

Essay Review

Alfred Russel Wallace on Man:
A Famous 'Change of Mind' - Or Not?

Charles H. Smith

*Library Public Services, Western Kentucky University
Bowling Green, Bowling Green, KY 42101, USA*

MARTIN FICHMAN, *An Elusive Victorian: The Evolution of Alfred Russel Wallace*, Chicago / London: University of Chicago Press, 2003, 382 pp., \$40.00 / £28.00.

MICHAEL SHERMER, *In Darwin's Shadow: The Life and Science of Alfred Russel Wallace: A Biographical Study on the Psychology of History*, New York: Oxford University Press, 2002, 422 pp., \$35.00.

ROSS A. SLOTTEN, *The Heretic in Darwin's Court: The Life of Alfred Russel Wallace*, New York: Columbia University Press, 2004, 602 pp., £26.50.

For well over a hundred years, most observers have adopted the view that Alfred Russel Wallace (1823-1913) underwent a 'change of mind' in the 1860s regarding the applicability of the theory of natural selection to the evolution of humankind's mental processes and capacities. This surmise, however, has never been carried on more than weakly inferential grounds, especially: (1) the fact that Wallace became an increasingly vocal spiritualist and socialist; (2) his lack of referral to humankind as an exception in the evolutionary process in his famous 'Ternate' natural selection essay of 1858 (Wallace 1858); and (3) the otherwise apparent great similarity of his views with those of Darwin. But negative evidence and correlations in time do not necessarily make an accurate model – and, it should be noted, Wallace himself once reported in print, in the Preface to his book *On Miracles and Modern Spiritualism* (Wallace 1875), that he felt he had undergone no such 'change of mind'.

In recent years, a re-examination of Wallace's place in history has been underway that has entered into the task of testing the reliability

of such current assumptions about his work. Included in this literature are biographies (Hughes 1997; Wilson 2000; Raby 2001; Bryant 2003, plus the three discussed here), anthologies (Smith 1991; Camerini 2002; Berry 2002; Smith 2004), this reviewer's Wallace website (Smith 1998; 2000-), natural history-related studies (Quammen 1996; Daws and Fujita 1999; Knapp 1999; Rice 1999) and various analytical projects (Smith 1992/1999; Moore 1997; Claeys 2000; Clode and O'Brien 2001; Coleman 2001; Fichman 2001; Garwood 2001; Jones 2002; Wallace/Toledo-Piza Ragazzo 2002; Bueno H. and Llorente B. 2003; Cremo 2003; Pels 2003; Stack 2003; Smith 2003-2004; Smith in press). The starting points for these efforts have been greatly various, as there are a number of different reasons for the interest. The most obvious one is the concurrent increase in our awareness of biodiversity: Wallace, more than any single other person in history, was devoted to the full range of subjects that make up that study. But there are other threads of attraction as well: (1) over the last fifteen years much has been added to our knowledge of Wallace's bibliographys (2) his ideas on evolution remain relevant to today's discussions in that field, (3) his 'socialist libertarian' views on society are intriguing for their intelligent relation of seemingly disparate logics, (4) the recent efforts to explore Mars have, unpredictably, drawn attention to his pioneering exobiology studies, (5) spiritualism and the paranormal remain attention-grabbing topics, and (6) Wallace's extended defenses of the 'little guy' relations with Darwin, and biting social criticism have increasingly made him a counterculture hero. With all these things going in his favor, one can only wonder why it has taken so long for attention to focus.

The plain fact of the matter, however, is that very few people who are aware of Wallace's signal contributions to the natural sciences and other subjects have taken the time to study carefully the full range of his thought as expressed in his extensive corpus of writings, nor attempted to assess these on their own terms, independent of the looming figure of Darwin. This is to an unfortunate extent true even of many of his biographers. The three books that are the subject of this review do not fall into this category, however, and are instructive not only for the contributions they have made to Wallace studies, but for their greatly differing approaches to their subject. We begin with the most interesting and original of the three, which features a whole new theory of Wallace's world view.

