

Henry Walter Bates: guilty until proven innocent?

GEORGE BECCALONI

*Curator of Orthopteroid Insects &
Director of the A. R. Wallace Correspondence Project,
Life Sciences Department,
The Natural History Museum,
South Kensington,
London SW7 5BD, UK
E-mail: g.beccaloni@nhm.ac.uk*

Introduction

"Extraordinary claims require extraordinary evidence" Carl Sagan, 1980

In a recent article in the *Journal of the History of Biology* entitled "A Delicate Adjustment: Wallace and Bates on the Amazon and 'The Problem of the Origin of Species'" historian John van Wyhe accuses Henry Walter Bates (1825 - 1892) of lying several times in private letters and also very publically in the preface to his famous book *The Naturalist on the River Amazons* about one of his and Alfred Russel Wallace's motives for undertaking their Amazon expedition in 1848. In addition van Wyhe accuses Bates of forging a quotation from a letter that Wallace sent to him in the late 1840s. van Wyhe suggests that Bates lied because he was looking for a job at the time and that he hoped the 'reflected glory' of being associated with Wallace (who was relatively famous at that time due to his co-publication of the theory of natural selection with Charles Darwin in 1858) would get him noticed.

The allegedly forged quote

Let us first consider the supposedly forged quote, which was cited by Bates in the preface to the first (1863) edition of his book. Here it is in context:

"In the autumn of 1847 Mr. A. R. Wallace, who has since acquired wide fame in connection with the Darwinian theory of Natural Selection, proposed to me a joint expedition to the river Amazons, for the purpose of exploring the Natural History of its banks ; the plan being to make for ourselves a collection of objects, dispose of the duplicates in London to pay expenses, and gather facts, as Mr. Wallace expressed it in one of his letters, 'towards solving the problem of the origin of species,' a subject on which we had conversed and corresponded much together."

van Wyhe rightly points out that it is very improbable that Wallace would have used the phrase "problem of the origin of species" in a letter written in the late 1840s, since this phrase only came into use after it was coined by Thomas Henry Huxley in 1860 (van Wyhe, 2014). So what is going on?

In the year that Bates' died, his friend and biographer Edward Clodd published a quote from a letter written by Wallace which had somewhat similar wording to the 'suspect' quote. It appeared in a memoir of Bates published in a reprint of the first edition of Bates' book (Clodd, 1892). The quote was taken from a letter dated 11 October 1847 that Wallace sent to Bates and which is now held in the Wallace Family Archive at the Natural History Museum,

London (see <http://www.nhm.ac.uk/research-curation/scientific-resources/collections/library-collections/wallace-letters-online/348/348/T/details.html>). Due to this being the only phrase in any extant letter from Wallace to Bates that is similar to the quote in Bates' preface, van Wyhe suggests that the 'forged' quote was derived from it. Curiously, Clodd also cited Bates' 'forged' quote in his memoir, no doubt thinking that the two quotes originated from different letters. He also published both in his 1897 book *Pioneers of Evolution From Thales to Huxley*.

So why did Bates write "towards solving the problem of the origin of species" rather than "with a view to the theory of the origin of species" in his preface? The simplest explanation is that he made an honest mistake - perhaps he wrote it from memory, accidentally using Huxley's phrase which was no doubt well known to him.

Deliberately 'forging' the quote, as van Wyhe suggests, would seem a peculiar and pointless thing to do, since the 'real' phrase "with a view to the theory of the origin of species" is not substantially different from the supposedly 'forged' phrase "towards solving the problem of the origin of species". If Bates had cited the 'real' quote instead it would not have significantly altered what he was saying. Here is part of Bates' preface with the 'real' quote from the 1847 letter in place of the supposedly 'forged' quote:

"...the plan being to make for ourselves a collection of objects, dispose of the duplicates in London to pay expenses, and gather facts, as Mr. Wallace expressed it in one of his letters, 'with a view to the theory of the origin of species' a subject on which we had conversed and corresponded much together."

