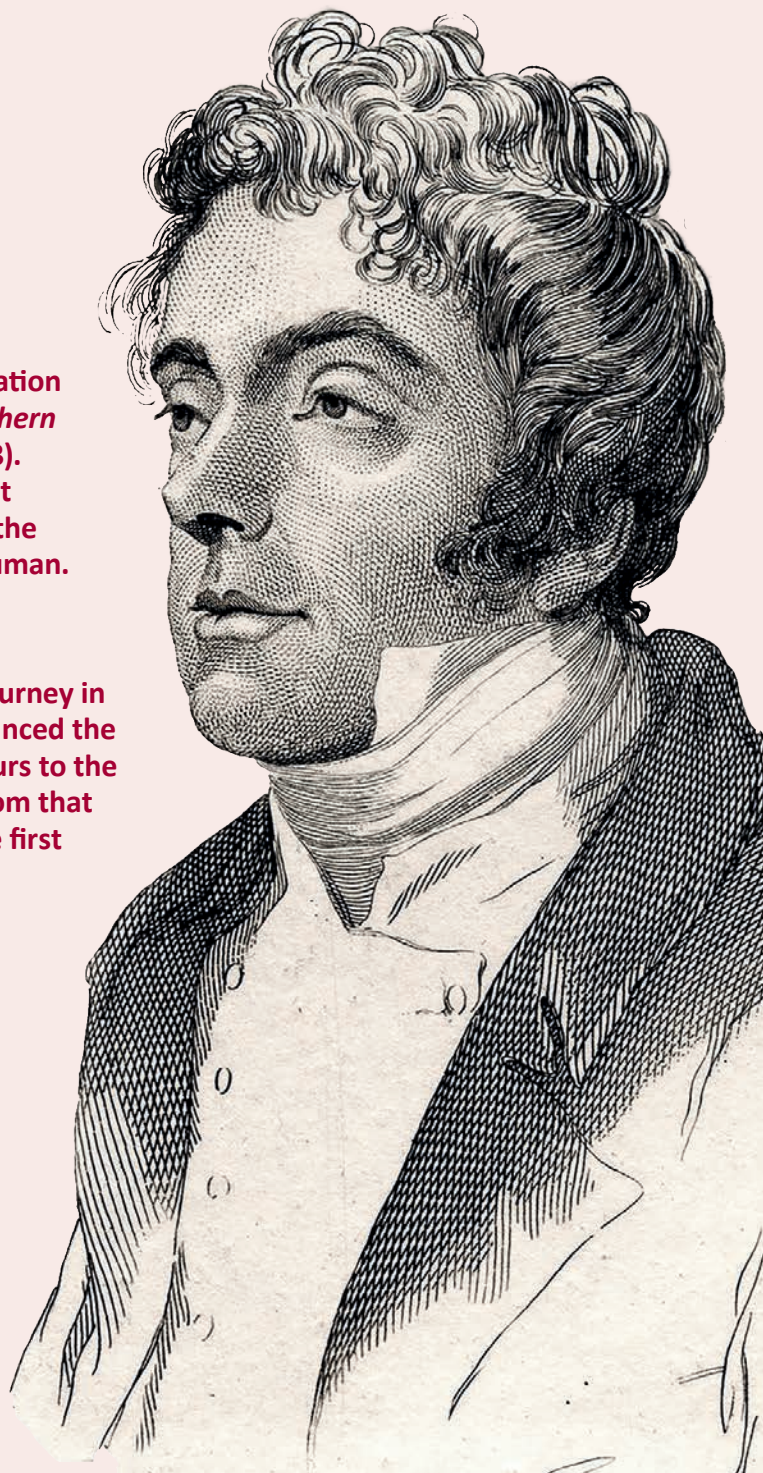


Table 1 Fifteen of Burchell's early cultivation successes were announced in the Botanical Register before he departed for Brazil.

OPPOSITE: William John Burchell by Mary Dawson Turner (1816).

Bot Reg Year	Plant	Bot Reg Plate #
1816	<i>Ammocharis coranica</i>	139
1816	<i>Hypoxis obtusa</i>	159
1816	<i>Gladiolus edulis</i>	169
1816	<i>Uropetalum</i> (i.e., <i>Dipcadi</i>) <i>glaucum</i>	156
1816	<i>Cyrtanthus spiralis</i>	167
1816	<i>Ornithogalum prasinum</i>	158
1816	<i>Cyrtanthus collinus</i>	162
1817	<i>Teedia pubescens</i>	214
1817	<i>Hermannia grandiflora</i>	224
1817	<i>Ornithogalum niveum</i>	235
1818	<i>Crassula versicolor</i>	320
1821	<i>Crinum bulbispermum</i>	546
1821	<i>Brunsvigia toxicara</i>	567
1821	<i>Mesembyanthemum blandum</i>	582
1823	<i>Massonia longifolia candida</i>	694

It is not clear if he initiated and submitted the publications, although his commentary was quoted in some of the publications, e.g. *Amaryllis coranica* and *Hermannia grandiflora*. In contrast to the illustrations in his book, he did not prepare the illustrations of the plants reported in the Botanical Register; they were drawn and coloured by the editor, Sydenham Edwards FLS (1768–1819).

Burchell's horticulture and the Botanical Register publications clearly gave rise to interest: Kew's director William Townsend Aiton (1766–1849) sent the plant collector, James Bowie (c. 1790–1869), to Cape Town, where he arrived a year after Burchell had returned to London.²

Horticulture and the herbarium were abruptly shifted into the background in 1819 by an unexpected diversion. Henry Nourse, a businessman, persuaded Burchell, apparently at short notice, to be interviewed by the parliamentary Poor Law Commission in connection with emigration to the Cape Colony (Theal 1874).

² Bowie, J. *S2A3 Biographical Database of South African Science*. https://www.s2a3.org.za/bio/Biograph_final.php?serial=319. [accessed 15 February 2022]



ABOVE: In 1820 Burchell's watercolour of the inside of his main wagon was displayed at the Royal Academy.

frontier region where Burchell had collected the plant of the genus would be named *Burchellia* by Robert Brown FLS (1773–1858) in 1820 (Brown 1820).

Burchell had fallen behind! Perhaps these developments in 1819 nudged him to retreat to a quiet spot near Sevenoaks, so that he could get on with the book he had promised two years earlier (McKay 1941). However, in February 1820 he was diverted by colouring the contents of the inside of his wagon depicted in one of the last African drawings. Museum Africa has his meticulous record of the three-month project.³

The evocative painting was displayed by the Royal Academy in the same year,⁴ and it is now at Oxford. An aquatint was not included in his book; perhaps it would have been in his envisaged final volume of the book.