Earlier, piecemeal, researches have promoted the view that Wallace gave up on certain aspects of natural selection as he became familiar with ideas connected to either, or both, spiritualism and socialism.

However, neither the historical chronology of Wallace's life and writings, nor the contents of the latter, when examined in their sum detail, can sustain this interpretation. What does emerge from a close study of Wallace's life is the picture of a man who even as a fourteen year old had begun to concern himself with fundamentals – basic principles regarding human rights and how to think productively – and who soon applied these ideas to a consideration of social and natural change. Abandoning theories of first causation from the outset, he nevertheless allowed his thought process free reign to drift in a direction invoking final causes, including ones that might influence the ongoing evolution of either, or both, natural and social systems.

An important element of this *Bauplan*-leaning naturalism was Wallace's early rejection of the principle of utility (his position is fully stated in two or three of his pre-1858 writings, a fact that largely has been ignored), ostensibly because this seemed to imply that adaptations came about in a pre-ordained, rather than an integral, or possibly incidental, fashion. In 1855 he produced an essay entitled 'On the Law Which Has Regulated the Introduction of New Species' (Wallace 1855) that all but stated outright his belief in evolutionary phylogenesis, but none of the arguments he used in his discussion involved anything resembling natural selection-like concepts. *After* this essay, in 1856, he published another study, 'On the Habits of the Orang-Utan of Borneo' (Wallace 1856), which again states in the plainest terms his rejection of the utility principle. Consider this short excerpt from that work:

Do you mean to assert, then, some of my readers will indignantly ask, that this animal, or any animal, is provided with organs which are of no use to it? Yes, we reply, we do mean to assert that many animals are provided with organs and appendages which serve no material or physical purpose. The extraordinary excrescences of many insects, the fantastic and many-coloured plumes which adorn certain birds, the excessively developed horns in some of the antelopes, the colours and infinitely modified forms of many flower-petals, are all cases, for an explanation of which we must look to some general principle far more recondit than a simple relation to the necessities of the individual. (Wallace 1856, 30)

Thus, from the fact that in 1858 he came upon a system of thinking – natural selection – that *did* invoke a role for utility, we should hardly conclude without a good deal more evidence that the progression of his thought between 1855 and that date was a smooth one. Evidence of this sort has not been forthcoming. In early 1858 Wallace finally realized that the key to understanding adaptations was to recognize their *necessary* utility value. Before this time he had thought that

'necessary' had to correspond to 'predetermined', but now he saw that all that was needed to make the model work was to pose that selection worked in many directions at once, shaping outcomes probabilistically, according to the mix of opportunities and constraints afforded by population variation and the environment, and not needs that were established before the fact. Otherwise put, competitive advantage was achieved stochastically, with particular adaptations being neither pre-ordained, nor merely an incidental byproduct of the process.

Still, Wallace had by this time spent many years in the field among semi-primitive and primitive peoples, and one surmises he anticipated that his new theory, clever as it was, nevertheless could not account for the existence of higher human attributes such as mathematical and artistic abilities. So the Ternate essay contains no mention of humankind: he simply left consideration of the problem for some later time when its final cause might become apparent to him. But, probably to his considerable surprise, the manuscript draft he sent to Darwin was published right away, leaving all to believe he was a 'Darwin supporter'. To the length he ventured in the essay this was largely true, but now all he could do was to look more earnestly for a mechanism that both explained the development of the higher human attributes, and did not conflict with the already sensible explanations provided by natural selection. He soon came upon spiritualism, the theory of which turned on a posed natural process that fit this bill perfectly. After a thorough investigation, he accepted its logic and doctrine in a manner complementing his earlier conclusions, thereby completing his theory of evolution – no 'change of mind' ever being involved. His later increasing involvement with social issues no more nor less represented applications of that theory, which was, in both its antecedent and later thinking, in good part final-causes inspired.