In his 1905 autobiography *My Life*, Wallace, who had by then obtained the original manuscript of his 1847 letter to Bates from Clodd, only included the 'real' quote, suggesting that the quote published in Bates' preface is indeed erroneous and did not originate from another letter. Wallace says:

"After referring to a day spent in the insect-room at the British Museum on my way home [from a trip to Paris in 1847], and the overwhelming numbers of the beetles and butterflies I was able to look over, I add: 'I begin to feel rather dissatisfied with a mere local collection; little is to be learnt by it. I should like to take some one family to study thoroughly¹, principally with a view to the theory of the origin of species. By that means I am strongly of opinion that some definite results might be arrived at.' And at the very end of the letter I say: 'There is a work published by the Ray Society I should much like to see, Oken's 'Elements of Physiophilosophy.' There is a review of it in the Athenaeum. It contains some remarkable views on my favourite subject—the variations, arrangements, distribution, etc., of species.'"

Did Bates lie about the "higher purpose" of his and Wallace's Amazon trip?

Bates returned to England from his 11 year expedition to Brazil in 1859 and van Wyhe (2014) believes that during the next three or so years he lied (made false statements with a deliberate intent to deceive) about the "higher purpose" of his and Wallace's Amazon expedition on at least four occasions. These alleged fibs in chronological order are as follows:

1) In a letter to Charles Darwin: van Wyhe (2014) says "The earliest occasion I have found when Bates claimed that the Amazon expedition had a higher purpose than collecting was in a, now lost, letter to Darwin in 1860." In his reply dated 22 November 1860 Darwin remarked

"...I have heard of your zealous exertions in the cause of Natural History. But I did not know that you had worked with high philosophical questions before your mind. I have an old belief that a good observer really means a good theorist & I fully expect to find your observations most valuable." (see <http://www.darwinproject.ac.uk/letter/entry-2993>).

2) In a letter to botanist Joseph Hooker dated 19 March 1861: Bates remarked "I have accumulated a vast amount of material during my eleven years' travels on the Amazons, and during the whole time directed my attention to the modifications of species and kindred subjects..." (Clodd, 1892).

3) In the preface to the first edition of Bates' 1863 book: the relevant passage of which has already been quoted above. The book was published between 1 and 14 April 1863 (see <http://www.darwinproject.ac.uk/entry-4022>).

4) In a letter from Bates to an unidentified correspondent dated 16 April 1863: in this Bates remarks "There is nothing very remarkable in persons going out to make collections in new countries for sale; what (I venture to say) ^{merits some attention} about Mr Wallace, and in a very far less degree of myself, is that his main object -- which he never lost sight of -- was the study of the objects collected with a view to philosophical conclusions. For this end we ^{have both} retained complete collections of certain large groups for private study." [words in superscript are contemporary insertions] (see <http://www.nhm.ac.uk/research-curation/scientific-resources/collections/library-collections/wallace-letters-online/4258/4370/T/details.html>)

So is there any evidence which proves that any of the above statements are indeed lies, or for that matter that Bates ever lied about anything? The answer is no: van Wyhe (2014) did not provide any evidence that any of these statements are lies and no other author ever appears to have claimed that Bates lied about anything. Bates was in fact regarded very highly by Hooker, Darwin and his other friends and colleagues judging from the comments in the obituary of him published in the *Proceedings of the Royal Geographical Society* in 1892 (Vol. 14, pp. 245-257). For example Joseph Hooker wrote "Darwin's appreciation of him was whole-hearted and all-round, and Bates' first visit to Down was marked with a white stone in his host's memory, as in mine, and often recurred to by us."

Unable to prove that any of Bates' statements are lies, van Wyhe attempts to cast doubt on Bates' honesty by arguing that he "exaggerated" the number of new species he collected in the Amazon in the preface to his 1863 book. van Wyhe states that "Bates certainly did exaggerate from 324 to 'no less than 8000'" and he concludes "Just as Bates exaggerated the number of new species identified in his collections, he apparently also exaggerated the aim and purpose of his (and Wallace's) expedition." However, van Wyhe does not appear to have considered the possibility that Bates' figure was based on extrapolation rather than merely being an exaggeration. Bates believed that he had collected a total of 14,712 species and at the time of writing his preface he knew that taxonomists in the British Museum had studied 477 of these and had determined that 324 of them were new to science. Knowing as Bates did, that 68% of the species in the subsample of his collection which had been studied were new, he probably simply calculated that his collection of 14,712 species should therefore contain some 10,004 new species. That he actually claimed that 'only' 8,000 were new shows that he was being conservative in his estimation, rather than 'exaggerating'. Bates should, however, have probably qualified his statement that "...8000 of the species here enumerated were new to science..." (Bates, 1863) and said something like "...8000 of the species here enumerated are probably new to science..."