A magnum opus...and commercial failure

In 1822 Longman, Hurst, Rees, Orme, Brown and Green produced 750 copies of the first volume of Burchell's *Travels*, and, presumably because of lower-than-expected sales, they published only 500 copies of the second volume in 1824 (Gordon-Brown 1967). Each volume sold for four-and-a-half

In July 1819, the reluctant Burchell acceded to Nourse's request and appeared for three hours before the commission. With uncharacteristic speed, Burchell completed a 48-page pamphlet in August 1819, titled *Hints on Emigration to the Cape of Good Hope* (Burchell 1819). In the pamphlet, he elaborated his views on the emigration, locations and opportunities in the colony, and the need for government support of settlers.

The Rev Christian Latrobe's (1758–1836) well-illustrated, two-volume book was published in 1818; Latrobe acknowledged Burchell's assistance with some natural history matters (Latrobe 1818). Latrobe's book was a success and the publishers prepared a second edition, in a less expensive format, that was published in 1821 (Latrobe 1821).

In 1813, Burchell had met Rev John Campbell (1766–1840), in Graaff-Reinet. Campbell had returned the following year and his book was published in 1815 (Campbell 1815). In February of 1819, he was back in the southern Africa for another journey. James Bowie had by now undertaken his first plant safari, to the

3 Burchell W. J. 'No. 737. The drawing of the inside of the waggon was finished in the following order.' Manuscript, original, A342, Box 2.8, William John Burchell Papers, Cullen Library, University of the Witwatersrand.

4 Inside of Mr Burchell's Wagon (48.5 × 34.6 cm), *The Exhibition of the Royal Academy, MDCCCXX. The Fifty-second*, 1820, 898.

guineas (Schapera 1953): £1 in 1822 is equivalent to approximately £135 today, so the book was very expensive.⁵

Travels in the Interior of Southern Africa was a *magnum opus*: altogether more than 1,000 quarto pages of narrative; a detailed itinerary and register of the weather; extensive natural history and general indexes in the second volume; two chapters on his ethnographic study of the Bachapin (Batlhaping); a chapter on his map and geographical considerations in which he provided both natural and political regions. Illustrations included 102 vignettes (wood engravings) and 20 aquatints; and the first volume included his large, detailed map (Stewart 2011).

Burchell did not really follow his 1817 intention to ‘communicate the result of his labours to the public giving that narrative part of his travels separate from that relating to natural history’ (Burchell 1817b). The narrative contained considerable natural history, such as lists of plants he had collected and even some footnotes in Latin with formal, scientific descriptions of some plants and animals.

Nevertheless, he obviously had another publication in mind, and, in the first volume of the book, he explained that ‘Descriptions of all the objects of natural history, observed during these travels, are intended to be published in a separate work. A list of the plants, arranged according to the days on which they were collected, and the places where they were found, will be given in a small precursory work, under the title of *Catalogus geographicus plantarum Africæ australis extratropicæ*, with notes of such particulars as may be thought interesting’ (Burchell 1822–1824). Those manuscripts were never published but are at Kew.⁶

It seems that the publishers had decided before or on publication of the second volume that they would not publish a third volume. Almost certainly the reason was simple: Burchell’s impressive *magnum opus* was a commercial failure.

Suggestions of a third volume

There has been speculation about Burchell’s preparations for subsequent volumes: no manuscript was found and only one field journal survived.⁷ The journal included part of his unpublished return journey: the day of his first departure from Litakun (3 August 1812) and only the following month, while he was on a safari near today’s Kuruman. More than one volume would almost certainly have been



ABOVE: Burchell prepared this aquatint for inclusion in his envisaged third volume of the *Travels*.

5 CPI Inflation Calculator, accessed 16 January 2022, <https://www.in2013dollars.com/uk-inflation>.

6 WJB: Papers of William Burchell (1781–1863) Naturalist, Series 1–4 (21 bound volumes). Archives of the Royal Botanic Gardens, Kew.

7 Mss presented by F. A. Burchell (grandnephew), 1906 in W. J. Burchell material in the Hope Library, University Museum, Oxford. Journal 24 May–2 September 1812.



ABOVE: In 2014, the author and Prof. Stanley Caveney (University of Western Ontario) unveiled this Burchell memorial in the Garden Route Botanical Garden in George, South Africa.

necessary for the narrative of the return journey: it was three times longer in duration, more than half of it on a new route and there were numerous experiences which he would have related in addition to describing the natural history (Stewart & Whitehead 2022).

There is good evidence that Burchell had started preparation for an additional volume. Two sets of unpublished ‘vignettes prepared for a third volume’ were sold at an auction four years before his death in 1863.⁸

In his introduction to the 1967 Struik reproduction of Burchell’s *Travels*, Alfred Gordon-Brown described an aquatint in the Library of the South African Parliament: ‘a folding-coloured plate by Burchell depicting natives collected round a rhinoceros.’ He added that: ‘The scene is described in the text (Vol. 2, p. 71) but this was for some reason omitted from the book’ (Gordon-Brown 1967). This assertion is repeated in the Rhino Resource Centre’s caption to Burchell’s ‘Rhino hunt’.⁹

The rhinos described in the *Travels* are black rhinos, shot in March 1812, while Burchell was in the heart of the Central Karoo on an excursion on horseback to Graaff-Reinet. He had left his wagons at Klaarwater. Both of the party’s wagons can be seen in the aquatint (PREVIOUS PAGE), and the landscape is typical of asbestos-bearing rocks at Chue Spring (now Heuningvlei) in the Kalahari, where his staff shot white and black rhinos in October 1812, on the return journey (Burchell 1817c).

There is more art to suggest Burchell had already prepared for other aquatints. I have visited or consulted four descendants of his brother, James, an apothecary who emigrated to South Africa in 1821 (Cleverly 1989). They have watercolours by the naturalist, some of which were used as models for plates 3, 5, 7 and 8 in the first volume of his book and for plates 2, 8 and 10 in the second volume. Other family watercolours could have illustrated his return journey: the Bachapin chief’s wives Mohutu, Kibbukiili; Linokwi, a poor herdsman; the entrance to the future Knysna harbour and stone wall ruins, almost certainly in old Litakun, which he visited in mid-September 1812.¹⁰

We can only speculate about Burchell’s emotional response to his publisher’s decision not to proceed with an additional volume. The upshot is that in March 1825, Burchell grasped the opportunity to join Sir Charles Stuart (1779–1845) on a trade mission to Brazil, where Burchell travelled until 1830 (McKay 1941).