This is the basic picture that Martin Fichman is trying to relay through his ground-breaking analysis of Wallace's thought process. Although this reviewer has also been promoting this interpretation of Wallace's personal evolution for some years (see Smith 1991; 1992/1999; 1998; 2000-), to Fichman goes the distinction of being the first to present the model in full social historical context. To do so he has employed a contextualist approach, providing a loosely chronological and socio-biographical accounting of Wallace's life and studies that frequently, and productively, deviates to consider particular issues and associations. Appropriately, Fichman concentrates on Wallace's social studies, since it is these, his more celebrated contributions to natural science notwithstanding, that

represent the real core of Wallace's evolutionary model. Within the latter, land nationalization and socialism represented Wallace's prescriptive vehicles for leveling the societal playing field in such a way that the average person, less distracted by the pressures of basic survival, might enjoy the benefits of additional, productively-directed, leisure time. In theory this greater freedom would leave individuals better able to take stock of their options and make more intelligent decisions serving a general social progress. Spiritualism, meanwhile, was to provide an ethical and moral incentive designed to convince the individual that such decisions were not only societally, but also personally, meaningful.

Some who read Fichman's analysis might feel that he is not being critical enough of what he terms Wallace's 'theism'. Perhaps, but until the full bearing of that theism is revealed there is little point in debating whether it might have any scientific or societal relevance. Meanwhile, who is to say Wallace was a theist at all: he understood what he termed 'the domain of spirit' to be just another part of nature, obeying observable and testable rules of order that were in close analogy to that domain within which natural selection worked. Whether spiritualism as generally understood bears any relation to proven natural processes remains a hard sell, but the more general issue of the possible existence of yet unidentified complex final causes is a subject that continues to attract real interest: witness the plethora of writings on the anthropic principle and the gaia hypothesis, both of which may be counted in no small measure as legacies of Wallacian thought. This larger issue is not one that is likely to be resolved any time soon, and for this reason Fichman's study has a significance extending far beyond its treatment of Wallace alone.

Michael Shermer's biography expands on studies he carried out in the early 1990s that led to his doctoral dissertation on Wallace. While neither as attractively written nor as tightly researched or presented as the most recent Wallace biography that preceded it, Peter Raby's *Alfred Russel Wallace, A Life* (Raby 2001), it yet contains some elements that recommend it both to those interested in Wallace *per se*, and to the method and philosophy of historical analysis in general.

Dr. Shermer is a well known writer and lecturer who is both Founder and President of The Skeptics Society, and the Editor of its main publication, *Skeptic Magazine*. That such a person should have a deep and abiding interest in Wallace, a spiritualist celebrated for his unorthodox ideas on a variety of evolutionary and social subjects, is itself a curious matter. One might expect upon picking up his volume to find a scathing attack on what many have criticized as Wallace's

pseudoscientific positions; instead, the biography is characterized by an admirable level of restraint in this direction, and presents a fairly sympathetic picture of the man and his ideas. It is arguably to Shermer's credit that he generally does not allow himself to make too much of Wallace's idiosyncracies, at the risk of being oblivious to the larger picture: Wallace was, after all, a major figure in Victorian science. It is seemingly more in everyone's interest to try to tease out the nature of his genius than it is to irreverently tear it to shreds. Views on Wallace are changing, and while Shermer himself has so far shown a reluctance to extend himself beyond the status quo, he at least tacitly acknowledges that the man's life and work are still a study in progress, and in most cases refrains from judging his subject in the manner of foregone conclusion. Sometimes this is also a weakness in his treatment, however, as Shermer is not a naturalist by training, and is therefore, like Raby before him, unable to provide much new insight into the present day value of Wallace's most important ideas in the natural sciences.