Even though there is no evidence that Bates' lied about the "higher purpose" of the trip and he should therefore *not* be accused of having done so, that doesn't necessarily mean that he did not lie. There are, however, a number of reasons which suggest that he was indeed telling the truth.

The first is: why someone who was as intelligent and concerned about their reputation as Bates appears to have been, would lie about something as significant as another person's motives for doing something and then publish this untruth in a public forum? It would surely have been risky enough lying in private letters to prominent figures such as Darwin and Hooker, but to lie about another person's motives in a text that this person was bound to soon read seems like professional suicide. Surely Bates would have realised that there was a significant risk that Wallace would contradict his account in public or to influential peers in private, and that this might result in serious damage to Bates' reputation? This must have been the last thing that Bates would have wanted, especially as he was looking for employment at the time.

So how *did* Wallace react to reading Bates book? We are fortunate that the letter Wallace wrote to Bates after reading the first 1863 edition of the book survives (see <http://www.nhm.ac.uk/research-curation/scientific-resources/collections/library-collections/wallace-letters-online/4125/4142/T/details.html>). Wallace was clearly impressed and delighted with the book and concludes his letter by saying "Thanks for the kind manner in which you have mentioned my name." Since the only time that Wallace's name was mentioned by Bates in anything other than a brief and factual way was in the passage from the preface cited above, it is very likely that it was this particular mention that Wallace was referring to. Wallace therefore endorsed what Bates said about him, rather than complaining that what Bates said was inaccurate.

As van Wyhe (2014) points out, Bates' statement about the "higher purpose" of his and Wallace's trip in the preface of his book was immediately highlighted by reviewers and many others who discussed the expedition in a myriad of publications. van Wyhe (2014) says "...the passage with the Wallace quotation is not like other passages in the book. It was the dramatic mission statement for the voyage. It had already become, as it still is over a century later, the most frequently quoted line from the entire book." Wallace therefore must have come across dozens, if not hundreds, of instances of this "mission statement", yet he never once (as far as we know) suggested that it was incorrect. He had ample opportunity to comment on it: for example he reviewed books in which it received prominent mention, including the 1868 edition of Lyell's famous work *Principles of Geology* (on page 276) (see <http://people.wku.edu/charles.smith/wallace/S146.htm>). Interestingly, it even appears in the introduction (by G. T. Bettany) to Ward, Lock & Co.'s 1889 edition of Wallace's own book *A Narrative of Travels on the Amazon and Rio Negro*. Bettany states that Wallace "... proposed to Mr. Bates a joint expedition to the Amazons, one of the objects, in addition to the collection of natural history specimens, being to gather facts, as Mr. Wallace expressed it in one of his letters to Mr. Bates, 'towards solving the problem of the origin of species,' a subject on which they had already conversed and corresponded extensively." This statement remained unchanged in further printings of this work. We know that Wallace provided Bettany with information for his introduction (see <http://www.nhm.ac.uk/research-curation/scientific-resources/collections/library-collections/wallace-letters-online/4415/4686/T/details.html>), so why if he knew that Bates' statement was incorrect did he not ask for it to be removed?

Did Wallace say that his Amazon trip had a "higher purpose"?

So why, van Wyhe (2014) asks, did Wallace never explicitly state that one of his reasons for going to the Amazon was to investigate transmutation (as evolution was then called)? A simple explanation is that perhaps he never thought he needed to spell this out since the "mission statement" derived from Bates' preface was very widely known.

What Wallace did explain in print was that he became deeply interested in the subject of species transmutation after reading the book *Vestiges of Creation* (Chambers, 1844) in 1845 and that he had pondered this topic whilst in the Amazon. He evidences the first fact using letters to Bates written between 1845 and 1847, including the one discussed earlier. In his 1905 autobiography *My Life* he says that these letters demonstrate "...that at this early period, only about four years after I had begun to take any interest in natural history, I was already speculating upon the origin of species, and taking note of everything bearing upon it that came in my way." He goes on to say "These extracts from my early letters to Bates suffice to show that the great problem of the origin of species was already distinctly formulated in my mind; that I was not satisfied with the more or less vague solutions at that time offered; that I believed the conception of evolution through natural law so clearly formulated in the 'Vestiges' to be, so far as it went, a true one; and that I firmly believed that a full and careful study of the facts of nature would ultimately lead to a solution of the mystery."