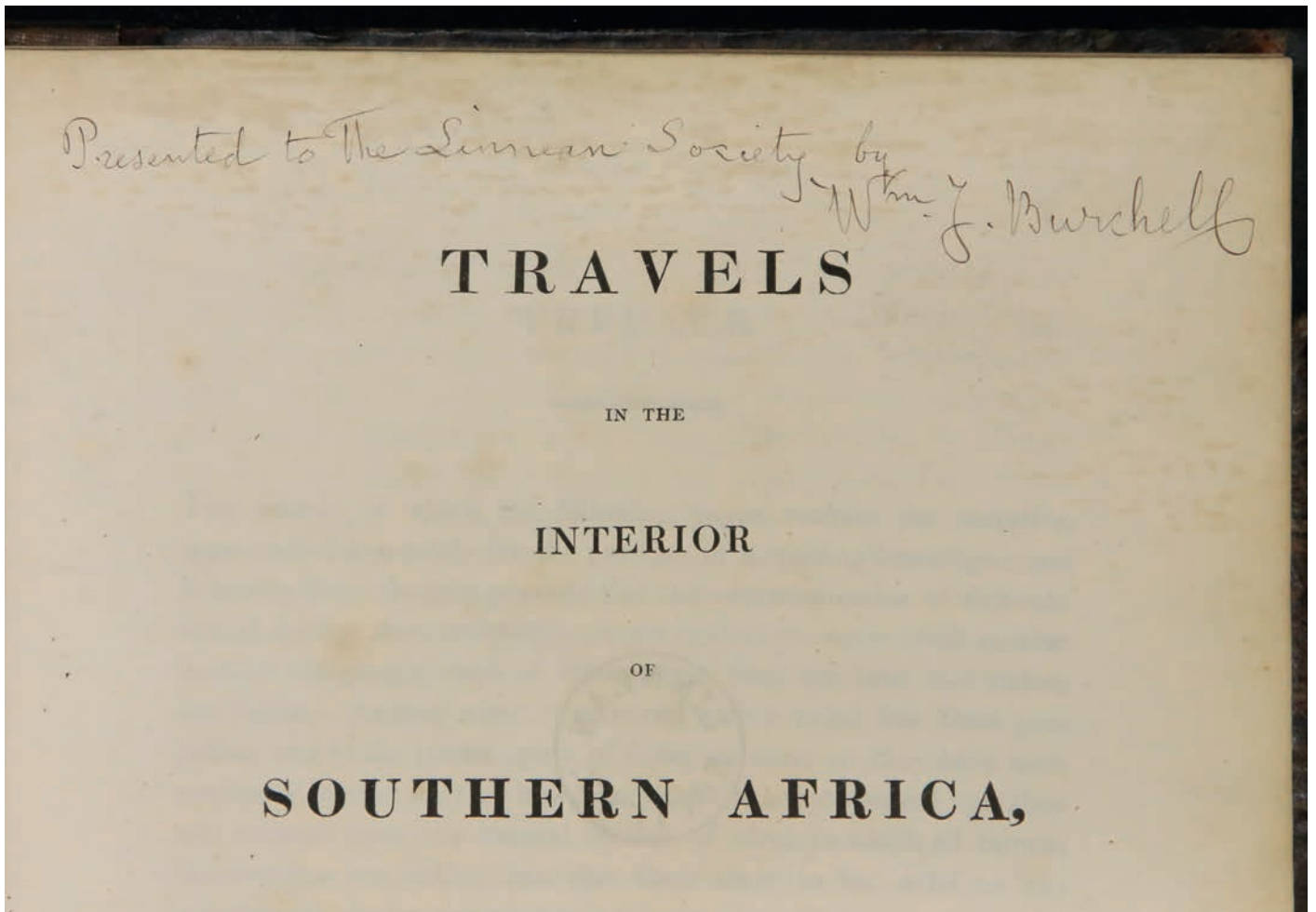
A reclusive end

This decision was a disaster from the perspective of the record of his southern African odyssey: he did not complete his book(s) on either his travels or the natural history. After Brazil he continued sorting and documenting his vast collections and visited naturalists in Europe. But Burchell did not publish further—not even his Brazilian odyssey. Tragically, he became increasingly reclusive and committed suicide while in his 82nd year.

8 McKay, H. Letter to the *Times Literary Supplement*, 12 March 1938, p. 176.

9 Rhino Resource Centre. ‘Burchell’s rhino hunt.’ http://www.rhinosourcecenter.com/images/Burchells-rhino-hunt_i1310785842.php [accessed 4 December 2021].

10 Burchell, W. J. WJB4/1, Part 2, *Catalogi Geographici Plantarum in Africa, Australi Extratropica. 1810–1815* in WJB: Papers of William Burchell (1781–1863) Naturalist, Archives of the Royal Botanic Gardens, Kew.



Burchell was the intellectual equal of Alexander von Humboldt, but, in later years, almost certainly suffered from severe depression, which, with no effective treatment available, prevented him from achieving a similar status in his own country. William Swainson FLS (1789–1855), the zoologist and Burchell's friend, lamented that 'Science must ever regret that one whose powers of mind were so varied...was so signally neglected in his own country' (Swainson 1840).

Nevertheless, Burchell used his skills in prose and drawing effortlessly to integrate his experiences and wide-ranging observations in southern Africa and to share his thoughts and world view; his nascent thinking on ecosystems was prescient; and his map influenced English cartographers (Stewart & Warner 2012).

Burchell wove these diverse threads to produce what is arguably the most aesthetically appealing and intellectually compelling literary tapestry on southern Africa's natural history and diverse inhabitants. He may not have completed the tapestry, but he left us a beautiful fragment.

The 200-year-old, unfinished *Travels in the Interior of Southern Africa* by William John Burchell FLS DCL is still worthy of our attention.

ABOVE: The Linnean Society holds a copy of vols 1 and 2 of Burchell's *Travels*, presented by Burchell himself.

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ABOVE: Image from a glass slide (c. 1935) of a self-portrait Burchell completed during his return journey on 8 December 1812, near today's Kuruman.

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Reviews

En busca del origen [In search of the origin]

Felipe Guhl

344pp, Universidad de los Andes: Academia Colombiana de Ciencias Exactas, Físicas y Naturales: Villegas Editores, Bogotá 2021 (Hardback) ISBN 9789587981940 Col./bw illust. £16.99



On the eve of the bicentenary of Alfred Russel Wallace (1823–1913) in 2023, biologist Felipe Guhl—professor emeritus at Universidad de los Andes in Bogotá, member of the Colombian Academy of Exact, Physical and Natural Sciences and Fellow of the Linnean Society of London—addresses the origins of the theory of evolution by natural selection. In his most recent Spanish-language book, *En busca del origen [In search of the origin]*, Professor Guhl states that, although Charles Darwin and his work *On the origin of species...* (1859) are usually cited as the source of natural selection, ‘the ideas proposed by Wallace were analysed by Darwin and served as the trigger for his accelerated publication of his theory of evolution’ (pp. 11–12). There is growing acknowledgement of the theory as ‘Darwin and Wallace’s’, and this recognition has gained ground since 1908, with the establishment of the Darwin-Wallace Medal by the Linnean Society of London, which is awarded to commemorate the reading of Darwin and Wallace’s joint paper on 1 July 1858, subsequently published in the Society’s *Proceedings (Zoology)*.