Indeed, Shermer's major contribution in the biography has less to do with Wallace himself than it does with the method of historical analysis. He has adopted Frank Sulloway's matrix model of birth order as a major influence on the development of genius, and, in a practically Galtonian fashion, lavishes much effort on developing a statistical portrait of what he terms Wallace's 'heretic' personality. His methods in this respect (for example, in asking several Wallace scholars, including this reviewer, to perform a statistical personality inventory on his subject) are quite interesting, if not altogether convincing. They speak of a desire to put the study of history on a sounder, more 'scientific', footing, one that quantifies and distills the relative influences of self and environment on individual personalities. Yet it seems to me that the conclusions one can draw from such endeavors in a historical context are rather meagre, at least as compared with those bearing on the study of personality *per se*. Further, Wallace in particular, absolutely fearless in his thought process and willingness to publically expose its products to any and all, remains no more nor less so whether one feels statistically justified in defining him a 'heretic' thinker. What has Shermer really 'explained' here? Whereas Fichman is engaged in producing a functioning social history, Shermer appears to have a hidden agenda more relatable to historiography than to the history of science.

The author of the final of this trio of studies, Ross Slotten, seems at first glance the least likely to be prepared to tackle so difficult a subject as Wallace. The cover notes of the book describe him as 'a

family practitioner in private practice in Chicago' and 'a Wallace enthusiast [who] has retraced a number of Wallace's travels in Indonesia'. He is in fact an amateur, and this is apparently his first significant publication of any kind. On the other hand, perhaps we have a right to hope on this basis that of the three writers Slotten's efforts might be the least distracted by prior agenda, his over six hundred pages of text notwithstanding.

It is therefore with pleasure I feel I can report that Slotten's study of Wallace – obviously a labor of love – deserves to take its place among the standard biographical treatments of his subject. Though not without its serious weaknesses (as below), its story has generally been well researched and presented in detail; those who might have worried initially about superficiality of treatment will discover fifty-two pages of explanatory notes in the work containing over one thousand referrals to original and secondary sources and archival materials. One gathers that Slotten strayed a good distance from Chicago to investigate material bearing on all aspects of Wallace's life and work. The result is a very well-balanced, largely fair, nicely written, and detailed accounting of Wallace's activities, especially those taking place *after* his return from the Malay Archipelago in 1862 (about two-thirds of the biography is set during this period).

This last point is one that especially should be taken. At present, Wallace is known among the wider public, if he is known at all, largely for his activities in the Amazon and Indonesia over the period 1848-1862 (including, of course, his discovery of natural selection). But he lived on for more than fifty years after his return, and just about the entire period was filled with matters of both personal and intellectual interest. Slotten has done a great service by looking into the events of this long period in greater detail than has anyone else to date, and as a strictly biographical accounting this will serve to get more people involved in asking the right kinds of questions about Wallace's activities, and his motives for them.

By the same virtue, however, one can identify some unfortunate faults relatable to this level of detail. First, and in order to provide thematic content for such a long read, Slotten falls into just a bit too much unsubstantiated tale-spinning here and there. Thus, he plays a good deal on what he views as Wallace's falls from disfavor as related to his spiritualism, socialism, and other 'eccentricities', while avoiding reaching for what is really essential in these matters: just why, in an intellectual sense, Wallace steered the course he did. Although Slotten does a good job at providing basic historical context when this is helpful, he is never really able to reveal the essentials of Wallacian

thought. This is strictly an exterior view of the man – and one in which the traditional image of ‘Wallace the outsider’ is unfortunately allowed to monopolize the spotlight to the detriment of dispassionate analysis. One is able to find in these pages a good deal on what, where, and when Wallace did things, but not so much on *why* he did them; that is, how his intellectual process provided motivation for his famous disregard for the external pressures on his life.

Further, there are instances in which the detail relayed seriously gets in the way of an accurate view of the greater picture. In particular, Slotten’s depiction of the chain of events within the critical 1864-1869 period of Wallace’s life – the ‘change of mind’ period – is deeply flawed and unfortunately will lead readers to some dubious conclusions. To defend this statement we need to look at this matter in a bit more detail.

