

ALFRED RUSSEL
WALLACE

A REDISCOVERED LIFE

MICHAEL A. FLANNERY

Description

Alfred Russel Wallace: A Rediscovered Life is a new biography of the co-discoverer of the theory of evolution by natural selection and one of the nineteenth century's most intriguing scientists. Its provocative thesis is that Wallace, in developing his unique brand of evolution, presaged modern intelligent design theory. Wallace's devotion to discovering the truths of nature brought him through a lifetime of research to see genuine design in the natural world. This was Wallace's ultimate heresy, a heresy that exposed the metaphysical underpinnings of the emerging Darwinian paradigm. Biographer Michael A. Flannery is Professor and Associate Director for Historical Collections at the Lister Hill Library of the Health Sciences, University of Alabama at Birmingham (UAB) and editor of *Alfred Russel Wallace's Theory of Intelligent Evolution* (2008).

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Praise for Alfred Russel Wallace: A Rediscovered Life

FLANNERY'S RIVETING TALE OF REDISCOVERY PROVIDES CONVINCING new evidence that Alfred Russel Wallace—the acknowledged co-discoverer of evolutionary theory—supported an argument from design for all forms of life which, in many ways, anticipated modern intelligent design thinking. This fascinating work of intellectual history recasts a new, more complete and lasting image of the once all too elusive Wallace.

*Philip K. Wilson, MA, Ph.D., Historian of Medicine and Science
Professor of Humanities and Science, Technology & Society
Director, The Doctors Kienle Center for Humanistic Medicine
Penn State College of Medicine*

MICHAEL FLANNERY HAS WRITTEN A SUPERB BOOK THAT IN ITS PASSION and subjective honesty offers a cogent and articulate defense of Alfred Wallace's theory of intelligent design, with all its moral and ethical implications, as a counterpoint to the materialistic worldview that came to be known as Darwinism.

*John S. Haller, Ph.D.
Emeritus Prof. of History and Medical Humanities
Southern Illinois University, Carbondale*

THIS BIOGRAPHY OF ALFRED WALLACE BY MICHAEL FLANNERY IS THE most important new book I have read in years. The immense attention focused on Charles Darwin by evolution historians has unfortunately overshadowed Wallace, whose life was arguably more fascinating and insightful. Unfortunately views that are offered on Wallace today are often from Darwinist perspectives. Flannery remedies this imbalance with his story of Alfred Wallace that brings an entirely new light to the theory of evolution. In this corrective against the familiar but erroneous casting of Wallace as a miniature Darwin, Flannery artfully brings out the stark contrast—even down to their final works—between the evolution co-founders. But this volume is not merely a look back. Like any good history, Flannery's tells us where we are, and how we got here.

From their early years onward, Wallace and Darwin existed in different worlds. Their paths intersected at evolution, but they approached and departed that intersection with many different perspectives. Flannery provides a broader context than is usually found in such histories and in convincing detail demonstrates the influences and connections to today's discussion. Neither idolizing Wallace nor minimizing Darwin, Flannery provides a much needed balanced view that leaves us with a richer understanding of our ideas on origins.

Cornelius Hunter, Ph.D.

Author of the books Darwin's God, Darwin's Proof, and Science's Blind Spot

IN THIS LUCIDLY WRITTEN BOOK MICHAEL FLANNERY SHOWS THAT Alfred Russel Wallace, the co-discoverer of the theory of evolution by natural selection, thought the theory was incomplete—the guidance of a higher power was needed to explain nature. Wallace's ideas show strongly that the godless view of evolution taken by so many modern evolutionists is not forced on them by the evidence; rather they assume it in spite of the evidence.

Michael Behe, Ph.D., Professor of Biochemistry, Lehigh University

Author, Darwin's Black Box and The Edge of Evolution

FOR TOO LONG, ALFRED WALLACE'S CONTRIBUTIONS TO THE SCIENCE of evolution have been ignored or grossly mischaracterized. Why? Largely because he provided both a coherent criticism of Darwin and Darwinism and a theist-friendly alternative account of evolution. The secular intelligentsia sided with Darwin because Darwinism provided them with a view of evolution that handily eliminated God. They succeeded in making Darwinism the default view of evolution, both in history books and biology textbooks. As a result, our understanding of the history of evolutionary theory and our understanding of evolution itself have suffered. Wallace's account of evolution, if it had received a fair hearing, would have (I believe) won the day, and our understanding of the history of evolutionary theory and evolution itself would be much different today. But it is not too late. Wallace may yet become

the beginning point of intellectual renewal, and Michael Flannery's fine biography of Alfred Russel Wallace will go a long way in bringing that much-needed revolution about.

*Benjamin Wiker, Ph.D.
Author of *The Darwin Myth**

HISTORIAN MICHAEL FLANNERY'S ACCOUNT OF ALFRED RUSSEL WALLACE'S life work is a lucid sketch of the scientific and philosophical controversies over evolution in the mid-nineteenth century... Wallace observed, to Darwin's chagrin, that man's intellect—his reason, his artistic and musical ability, his wit, his talent, and most of all man's moral sense—must be caused by an "Overruling Intelligence" that guided evolution. Wallace insisted that man's mind was created by a Mind. Flannery's book is a concise and eloquent exploration of Wallace's genius and of his rejection of Darwin's implicit materialism and atheism. These differences persist in our modern debate about origins, and today Wallace's views may well be advancing. Flannery's superb book provides the reader with indispensable insight into the earliest squalls in the modern tempest over Darwin's theory and intelligent design.