After this statement, and before moving on to the introduction of the book, the reader will find a very stimulating 15-page foreword written by sociologist Guillermo Páramo Rocha, professor emeritus at the National University of Colombia and honorary member of the Academy of Sciences. Professor Páramo interprets the asymmetry in the historical recognition of Darwin and Wallace in terms of the ‘Matthew effect’, which outlines—in the words of Robert K.

Merton from his original article in *Science* (1968)—how ‘he who is better known gets more credit, an excessive amount of credit’.

After recounting in the first chapter the training of Alfred Russel Wallace in England, the work of Guhl dives deep into Wallace’s explorations in the Amazon basin between 1848 and 1852. In doing so, Guhl goes well beyond the required review of the simultaneous development of a theory in the minds of Darwin and Wallace, aiming to understand the link between all living things on the planet. His contribution to scientific literature and to the history of naturalist travellers in the 19th century in South America, particularly in Colombian territories, relies on a detailed step by step recreation of Wallace’s journey through 2,175 km along the Vaupés and Guainía rivers, more than 170 years after the original voyage. With laudable social sensibility, Guhl stresses the importance of the local population, as he states in his opening epigraph: ‘The stories of the explorers tend to forget that the formulation of their theories and results owe much to the teachings they received from local people who helped them to find what they were looking for, as well as to live in and navigate the rainforests. They [thus] deserve to be remembered and recognised as knowers and drivers of science.’

As we move forward in this work that undoubtedly will surely be commented on profusely next year during the celebration of Wallace’s bicentenary, we should consider the ‘Amadeus effect’, also referred to by Professor Páramo in his Prologue as ‘[the one that counteracts the Matthew effect and restores] the qualities that count as imperfections’. Páramo asks: ‘Why hasn’t the Amadeus effect acted effectively enough on the image we have [or, I would say, don’t have] of Wallace?’

An essential detail for understanding the less visible foundations of the joint representation of Darwin and Wallace in the history of science emerges from Guhl’s chapter VIII entitled ‘A delicate arrangement at a distance’ (pp. 261–275). In it, the author recounts the consolidation of the historical moment of the joint exposition of Darwin and Wallace’s contributions at the Linnean Society in London in July 1858. A letter from Charles Lyell and Joseph D. Hooker to Linnean Society Secretary Joseph Bennett, signed in London on Wednesday 30 June 1858 and written to introduce the

original texts of Darwin and Wallace (mentioned on page 272 of Guhl's work) is critical to understand this 'delicate arrangement'. Consequently, it might be appropriate to include in eventual future editions of *En busca del origen* 'the respective works in the order established by Darwin's advocates' that underpinned Darwin's precedence, as referred to by Lyell and Hooker in 1858 (pp. 45–46). These words constitute clear evidence of the delicate—and most elegant—British arrangement that accounted for the remarkable coincidence of this scientific finding in the 19th century.

And, on scientific coincidences, I should mention the results of Guhl's own field research on island biogeography. Even though he refers to Wallace's work *Island life* (1880) in chapter IX, entitled 'The Wallace line and the biogeographical ordering of the planet' (pp. 277–299), he discreetly omits his own experience analysing a series of marine and terrestrial vertebrates and invertebrates in the company of his colleagues Henry von Prael and Max Grögl, and with the participation of students and professors from several Colombian universities. The work resulting from this study was entitled *Gorgona* (Von Prael, Guhl & Grögl 1979) and allows me to recall a statement I coined more than a decade ago on the occasion of a joint session between the National Academy of Medicine and the Academy of Exact, Physical and Natural Sciences in Bogotá to commemorate the second centenary of Darwin's birth: 'if the English naturalists—referring to both Darwin and Wallace—had not already propounded the model of evolution with other types of isolated specimens, Von Prael, Guhl and Grögl would have had at hand one of the most informative biological series to propose it' (Gómez Gutiérrez 2009).

Before concluding this review, I would like to emphasise the graphic quality of Guhl's *En busca del origen*, as it contains a significant number of original photographs and drawings by Wallace, as well as a high quality colour reproduction of Wallace's original folding map of the Rio Negro and its tributaries. It also boasts beautiful illustrations by Camila Pizano (in future editions it would be useful to include an index with their respective titles, especially that of the magnificent illustration on the cover which recalls the engravings of the French travellers of the 19th century).

The Colombian Academy of Exact, Physical and Natural Sciences, in association with Universidad de los Andes and Villegas Editores, has thus produced an illuminating reference work of the history of two travelling naturalists in Colombia: Alfred Russel Wallace and Felipe Guhl.

Alberto Gómez Gutiérrez FLS

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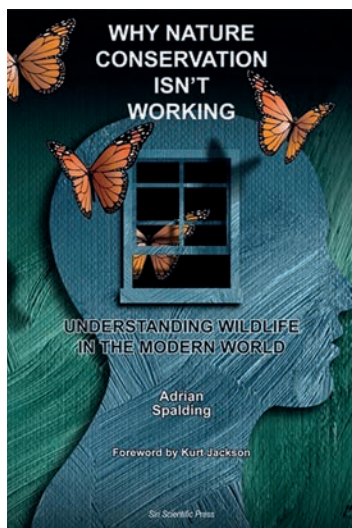
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Why Nature Conservation Isn't Working: Understanding wildlife in the modern world

Adrian Spalding

160pp, Siri Scientific Press
2021 (Paperback)
ISBN 9781838152840
Col. illust. £14.99



This book looks at species as a feature of human perception, whereby animals assume more than their physical form; they live within their habitats that are defined by historical context, a past and an evolutionary future which impacts on both human and non-human existence. Man, in dealing with animals, expects them to conform to stated norms and makes no allowance for them to demonstrate freedom of action; Spalding quotes an example of the Common Rough Woodlouse that shows individual responses (shy vs less shy individuals) to being handled in different ways (Tuf *et al.* 2015, see p. 14).

There then follows much discussion about the concept of species which is central to nature conservation, but which is becoming blurred because of how many of us (particularly in urban settings) perceive wildlife either from the windows of our homes or the TV screen through natural history programmes; either way, man is losing his real time connection with the natural world. The point of nature conservation is to prevent organisms from becoming extinct and give them an evolutionary future, whilst allowing them a present day existence, but the greater our severance of that link the less successful nature conservation will be.