It is Slotten’s basic position that the break-off of a marital engagement with a certain Miss Leslie around October 1864 put Wallace in a funk from which he did not recover until early or mid-1866 (when he married his eventual wife). This supposedly temporarily distracted him from his scientific studies; meanwhile, in July 1865 he began his program of seance attendance and study of spiritualism. Slotten implies that the two events were intimately related – yet he largely avoids altogether the question of why Wallace was philosophically attracted to spiritualism, and remained so to his dying day. The problem is that his analysis of these events is based on incomplete research, and as a result contains several notable miscues.

To begin with, it can be shown that it is not the case that Wallace’s involvement in scientific matters was seriously affected by his breakup, Slotten’s suggestive evidence from personal letters notwithstanding. After October 1864 and running through May 1865 he was present and contributing to the six scientific societies he kept up with at the same average rate he had been over the thirty month period preceding October 1864. Moreover, between October 1864 and June 1865 no fewer than twelve of his writings/commentaries reached print – just about his career standard. It may be true that for the time being he was distracted enough not to keep up the same earlier rate of systematics work on birds, but it may also be that he had by that point largely exhausted his efforts in that direction: he would even eventually only turn out two more medium-sized (thirty-six and twenty-nine pages) systematic works on birds, though after 1866 his systematics studies on insects would extend to several hundred pages.

More importantly, Slotten’s research did not reveal the important fact that Wallace’s contributions to society meetings abruptly stopped

in June 1865 and did not re-commence until, at the earliest, late June of the following year. Further, only a paper on the systematics of pigeons (which might well have been written in early 1865) and two short letters to the Editor of the magazine *Reader* were published by him during this entire period. Over the full length of Wallace's post-Malay Archipelago life – again, more than fifty years – there is no other hiatus in his publishing activities that approaches the size of this gap (the next nearest being one in the mid-1880s when he experienced a serious eyesight affliction). During this period he didn't even produce a paper for delivery at the annual British Association for the Advancement of Science meetings held in the summer of 1865 (despite the fact that he did attend, and had given papers – sometimes more than one – at the meetings held in 1862, 1863 and 1864, and 1866 and 1867).

This suspension of professional activity likely had very little or nothing to do with the breakoff of his engagement in October 1864 as Slotten concludes; the timing of events doesn't make sense. Why would Wallace have waited a full nine months before showing any production-related signs of distress? Moreover, Raby, Shermer, and Slotten himself have concluded that Wallace began socializing with his eventual wife Annie in early 1865 (they married on 5 April 1866); thus it was exactly during what one would surmise to be a generally happy period that Wallace took a time out.

It nevertheless seems pretty clear that this 'time out' period did center on Wallace's investigation of spiritualism – both in terms of his attending various seances, and his digestion of the literature on the subject. In his consideration of this matter, Slotten is guilty of poor researching of sources. He is seemingly under the impression that Wallace's 'The Scientific Aspect of the Supernatural' (Wallace 1866) was first produced as a specially prepared pamphlet for private distribution to a limited number of his friends in November 1866. Actually, it has been known since 1991 that it was first published in *The English Leader* in installments in August and September of that year, and, as a contemporary printed notice proves, could not have been completed any later than in early July. Slotten also appears to believe that Wallace began to digest the literature of spiritualism 'after a year of experimentation' (p. 243); that is to say, sometime in the fall of 1866. This is clearly not the case, since the original writing of 'The Scientific Aspect of the Supernatural' predates that time by several months, and this work is filled with copious references to the existing literature. Further, Slotten implies that 'The Scientific Aspect of the Supernatural' was put together only after Wallace finally

encountered, in November 1866, a spiritualist medium named Agnes Nichol who could produce convincing seance effects in his own home. Obviously, considering the above, this is not true; further, it is significant to point out that the text of the pamphlet version he distributed is essentially the same one that appeared serially months earlier.