The earliest indication that Wallace gives that he was pondering species transmutation whilst in the Amazon is the following mention in his 1855 'Sarawak Law' paper². He says: "The great increase of our knowledge within the last twenty years, both of the present and past history of the organic world, has accumulated a body of facts which should afford a sufficient foundation for a comprehensive law embracing and explaining them all, and giving a direction to new researches. It is about ten years [*i.e.* 1845] since the idea of such a law suggested itself to the writer of this paper, and he has since taken every opportunity of testing it by all the newly ascertained facts with which he has become acquainted, or has been able to observe himself."

In a 1903 article (<http://people.wku.edu/charles.smith/wallace/S599.htm>) Wallace explains the history of his interest in transmutation particularly succinctly and clearly. He writes "Ever since I had read the *Vestiges of Creation* before going to the Amazon, I continued at frequent intervals to ponder on the great secret of the actual steps by which each new species had been produced, with all its special adaptations to the conditions of its existence. My paper of 1855 [the 'Sarawak Law'] had merely shown that each new species was in some way dependent on the circumstance that there had been always, in the very same locality, a closely allied species, of which the new species seemed to be a modification. I myself firmly believed that it was a direct modification of the pre-existing species through the ordinary process of generation, as had been argued in the *Vestiges of Creation*; but as I could not yet see any mode or process by which the change could be effected, and the characters of the new species fixed and rendered permanent by natural law, I left it to be inferred till such a law should be discovered. But less than three years later the long-sought law [natural selection] suddenly dawned upon me, and, strange to say, was suggested to me by the very same work which had suggested the same law to Mr. Darwin sixteen years earlier [*i.e.* Thomas Malthus' *An Essay on the Principle of Population*]."

Conclusion

The evidence presented and evaluated above leaves little doubt that Wallace hoped to investigate transmutation during his Amazon expedition (1848 - 1852) as both Bates *and* Wallace stated. Curiously, van Wyhe (2014) remarked several times that the only evidence for the claim that the Amazon trip had a "higher purpose" is the 'forged' quotation published in Bates' preface³, but this is clearly incorrect as has been shown.

Even though Wallace *was* endeavouring to investigate transmutation whilst in the Amazon, it was in the Malay Archipelago in 1858 that he finally discovered what is believed to be the primary mechanism driving the evolution of life on Earth: natural selection. This idea was, of course, published jointly with Charles Darwin in August of that year (for more information see Beccaloni, 2013). The only indication Wallace gave in print during the early 1850's that he had been investigating transmutation in the Amazon was in a paper read at a meeting of the Entomological Society of London in 1853 and published in 1854. In this article Wallace remarked "All these groups [of butterflies] are exceedingly productive in closely allied species and varieties of the most interesting description, and often having a very limited range; and as there is every reason to believe that the banks of the lower Amazon are among the most recently formed parts of South America, we may fairly regard those insects, which are peculiar to that district, as among the youngest of species, the latest in the long series of modifications which the forms of animal life have undergone." There is little doubt that he is referring to transmutation here, especially considering what we know about his interest in the subject. His conclusion to this paper highlights the massive setback his research suffered due to the sinking of his ship on the way back from the Amazon:

"...I venture to hope that if my observations are wanting in detail and in precision as to the exact species to which they apply, it may be imputed, not to want of accuracy on my part, but to the loss of a large portion of my notes and collections during my return voyage to this country. I trust, however, that in the absence of much information on the habits of exotic insects, my remarks, however imperfect, may not be altogether valueless."

Acknowledgements

I am grateful to Ahren Lester, Charles Smith, Jim Costa, Andrew Berry, Ted Benton, Peter Raby and John van Wyhe for discussing the issues in this article with me.