After the last Ice Age there was movement of species requiring an understanding of what are native and non-native species (see Chapter 3, p. 43); together with what are the consequences of migration to wildlife existence and to adaptation to radically changing landscapes (we are all familiar with the peppered moth) as a result of man's industrial activity.

Habitats that experience a change in environmental pressures, certainly as a result of human activities, often permit increased biodiversity, where those creatures that are able to adapt, exploit and evolve, do so. This can be

viewed in a positive way; climate change may prove to be such an example. Humans are part of nature; could climate change then be perceived as a natural event? Perhaps we could see how wild species move and adapt rather than think of wildlife loss as being negative (Thomas 2017) (see p. 61). Controversial and unpopular certainly, but not so much so when we look at how man values wildlife.

Throughout time, man has often used animals as tokens of success, such as trophy hunters, and even in the 21st century there are still individuals who not only shoot animals for sport, but also individuals that provide them...for handsome prices. John Hume owns the world's biggest rhino ranch where he breeds the animals to be shot; supplying the hunters with 200 rhinos per year. The cost of shooting a rhino is \$350,000; an elephant or lion \$50,000, etc. Supporters argue that in this carbon-footprint age, trophy hunters pay higher fees than ordinary tourists, so there are fewer of them with a lower combined environmental footprint. Some would argue that this makes nature conservation economically viable with nature as natural capital.

Current wildlife nature conservation is bias; larger animals are preferred over 'lesser' species, including plants, because of their appearance on TV screens. It is not to say that the plight of blue whales or snow leopards should not be conserved, it is merely that more people are aware of these species because of their familiarity onscreen than, say, the rare micro-moth *Stigmella aceris* found feeding on Field Maple—less well known but should be equally valued.

This publication aims to remind people that perhaps, sometimes, we should sit back and let wildlife go free with minimal interference, financially supporting the colonisation of old and new habitats and allowing the less conspicuous (but just as important) species a chance to thrive.

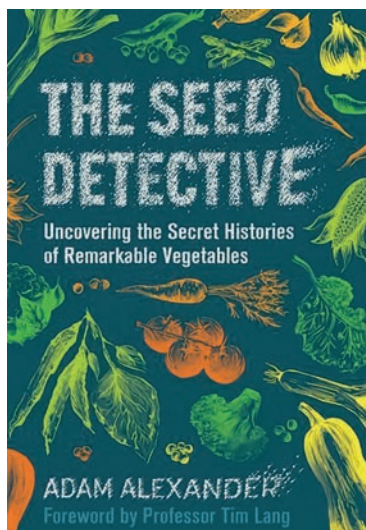
Undoubtedly this publication will be viewed with a mixture of support, awe and objection, but in all cases it will elicit a response from the reader, and that in itself is a powerful outcome. It can be read by lay and professional conservationists, though the latter would probably find the technical language easier to comprehend. In my opinion the book would lend itself to the inclusion of a few carefully chosen coloured photographs of some of the lesser known species mentioned so that the reader gets to see the organism for real. I thoroughly enjoyed the book, though it was challenging in many places and demanded a second read; no bad thing. The author is a passionate, hands-on and knowledgeable individual who presents a balanced series of arguments that never fails to elicit a response—well worth the money.

Stephen Hoskins FLS

The Seed Detective: Uncovering the secret histories of remarkable vegetables

Adam Alexander

320pp, Chelsea Green
Publishing
2022 (Hardback)
ISBN 9781915294005
Col. illust. £18.99



An enthusiastic vegetable gardener committed to saving seed for resowing, delving into the history of some of the almost 500 varieties in his own seedbank, brought back memories of my mother collecting seed from her gardens for as long as I can remember. Alexander's engaging stories about the varieties he came across in his international travels, meeting archetypal grannies at market stalls selling vegetables he had never seen before, and bringing back their seeds to bulk-up in his garden in Wales, lead the reader gently into the history of the spread of food plants around the world. Using tales of a small number of species and varieties, he weaves a wider story and sounds warnings about market domination by monocultures. These are, he shows, vulnerable to changed conditions, whether to climate or emerging pathogens.

For his seed bank, Alexander also carefully nurtures old, almost lost, commercial varieties for these are also worth preserving: for flavour, for socio-cultural reasons and as an insurance against catastrophe.

Alexander questions the ethics of patenting strains derived from 'Folk Varieties', but advantages of modern plant breeding that does not result in exploitation or dangerous uniformity are also illustrated. The difficulty of producing asparagus plants that are exclusively male, and the advantages they bring, intrigued me. Even relatively familiar stories of the domestication of the large number of varieties of *Zea* contain detail that is new to me, especially memorable by being tied to personalities in specific places growing strains that have become closely adapted to unique environmental needs.

The theme of adaptability of open-pollinated varieties is pervasive, although the difficulties of maintaining a variety that 'breeds true' in his garden when other varieties are grown nearby is seen as a problem for his seed bank, although recognised as a source of variability for plant breeders.

Some assertions are problematic. It was certainly not Darwin who challenged the 'misconception that evolution is always slow and gradual'. While I do not dispute that 'market gardens and small-scale horticultural enterprises ... can generate ... ten times as much [net income per acre] as large-scale intensive horticulture', I do wonder whether the comparisons are based on growing in comparable locations; it is unfortunate that this is not supported by a reference to allow proper consideration. Other reference notes are apt and complement the personal narratives.

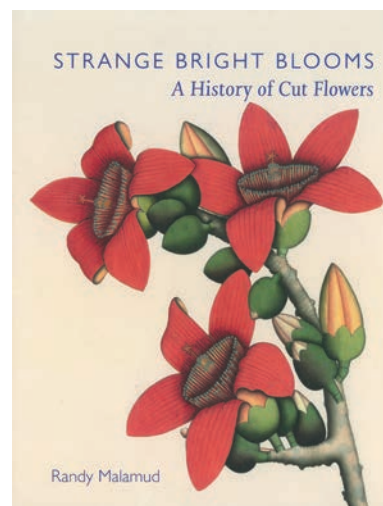
Gardeners committed to traditional methods will identify Alexander as a kindred spirit; anyone interested in the historic origins of their food will find ample intelligible stories. Academic students of crop history will find little new, but could probably use some of the stories to animate teaching. (The review copy provided was a proof paperback lacking an index, although the contents list indicates one.)