These last facts are critical to understanding the whole dynamic. We thereby conclude that Wallace: (a) sent around to his friends an argument favoring the study of spiritualism that did not rely on any of his own personal experiences at seances, and (b) may well have sent this out even before he had actually witnessed any significant number of convincing effects (i.e., as produced by Nichol from November 1866 on in his own quarters). Slotten does not note, and apparently doesn't realize (or realize its significance), that the final section (entitled 'Notes of Personal Experience') of 'The Scientific Aspect of the Supernatural' that was printed in Wallace's 1875 collection *On Miracles and Modern Spiritualism*, was added only at that later time and did not appear in the original work. Seemingly, had Wallace become aware of the new and convincing evidence before the pamphlet was issued he would have delayed its publication and/or distribution. And even if at the very last moment he *had* become so aware and let its issuance proceed anyway, we can conclude from either eventuality that through November 1866, at least, Wallace was prepared to argue in favor of spiritualistic studies on purely philosophical grounds, and that he did not become an outright convert until after that date.

This kind of not seeing the forest for the trees has plagued Wallace studies since the beginning. It is a good deal more consistent with the facts to believe that Wallace's coming to spiritualism was a natural progression that in the more general sense arrived as a result of his lifelong teleological leanings regarding natural processes, and in the more immediate sense as a response to his ongoing conviction that natural selection could not explain the reasons for, and bearings of, higher consciousness. Through the late 1864 and 1865 period he had produced several writings (most notably 'On the Progress of Civilization in Northern Celebes' [Wallace 1865a], 'Public Responsibility and the Ballot' (Wallace 1865b), and 'How to Civilize Savages' [Wallace 1865c]) that mused their way through subjects concerning how intelligent conviction could be applied to the organization – that is to say, *evolution* – of society. Possibly through his sister's influence, as Slotten presumes, he began to digest spiritualist writings around June 1865 and quickly concluded that this

body of knowledge had potential in that direction: both to the extent of contextualizing higher consciousness within an evolutionary setting, and providing personal guidance toward a moral life. All of this, however, depended on whether the phenomena supposedly indicative of the existence of a 'spirit realm' and such were actually legitimate. So he did what any good scientist would do: he began to examine the available evidence.

At first he approached the question guardedly by investigating simultaneously writings on the subject and any seance events he could get himself invited to. But until he was able to find a medium who could produce effects under his complete control (i.e., in his own residence) he held back on his conclusions, admitting only that previously recorded pieces of evidence by others suggested the subject was worthy of real study. Ostensibly, this was the object of 'The Scientific Aspect of the Supernatural', and his eventual distribution of the pamphlet version to his friends in November 1866. Within six months of that date Miss Nichol's seances in particular had convinced him once and for all of the legitimacy of the belief, and he not only became a full convert on that basis but began to look for an opportunity to present his conclusions to the public. He was forestalled by the preparation of his book *The Malay Archipelago* (Wallace 1869a) in late 1867 and 1868 (it reached print in early 1869), but eventually he found an appropriate venue for making his plea in public in the famous *Quarterly Review* text of 1869.

The nominal subject of Wallace's *Quarterly Review* essay (Wallace 1869b) was a review of new editions of two of Charles Lyell's most influential geology texts, *Principles of Geology* and *Elements of Geology*. It was in these volumes that Lyell finally fully endorsed Darwinian ideas on evolution, and integrated these into his understanding of earth history. Wallace took this opportunity not only to salute Lyell for his broad-mindedness, but also to review fully the subject of natural selection and its relation to the progress of life on earth. I believe it is no coincidence that he undertook the latter effort at this specific time, as the context allowed him both to state in detail his continuing support for the basic doctrines of evolution and natural selection, and to introduce his personal elaboration upon it.

