

Remembering Wallace



We celebrate Alfred Russel Wallace on the bicentenary of his birth.

A fossilized tree trunk marks the grave of Alfred Russel Wallace, in the suburb of Broadstone, Poole (Dorset, UK), where he lived in his final years. Wallace is forever fated to be compared with his more famous co-discoverer of natural selection, Charles Darwin, and their final resting places are indicative of their differing reputations. Wallace, who had to make his living as a naturalist-collector, lies in an obscure suburban cemetery, whereas Darwin – the gentleman scientist – rests alongside other distinguished historical figures in Westminster Abbey in London.

Alfred Russel Wallace was born on 8 January 1823 near Usk, now in Wales but in a region historically disputed with England. His parents were financially struggling members of the lower middle class, and money woes would accompany Wallace for all of his life. When Wallace was three years old, the family moved from this Welsh rural idyll to the town of Hertford, immediately north of London. Wallace was educated in the local schools there until the age of 14, when he became an apprentice surveyor, working with his brother. This work took him all over the countryside of England and Wales, giving him the opportunity to collect plants and insects. Particularly important was his meeting with another young amateur entomologist, Henry Walter Bates (subsequently the discoverer of Batesian mimicry), during Wallace's brief period as a schoolmaster in Leicester. Bates and Wallace encouraged one another's enthusiasm for collecting, until they managed to get funding for a joint collecting expedition to the Amazon, departing in 1848. During the course of their preparations, Wallace and Bates read Darwin's *Beagle* journal, as well as key works by Humboldt, Lyell and Malthus that were so influential in Darwin's own thinking on evolution.

Wallace spent over three years exploring and collecting in the Amazon, shipping specimens back to Europe when possible to obtain further funds. Although the trip was invaluable in shaping Wallace's thinking, it ultimately ended in disaster when a large proportion of

his collection was lost in a fire during his own voyage back. However, what did survive made valuable additions to museum collections and were enough to cement Wallace's reputation as an important collector. But being a collector was still looked down on by museum professionals, in a snobbery that has plagued field-based sciences over many decades: it was only after an intervention from the president of the Entomological Society Edward Newman, in his 1854 presidential address, that Wallace and Bates were elected members of the society.

Wallace then set off on his career-defining expedition in 1854 to the Malay Archipelago. He spent eight years collecting on these islands, and the location was crucial to the development of his ideas about evolution and biogeography. Part of the region is now known to biogeographers as Wallacea, and the 'Wallace Line' (a term coined by Thomas Henry Huxley based on Wallace's observations) describes the boundary of the Asian and Australasian zoogeographical zones. During this voyage, he started corresponding with Darwin, initially in 1855 as a collector who could provide Darwin with specimens, but by 1857 on the intellectual question of how species and varieties differed from each other. Although it is tempting to view Wallace's famous 1858 letter to Darwin outlining natural selection as coming out of the blue, it should therefore be seen in the context of a developing (albeit remote) relationship.

When he received Wallace's letter, Darwin asked his friends Joseph Hooker and Charles Lyell – who were aware of his decades of secret theorizing about natural selection – what he should do. They hastily arranged for both Wallace and Darwin's papers to be read together at the Linnaean Society, establishing joint precedence. Wallace was not involved in this, but mainly because it would not have been possible to communicate with him at such a distance. He never complained that he had been treated unfairly, and once Darwin published *On the Origin of Species* the following year, Wallace seemed content to remain forever in his shadow.

Although this has been debated over the decades, the predominance given to Darwin is probably not unfair, given his known unpublished work on natural selection prior to 1858

and his subsequent production of the definitive account. However, it is worth noting Wallace's much more precarious position in life in terms of financial security and social and professional connections. He spent a further five years on his Indonesian trip, collecting in the name of both money and science, and so would not have been in a position to write a book. His celebrity increased on his return, both in response to his shared role with Darwin and to his Malay Archipelago and subsequent books, but he was never quite as ensconced in the establishment as was Darwin. Indeed, it was Darwin who – over twenty years later – was instrumental in persuading prime minister Gladstone to grant Wallace a government pension to ease his financial woes.

Alongside natural selection, Wallace will be best remembered for biogeography, something that his field experience made him especially suited to appreciate. He also had many other interests, which posterity has viewed variably. He thought at length about human evolution and, although extremely liberal in his day, many of his ideas (as with those of many of his contemporaries) do not stand well today; a particular low was choosing to present a paper to the overtly racist Anthropological Society of London, instead of the less problematic Ethnological Society. His liberal worldview encouraged him to resist Francis Galton's early ideas on eugenics, with Wallace thinking that education, equality and women's emancipation were the best ways of improving humanity's condition. He was also very interested in land nationalization and conservation, shaped partly by a meeting with John Muir on a trip to the USA. Conversely, his enthusiasm for spiritualism and vehement opposition to vaccination do not enhance his scientific reputation.

By the time he died at the age of ninety, Wallace was well known as a distinguished, if somewhat maverick, scientist. Since then his reputation has regularly needed reinvigorating, and his bicentenary is an opportune moment to fly the flag for Wallace once again.

The biographical details in the editorial are taken from Peter Raby's *Alfred Russel Wallace: A Life*.

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