Endnotes

1. Referring to this statement in Wallace's letter van Wyhe (2014) says "Wallace asked about collecting a family of insects for study *in England*. [original emphasis]" and he goes on to say "Whatever it was, it could be studied by collecting only a single insect 'family of moderate extent' in England. Could this really refer to an intention to discover how all new species on earth appear?" Why van Wyhe assumes that Wallace meant only those species of an insect family which occur in England is unclear and he is almost certainly incorrect. Certainly Wallace does not state that he means only the species of a family in England, France, the Amazon, or wherever. It is much more parsimonious and plausible to take Wallace's statement at face value - that he simply meant the species of an entire family of insects (*e.g.* Papilionidae (swallowtail butterflies), Cetoniidae (flower chafer beetles) *etc.*), not just those species found in a limited region such as England. Note that the Papilionidae and Cetoniidae are two of the insect families that Wallace was most interested in, at least whilst he was in the

Malay Archipelago, and that in the UK these families contain only 1 and 5 species respectively.

2. Note that in *My Life* (1905) Wallace says of his 1855 paper: "My paper written at Sarawak rendered it certain to my mind that the change had taken place by natural succession and descent—one species becoming changed either slowly or rapidly into another."

3. van Wyhe (2014) states:

- "For over a century it has been believed that Alfred Russel Wallace and Henry Walter Bates set out for the Amazon in 1848 with the aim of 'solving the problem of the origin of species'. *Yet this enticing story is based on only one sentence* [my emphasis]. Bates claimed in the preface to his 1863 book that Wallace stated this was the aim of their expedition in an 1847 letter."
- "...when in fact Bates' letter [the letter to Bates] is the only source of this information."
- "...no other contemporary evidence suggests that their trip to the Amazon was meant to solve how species evolved or even to study evolution of any kind."
- "And this quotation is our *only* [original emphasis] source for a very specific if irresistibly appealing version of events."

References

Bates, H. W. 1863. *The naturalist on the River Amazons: A record of adventures, habits of animals, sketches of Brazilian and Indian Life and aspects of nature under the equator during eleven years of travel*. London: John Murray.

Beccaloni, G. W. 2013. Alfred Russel Wallace and Natural Selection: the Real Story. [<http://downloads.bbc.co.uk/tv/junglehero/alfred-wallace-biography.pdf>]

Chambers, R. 1844. *Vestiges of the natural history of creation*. London: John Churchill.

Clodd, E. 1892. Memoir [of Henry Walter Bates] In: Bates, H. E. *The naturalist on the River Amazons. A record of adventures, habits of animals, sketches of Brazilian and Indian life, and aspects of nature under the Equator, during eleven years of travel. With a memoir of the author, by Edward Clodd*. London: John Murray, pp. xvii–lxxxix. [see <http://www.biodiversitylibrary.org/bibliography/13535#/summary>]

Clodd, E. 1897. *Pioneers of evolution from Thales to Huxley: With an intermediate chapter on the causes of arrest of the movement*. New York: Appleton & Co.

Lyell, C. 1868. *Principles of geology or the modern changes of the Earth and its inhabitants considered as illustrative of geology*. 10th edition, 3 volumes. London: John Murray.

Malthus, T. R. 1826. *An essay on the principle of population; or, a view of its past and present effects on human happiness; with an inquiry into our prospects respecting the future removal or mitigation of the evils which it occasions*. 6th edition, 2 volumes. London: John Murray.

Wallace, A. R. 1854. On the habits of the butterflies of the Amazon valley [a paper read at the ESL meetings of 7 Nov. and 5 Dec. 1853]. *Transactions of the Entomological Society of London* 2(8): 253-264.

Wallace, A. R. 1889. *A narrative of travels on the Amazon and Rio Negro, with an account of the native tribes, and observations on the climate, geology, and natural history of the Amazon valley*. Second Edition. Minerva Library of Famous Books, Vol. 8. London, New York, & Melbourne: Ward, Lock & Co.

Wallace, A. R. 1903. The dawn of a great discovery (my relations with Darwin in reference to the theory of natural selection). *Black and White* 25: 78-79.

Wallace, A. R. 1905. *My life: A record of events and opinions*. London: Chapman & Hall.

van Wyhe, J. 2014. A delicate adjustment: Wallace and Bates on the Amazon and "the problem of the origin of species". *Journal of the History of Biology* [see a preview here: <http://link.springer.com/article/10.1007%2Fs10739-014-9378-z>]

Citation

Please cite this article as: Beccaloni, G. 2014. Henry Walter Bates: guilty until proven innocent? Version 1.1 (April 2014) <<http://wallacefund.info/henry-walter-bates-guilty-until-proven-innocent>>