There is yet much to be done before we can claim we fully understand Wallace's world view; still, the upward trend of interest in his life and writings as exemplified by all three authors' efforts here is a healthy sign for our society. It shows that we have not lost our fascination with turning over intellectual stones. Although at its worst rash and willing to accept sources of evidence of dubious character,

Wallace's was yet one of the nineteenth century's most splendidly creative minds. It is well to remember in thinking of his productivity that not every idea as initially stated necessarily succeeds in its original form, and in the case of Wallace we have plenty of instances in which either or both the content or philosophical bearing of his ideas were eventually adopted – both in his own time, and afterward. The question we should be asking is whether more such revelations might lie buried in his many thousands of pages of writings, or in the general perspective he adopted that gave birth to them.

References

- Berry A. (ed.), 2002, *Infinite Tropics: An Alfred Russel Wallace Anthology*, London / New York: Verso.
- Bryant W., 2003, *Naturalist in the River: The Life and Early Writings of Alfred Russel Wallace*, iUniverse.com.
- Bueno A., Llorente J., 2003, *El Pensamiento Biogeográfico de Alfred Russel Wallace*, Bogotá: Academia Colombiana de Ciencias Exactas, Físicas y Naturales.
- Camerini J.R. (ed.), 2002, *The Alfred Russel Wallace Reader: A Selection of Writings from the Field*, Baltimore / London: Johns Hopkins University Press.
- Claeys G., 2000, 'The "Survival of the Fittest" and the Origins of Social Darwinism', *Journal of the History of Ideas*, 61: 223-240.
- Clode D., O'Brien R., 2001, 'Why Wallace Drew the Line: A Re-analysis of Wallace's Bird Collections in the Malay Archipelago and the Origins of Biogeography'. In: Metcalfe I. et al. (eds), *Faunal and Floral Migrations and Evolution in SE Asia-Australia*, Lisse, Netherlands: A.A. Balkema Publishers, 113-121.
- Coleman W., 2001, 'The Strange "Laissez-Faire" of Alfred Russel Wallace: The Connection Between Natural Selection and Political Economy Reconsidered'. In: Laurent J., Nightingale J. (eds), *Darwinism and Evolutionary Economics*, Cheltenham, U.K. / Northampton, MA: Edward Elgar, 36-48.
- Cremo M.A., 2003, *Human Devolution: A Vedic Alternative to Darwin's Theory*, Los Angeles: Bhaktivedanta Book Publishing Inc.
- Daws G., Fujita M., 1999, *Archipelago: The Islands of Indonesia: From the Nineteenth-century Discoveries of Alfred Russel Wallace to the Fate of Forests and Reefs in the Twenty-first Century*, Berkeley: University of California Press.
- Fichman M., 2001, 'Science in Theistic Contexts: A Case Study of Alfred Russel Wallace on Human Evolution', *Osiris*, 16, 2nd s.: 227-250.
- Garwood C., 2001, 'Alfred Russel Wallace and the Flat Earth Controversy', *Endeavour*, 25: 139-143.
- Hughes R.E., 1997, *Alfred Russel Wallace: Gwyddonydd Anwyddonol*, Caerdydd: Gwasg Prifysgol Cymru.
- Jones G., 2002, 'Alfred Russel Wallace, Robert Owen and the Theory of Natural Selection', *British Journal for the History of Science*, 35: 73-96.