A. M. Lucas FLS

Strange Bright Blooms: A history of cut flowers

Randy Malamud

324pp, Reaktion Books
2021 (Hardback)
ISBN 9781789144017
Col./bw illust. £29



Virginia Woolf's Clarissa

Dalloway sets off to buy the flowers herself, while Alice bemoans the Tiger-lily's inability to talk, only to be told by the lily that lilies can talk 'when there's anybody worth talking to'. Three hundred pages later, the roses of York and Lancaster are blended in 'a botanically credible metaphor' at the end of a rambling chapter on the 'Flowers of war'. The dust jacket does admit this is a 'picaresque, unpredictable ramble' of a book, and so it is, starting with chapters headed 'Flowery writing' and 'Flowery art'—note the repeated adjective is 'flowery'—before meandering on to 'Flower sellers' and 'Flowers, gender, sexuality, race and class' and concluding in 'Flowers of war'.

Flowery writings are gathered from T. S. Eliot, Emily Dickinson, Philip Larkin and Antoine de Saint-Exupéry, for example, while among the illustrated flowery art is nestled

Adolf Hitler. Art includes sculptures as well as paintings and exemplars include works by Georgia O'Keefe, Odilon Redon, David Bomberg, Diego Rivera and even Banksy. In the chapter about flower sellers, Professor Malamud rages about the working conditions (including forced prostitution) of present-day workers in the flower farms of Africa, and even manages to get worked up about the 'Brexit upheaval' disrupting the supply chains for cut flowers sold in supermarkets. Enjoy locally-grown flowers, he rightly argues, although a suggestion about favouring 'cowslips (if you live in Crewe)' is most inappropriate. This, and a few other lapses, indicate that the author's botanical knowledge is imperfect.

The tone of *Strange Bright Blooms* is presaged when, after quoting several sentences from the *European Garden Flora's* definition of a flower, Malamud interjects: 'I'll stop there. No disrespect, but I'm glad I'm not writing this kind of analysis (and I presume you're glad you are not reading it). [...] Flowers are magnificent, and flower language should be eloquently resonant, which is what I'll aspire to provide here.' Ramble if you wish; you will learn and see things you had not hitherto known or seen, but this is not an eloquent history of the craft of floristry.

Charles Nelson FLS

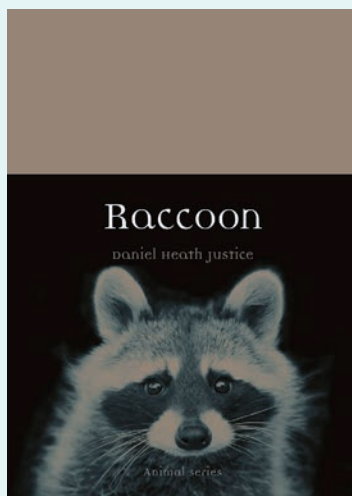
Raccoon

Daniel Heath Justice

214pp, Reaktion
2021 (Paperback)
ISBN 9781789144246
Col./bw illust. £12.95

In another strong addition to the Reaktion Animal series, Daniel Heath Justice's *Raccoon* provides a lively and engaging survey of the natural and cultural history of raccoons, with an aim to outline the place of the animal in the world today. Particular attention is paid to the representation of the raccoon in the cultural imagination.

With reasonable length chapters and an easy writing style, most of us found that we read *Raccoon* in only one or two sittings. The chapters were introduced with initial anecdotes which gradually expanded to enable readers to access the increasingly complicated ideas. This, together with over 100 illustrations throughout the main text, made the book



feel very accessible. As with all volumes in this series, the illustrations are high quality and well chosen.

Each of the six chapters centres on a particular theme—natural history, Indigenous history, Black history, hunting by class and geography, raccoons in popular culture, raccoons as pets and pests, and a final epilogue which focuses on futuristic depictions and sci-fi representations. The author’s academic expertise has shaped the book that has been written and Justice writes about Black and Indigenous history in particular with eloquence and insight. We were particularly struck by the way in which the Indigenous stories were privileged throughout the discussion of the emergence of colonial science perspectives on the species in chapter two. Chapter three was by far the longest chapter and presented the place of the raccoon in Black history from Zip Coon to the ‘coon hunt’. We imagine that this chapter, with its powerful illustrations, could be particularly useful for teaching, but also commend Justice’s choice not to publish images that are overtly racist.

At times, there seems to be an assumption that readers are familiar with raccoons and as such, some of the more biological information which would help to contextualise the animal, its characteristics and behavior was notably absent. Some small snippets of natural behaviour do appear throughout some of the chapters and are of special interest to the reader—for example, the explanation that washing food is part of a raccoon’s process for identifying food. A few more additions of this nature would help to center the raccoon in the narrative. This in part comes down to the balance of the content which favored representations of the raccoon rather than its natural history. The book also understandably has a bias towards stories from the United States and there are cultural references that would only resonate with particular audiences. There is also a notable lack of comparison with other ‘tricksters’—for example crows, foxes, and especially surprisingly, little discussion of the raccoon dog. The book would also have benefitted from further quantitative data analysis from an environmental history perspective (there was only one map) and further discussion of the culture of cuteness that raccoons have benefitted from, largely owing to social media. Similarly, while notions of masculinity and individuals like Davy Crockett were looked at in some depth, the discussion of femininity and the fur trade for example could have been expanded.

These minor criticisms should not, however, detract from the book’s insightful analysis, and *Raccoon* represents superb value for money. It will be a useful addition to the literature not just for animal and environmental historians but also cultural historians, conservationists and general readers with an interest in raccoons. The Animal History Group book club agreed in giving *Raccoon* a 5-star rating, and with Justice’s assertion that ‘*Raccoon* cuts a quirky trail through

the complex histories and increasingly global impacts of this inquisitive outlaw species’.

**Reviewed by members of the Animal History Group Book Club:
Mariana Arellano, Stephanie Howard-Smith, Elle Larsson, Felicity
McWilliams, Lee Raye and John Stokes**

Iconotypes: A Compendium of Butterflies & Moths, or: Jones’s *Icones* Complete. An Enhanced Facsimile

Introduced by Richard I. Vane-Wright (in partnership with Oxford University Museum of Natural History)

687 pp, Thames & Hudson
2021, hardback
ISBN 9780500024324
Col. illustr. £65



Compared with today, the practitioners and luminaries of the Age of the Enlightenment were less conscious of the distinctions between the sciences and the arts, living as they did in a broad intellectual and social milieu. Many, indeed, had an interest in both domains. The publication of ‘Jones’s *Icones*’, a compendium of annotated paintings of butterflies (and some moths) by William Jones (1745–1818), introduced to us through the efforts of Richard I. Vane-Wright, reminds us of the value of high quality illustrations of Lepidoptera from the time of the Enlightenment to the present day. Such value is twofold: one is the aesthetic appeal of coloured illustrations of attractive and much loved insects; the other, more intellectually significant, is scientific.