- Knapp S., 1999, *Footsteps in the Forest: Alfred Russel Wallace in the Amazon*, London: Natural History Museum.
- Moore J., 1997. 'Wallace's Malthusian Moment: The Common Context Revisited'. In: Lightman B. (ed.), *Victorian Science in Context*, Chicago / London: University of Chicago Press, 290-311.
- Pels P., 2003, 'Spirits of Modernity: Alfred Russel Wallace, Edward Tylor, and the Visual Politics of Fact. In: Meyer B., Pels P. (eds), *Magic and Modernity: Interfaces of Revelation and Concealment*, Stanford: Stanford University Press, 241-271.
- Quammen D., 1996, *The Song of the Dodo; Island Biogeography in an Age of Extinctions*, New York: Scribner.
- Raby P., 2001. *Alfred Russel Wallace, A Life*, London: Chatto & Windus.
- Rice A.L., 1999, *Voyages of Discovery: Three Centuries of Natural History Exploration*, New York: Clarkson Potter.
- Smith C.H. (ed.), 1991, *Alfred Russel Wallace; An Anthology of His Shorter Writings*, Oxford, UK: Oxford University Press.
- Smith C.H., 1992/1999, *Alfred Russel Wallace on Spiritualism, Man, and Evolution: An Analytical Essay*, <<http://www.wku.edu/~smithch/essays/ARWPAMPH.htm>>.
- Smith C.H., 1998, 2000-, *The Alfred Russel Wallace Page*, <<http://www.wku.edu/~smithch/index1.htm>>.
- Smith C.H., 2003-2004, *Alfred Russel Wallace: The Evolution of an Evolutionist*, <<http://www.wku.edu/~smithch/wallace/chsarwp.htm>>.
- Smith C.H. (ed.), 2004, *Alfred Russel Wallace: Writings on Evolution, 1843-1912*, Bristol, U.K.: Thoemmes Continuum. 3 vols.
- Smith C.H. (in press), 'Wallace's Unfinished Business', *Complexity*.
- Stack D.A., 2003, 'Alfred Russel Wallace', Chapter Two of *The First Darwinian Left: Socialism and Darwinism 1859-1914*, Gretton, Cheltenham, UK: New Clarion Press, 20-29.
- Wallace A.R., 1855, 'On the Law Which Has Regulated the Introduction of New Species', *Annals and Magazine of Natural History*, 16 (2nd s.): 184-196.
- Wallace A.R., 1856, 'On the Habits of the Orang-Utan of Borneo', *Annals and Magazine of Natural History*, 18 (2nd s.): 26-32.
- Wallace A.R., 1858, 'On the Tendency of Varieties to Depart Indefinitely from the Original Type', *Journal of the Proceedings of the Linnean Society: Zoology*, 3: 53-62.
- Wallace A.R., 1865a, 'On the Progress of Civilization in Northern Celebes', *Transactions of the Ethnological Society of London*, 4 (n.s.): 61-70.
- Wallace A.R., 1865b, 'Public Responsibility and the Ballot', *Reader*, 5: 517a-b.
- Wallace A.R., 1865c, 'How to Civilize Savages', *Reader*, 5: 671a-672a.
- Wallace A.R., July-August 1866, 'The Scientific Aspect of the Supernatural', *The English Leader*, 2: 59-60, 75-76, 91-93, 107-108, 123-125, 139-140, 156-157, 171-173. Reprinted in November(?) 1866 with minor additions as pamphlet entitled *The Scientific Aspect of the Supernatural: Indicating the Desirableness of an Experimental Enquiry by Men of Science Into the Alleged Powers of Clairvoyants and Mediums*, London: F. Farrah.
- Wallace A.R., 1869a, *The Malay Archipelago; The Land of the Orang-Utan and the Bird of Paradise; A Narrative of Travel With Studies of Man and Nature*. London: Macmillan.

- Wallace A.R., 1869b, 'Sir Charles Lyell on Geological Climates and the Origin of Species' (running title), *Quarterly Review*, 126: 359-394.
- Wallace A.R., 1875. *On Miracles and Modern Spiritualism; Three Essays*, London: James Burns.
- Wallace A.R., 2002, *Peixes do Rio Negro / Fishes of the Rio Negro*, ed. by Toledo-Piza Ragazzo M. de, São Paulo: Editora da Universidade de São Paulo, Imprensa Oficial do Estado.
- Wilson J.G., 2000, *The Forgotten Naturalist: In Search of Alfred Russel Wallace*, Melbourne: Australia Scholarly Publishing.