Jones’s 1,292 individual paintings of 856 species are reproduced in the body of this substantial work, together with modern commentaries. These images, which are preceded by a foreword and an introduction, are interspersed with a series of essays by various authors. The book is concluded with an article on Jones’s legacy, listings of his ‘iconotypes’ and the sources of the specimens illustrated, references to the essays, and an index to the butterfly species in the *Icones*. Originally, Jones’s paintings were bound into seven volumes—six of

them including illustrations made of specimens in various collections, the seventh being composed of those copied from the work of others.

Quite apart from the artistic merit and visual attractiveness of Jones's illustrations, worthwhile as they are in their own right, is their scientific value—especially their importance in taxonomy. Early taxonomists, notable among them Carl Linnaeus and especially his illustrious Danish student Johan C. Fabricius, often based their species descriptions on illustrations alone when they lacked access to actual specimens. Any such illustration, termed an iconotype, is a representation of an actual specimen, that specimen, whether or not still in existence, remains the name-bearing entity of the species—the 'type'. Besides this usage, Jones annotated the painting of each specimen with core data to include the plate number, the name of the species and its describer, the source collection and the country or region of origin. He also added a brief Latin description. To each of Jones's plates there is presented a modern tabulated summary including, critically, the current identification of the species represented. In many cases historical and biological notes are provided.

Jones was an Enlightenment scholar and polymath—a wine merchant, skilled in Hebrew and Greek and, above all, a naturalist and natural history artist. Informative texts by Paul Smith (Foreword) and Dick Vane-Wright (Introduction) provide details of Jones's life and his association with leading figures in the London natural history fraternity, including the key collectors. They also explain the way in which the paintings and other archival material found their way to their current home in the Oxford University Museum of Natural History. Vane-Wright also notes that besides the value of his paintings as iconotypes, Jones revised parts of Linnaeus's classification of the butterflies thanks to the close observations he made when executing his illustrations. It is evident from the drawings he made preliminary to his paintings that Jones had a detailed knowledge of wing veins, and he used these and other anatomical structures to make revisionary changes to Linnaeus's work.

The interspersed essays include two by Alberto Zilli, the first of which is on the early study of Lepidoptera, even dating back to the Neolithic. In the second, which describes activities of artists and natural historians, particularly in the 18th century, there is included a fine explanation of the intellectual development of lepidopteran classification from Linnaeus through Fabricius, noting the importance of Jones's illustrations to this effort. Arlene Leis deals with collecting Lepidoptera in the 18th and 19th centuries and Stefanie Jovanovic-Kruspel writes about the art of painting butterflies, noting that such illustrations often 'straddle the border between art and science'—an observation certainly true of William Jones's work. And we are brought painfully up-to-date

by Francisco Sánchez-Bayo who charts the appalling decline in populations of Lepidoptera globally since the time of Jones, and especially over recent decades.

It is evident from the drawings he made preliminary to his paintings that Jones had a detailed knowledge of wing veins, and he used these and other anatomical structures to make revisionary changes to Linnaeus's work.

This compendium is said to be 'introduced' by Dick Vane-Wright—a modest descriptor of a project undertaken over many years of dedication and care and brought to fruition by an evident admiration for William Jones's achievements and significance as a naturalist, illustrator and contributor to butterfly taxonomy. Current knowledge, however much it has been advanced, is based on the efforts of those long gone—some, like William Jones, whose impact stands out so strongly. We should thank the contributors, institutions and the publishers for providing the biological community with access to Jones's remarkable illustrations and the perspective on his contribution to butterfly taxonomy.

Malcolm Scoble FLS

Books for Review

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

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

Burlington House, Piccadilly, London W1J 0BF

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

Members

Please join us in welcoming the following new members to the Society (elected Oct 2022):

FELLOWS

Mr Joseph Alexander
Dr Geethakumari Amma
Dr Johnson Antonysamy
Dr Jeb Bevers
Prof. Timothy Birkhead
Mr Gregory Bulmer
Ms Angela Chua
Mr Alexander Cloke
Prof. Martin Collins
Ian Coyle-Gilchrist
Mr Mihail Bogdan Danielescu
Chirlomez
Dr Partha Das
Dr Wayne Davies
Dr Wesley Dean
Mrs Mansi Dutt
Miss Angelena Efstathiou
Dr Sin Fai Eric
Mr Andrew Fleming
Dr Ewan Flintham
Dr Satheesh George
Ms Pamela Golden
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Mr Gareth Hughes
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Associate Prof. Lee Learn-Han

Mr Gabriel Leite
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Dr Malcolm Maclean
Mr Robert Mansergh
Ms Jennie Martin
Ms Susan Medway
Dr Peter Mellon
Mr Richard Moore
Mr Gareth Morgan
Dr Olusola Oduoye
Ms Christine Petersen
Dr Alen Alex Philip
Dr Balakrishna Pisupati
Dr Anneke Prins
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Dr Hemen Sarma
Ms Beverlee Seelig
Dr Nisha Singh
Dr Deepu Sivadas
Dr Michael Song
Dr Infanta Spence-Lewis
Dr Upasna Srivastava
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Ms Annette Buckle
Mr Evan Davies
Mr Jack Davies
Mr Tsvetoslav Georgiev
Mr George-Alexandru Popovici

Lives remembered

William Lawrence Banks CBE (7 June 1938–14 June 2022)

Born in Northwich, Cheshire in 1938, Lawrence Banks CBE was elected a Fellow of the Linnean Society in November 1994—a longstanding Fellow of almost 28 years. Although a banker by profession, he had, together with his wife Elizabeth, managed Hergest Croft Gardens since 1988, a 70-acre garden in the Welsh Marches established by the Banks family over 127 years ago. In managing the gardens, Lawrence and Elizabeth continued the tradition of adding newly-introduced plant species, a feature of the garden since 1900, which now contains more than 5,000 rare trees and shrubs, and over 90 Champion Trees.

Lawrence came from a long line of ‘passionate plantsmen’, including Richard William Banks (banker by profession, and a notable geologist and naturalist), and William Hartland Banks, who established Hergest Croft Gardens in 1895. In an online post, Lawrence’s school friend Hugh Johnson, author of *Trees* (2010), rather beautifully summed up the lineage: ‘Dirty fingernails run in the family.’

Lawrence was formerly the Treasurer of the Royal Horticultural Society (RHS) and had also served as Vice President for the organisation. (Elizabeth herself had been the first woman to hold the position of RHS President, from 2010–2013.) We are incredibly grateful for his keen support of the Society, particularly during the Fellows’ fundraising campaign in 2008, and as a sign of respect for his services to the Society and to the natural world, Lawrence was elected a Fellow *honoris causa* in 2014.

Mark Beeson (31 May 1954–March 2022)

Described as ‘an important creative voice in Devon for more than four decades’, ecologist Mark Beeson sadly passed away earlier this year aged 67. Born in British Columbia, Canada in 1954, Mark emigrated to Devon in the UK when he was five years old.

Mark studied Classics at the University of Oxford, but would ultimately shift to human sciences (which would allow him to study the relationships between biological and social sciences).

In 1981 Mark studied blue, or diademed, monkeys (*Cercopithecus mitis*) on Malawi’s Zomba Plateau, which were being shot in order to protect pine plantations—the monkeys would strip bark from the trees, and were seen as a threat to the plantations and their economic value. His research outlined that there was no threat, and that similar circumstances elsewhere had proven that actually removing the monkeys was of more detriment to the trees. In 1986, Mark was awarded an MPhil in primate ecology from the University of Exeter.

Alongside his ecological studies, Mark was a theatre director, playwright and poet. His observational research in Malawi, and love for Dartmoor, would lead to his establishment of the Manaton and East Dartmoor Theatre (MED Theatre) in 1989. He wrote over 40 plays and radio plays, including *The Badgers* (1980) and *The Primates* (1985), and was the theatre’s artistic director for 33 years. His plays were often ecologically driven, pulling in inspiration from local wildlife and folklore, and brought together many generations of the Dartmoor community. The MED Theatre also developed a playwriting programme for local schools in 1991, with support from Arts Council England, to inspire the next generation of writers. With regard to poetry, Mark’s 1980 poem ‘The Walk’ won an award in the Arvon/*Observer* poetry competition, and in 1999, ‘The Blue Monkeys of Zomba’ was read out in part on BBC Radio 3. He also co-founded *The Dart* magazine, of which he was editor from 1981 to 2001.

Mark was elected as a Fellow of the Linnean Society in October of 1988. Described by friend Tom Greeves as ‘gentle, patient and modest’, Mark was a huge part of the community and culture in Dartmoor.

Vernon Heywood (24 Dec 1927–17 Sept 2022)

Sadly, in September we lost one of our Honorary Members, Professor Vernon Heywood. An extremely highly-regarded taxonomist, Vernon specialised in medicinal and aromatic plants, and the conservation of wild relatives of plants around the world, particularly those in the Mediterranean. His work on conservation methodologies, particularly *in situ* conservation, and germplasm of economically important wild species, was renowned. Throughout his career he would serve as a consultant on biodiversity and conservation for

many organisations, government bodies and NGOs.

Vernon read for his BSc at the University of Edinburgh, his home city, and would undertake two trips to Spain during this initial period as a botanist, the first of which saw him captured by bandits! (He would go on to publish one of his first papers, 'Through the Spanish Sierras' in 1948.) Throughout his time as an undergraduate he was periodically employed as a 'potato inspector' in Scotland, for the Crown. In 1953 Vernon gained his PhD at the University of Cambridge for his thesis on the mountain flora and vegetation of Spain.



Vernon took up a post as lecturer at the University of Liverpool in 1955, and less than 10 years later would be awarded the Chair in Botany in 1964. His 1963 work with Peter Hadland Davis, *Principles of Angiosperm Taxonomy*, would aid in redefining the role of modern botanical taxonomy with its multidisciplinary approach to systematics. Moving to the University of Reading, he would become Professor of Botany and Head of Department until 1987.

After this, a lifelong love and dedication to the purpose and future of botanic gardens would lead Vernon to found and become director of the IUCN Botanic Gardens Conservation Secretariat (later Botanic Gardens Conservation International, or BGCI). During his time as Chief Scientist for IUCN, Vernon directed projects on centres of plant diversity, and extinction rates in tropical forests, amongst many others.

Elected as a Fellow of the Linnean Society in November of 1951, Vernon would later be awarded the Society's Linnean Medal in 1985. With nearly 30,000 citations, he was a towering figure in both modern botanical thinking and conservation, and was generous with his knowledge and time.

Christine Watlington (19 Dec 1957–26 April 2022)

Born in the leafy county of Devon in England, Christine would develop a lifelong passion for nature and conservation. A mainly self-taught artist, both she and her first husband Barry Phillips would train and illustrate for the Royal Botanic Gardens, Kew, in the 1970s.

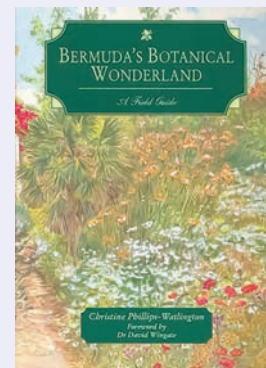
In 1977, Christine relocated to Bermuda, where she would rapidly become involved with nature and conservation organisations such as the Bermuda Botanical Society, and supported restoration projects on Nonsuch Island (once a

Tropical Research Station for the New York Zoological Society) and Paget Marsh. She married for a second time to Tom Watlington.

Christine also delivered lectures on Bermuda's ecology, and contributed to *The Bermudian* for many years, providing illustrations for the nature column 'Naturally Speaking'. In 1996, she published what is perhaps her best-known work, Bermuda's *Botanical Wonderland: A Field Guide* (1996).

Reviewed as possibly 'the most comprehensive botanical record on the flora of Bermuda since [Nathaniel Lord] Britton's work of 1918', it is now considered a classic in terms of the flora of the area.

With her connections to both Kew and the Royal Horticultural Society, Christine became a Fellow of the Linnean Society in February of 2006. Her dedication to the natural world was ever present, with a guide to medicinal and edible plants sadly left uncompleted. An exhibition of her paintings was shown in May at the Masterworks Museum of Bermuda Art, in celebration of her life and work.



Deaths Reported to Council

Mr Iain Aylwin
 Mr Mark Beeson
 Mr David Budworth
 Dr John Burton
 Mr James Chambers
 Mr Frank Dobson
 Prof. Theodore Hymowitz
 Mr Brian Prichard
 Prof Howard Thomas
 Mrs Christine Watlington
 Dr Philip Willenbrock

Fellows *honoris causa*

Mr William Banks
 Prof. Vernon Heywood

Season's Greetings

from all at the Linnean Society of London



Christmas closure

23 Dec 2022–2 Jan 2023

New Year opening

Due to planned rail strikes, the building will be closed to visitors from 3 January–13 January 2023, re-opening on 16 January.

During this time, our library will also be closed for essential house-keeping and will re-open to readers on 17 January.

Please keep an eye on our website for updates:

www.linnean.org

Thank you for your continued support of the Society, and we look forward to welcoming you back in 2023.



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