*Michael Egnor, M.D., Professor and Vice-Chairman
Department of Neurological Surgery
Stony Brook University Medical Center*

FLANNERY'S BOOK IS A WELCOME ADDITION TO ANY BOOKSHELF THAT offers a window into evolution. It comes down to this: Darwin was following evidence that supported a materialist theory he already espoused; Wallace was following evidence that shed light on the nature of nature. Popular culture chose Darwin, and the rest is the stale Darwin worship promoted in popular culture and academy alike, as an alternative to engagement with the facts.

*Denyse O'Leary
Co-author of *The Spiritual Brain**

8.

MURDERING DARWIN'S CHILD

TOWARD AN INTELLIGENT EVOLUTION AND A CLASH OF WORLDVIEWS

DARWIN KNEW SOMETHING OMINOUS FROM WALLACE WAS IN THE air. Writing to Wallace in March 1869, Darwin penned nervously, "I shall be intensely curious to read the *Quarterly*: I hope you have not murdered too completely your own and my child."¹¹⁶ Darwin didn't have long to wait for his "murder."

It came in the form of a review published in the April 1869 issue of the *Quarterly Review*. It was Wallace's review of Charles Lyell's tenth edition of his *Principles of Geology*.¹¹⁷ Wallace and Lyell had established a long and intense dialogue over evolution and the two agreed that the theory—at least as Darwin had expounded it—carried certain implications for human development that were problematic; both became sounding boards for each other regarding a teleological interpretation of these processes.

Perhaps emboldened by his fertile discussions with Lyell, Wallace used his review to, in Martin Fichman's words, present "to the world the unambivalent evolutionary teleology that he would expound in ever greater detail during the remainder of his life."¹¹⁸ Wallace basically pointed to the human intellect as being too great for that simply allowable by natural selection because, by definition, the law of natural selection guided by the principle of utility (the idea that "no organ or attribute can exist in a natural species unless it is or has been useful to the organisms that possess it..."¹¹⁹) would be an effective barrier to its development. One could not, Wallace argued, explain the uniquely human attributes of abstract reasoning, mathematical ability, wit, love of mu-

sic and musical aptitude, art appreciation and artistic talent, and moral sense as necessary for survival in a state of pure nature through which (by Darwin's own principle) natural selection must operate. Therefore, some other cause or action must be invoked. That cause of action Wallace called "an Overruling Intelligence."¹²⁰

Darwin was devastated and scratched an emphatic "NO!!!" in the margin of his copy of the *Quarterly*. He wrote back to Wallace, "I presume that your remarks on Man are those to which you alluded in your note. If you had not told me I should have thought that they had been added by someone else. As you expected, I differ grievously from you, and I am very sorry for it."¹²¹ Nine months later Darwin was still reminding Wallace, "But I groan over Man—you write like a metamorphosed (in retrograde direction) naturalist, and you the author of the best paper ["On the Origin of Human Races and the Antiquity of Man"] that ever appeared in the *Anthropological Review*! Eheu! Eheu! Eheu!—Your miserable friend, C. Darwin."¹²²

Darwin also broached his disappointment to Lyell. Darwin did not get the sympathetic ear he was looking for. "I rather hail Wallace's suggestion that there may be a Supreme Will and Power which may not abdicate its functions of interference, but may guide the forces and laws of Nature," he replied.¹²³ Lyell was tied and devoted to Darwin by class, but he was truly wedded to Wallace in spirit. Despite Darwin's consternation, Wallace remained undeterred. Over the years he continued to develop a thoroughgoing teleological worldview that encompassed cosmological and biological realms.

Darwin must have wondered what had gotten into Wallace, but he failed to appreciate that the "child" born of the Ternate letter was a very different offspring from Darwin's. Despite the presumed similarity between the two hypotheses, the ideas expressed at the Linnean Society that summer evening of 1858 were really very different.¹²⁴ For one thing Wallace never used the term "selection" in his original formulation. For another (and more importantly) Wallace rejected Darwin's use of do-

mesticated animal breeding as a proof for the operations of natural selection. (More about this second point shortly.)

Of course, both Darwin and Wallace argued that their theories were principles based upon a constantly changing environment along with very small variations that affected individual survival and response to environmental pressures resulting in differential death rates and moreover that species held a tendency to form new perpetuating varieties. These resulted in adaptive progress for surviving species while at the same time causing a branching indefinite divergence of new species. In short, varieties would eventually over time convert into new species.

However, Darwin and Wallace each read Malthus differently. Darwin considered the food supply had to be on average constant with the increase of population geometrically; Wallace on the other hand saw the growth or depletion of a population due to available food and the ability of a given species to exploit it. In short, Darwin saw competition as taking place between individuals while Wallace saw competition as taking place between populations; thus competition led to modifications of a group under Darwin's view with competition leading to changes in population size of several groups for Wallace. Darwin focused on individual struggles for existence while Wallace concentrated on population growth as the powerful modifying force in nature. Wallace saw evolution taking place not in an individual but in a demographic context. Both views had problems. Wallace failed to clearly distinguish varieties and variations; Darwin's hypothesis was premised upon the inheritance of acquired characteristics, a notion exploded years later by August Weismann's failed attempt to confirm the phenomenon in the experimental removal of successive generations of rat tails. Members of the Linnean Society hadn't noticed any of these differences in 1858.

Wallace, the founder of biogeography, knew that domestic animals had a tendency to revert to their original stock if placed in a wild environment or else perish. But this would not work in reverse; in other words, wild species variation cannot be deduced from domestic practices because the very state of "selection" and then of subsequent feeding

and protecting of the newly bred animals effectively shelters them from the effects naturally bearing upon their survival. Wallace came to profoundly disagree with Darwin over his breeding examples as a proof of natural selection; all they demonstrated was *unnatural* selection. Wallace emphasized the principle of utility. Wallace always insisted that domestication introduced an artificial effect; once this human intervention is removed species either revert to their “original type” or become extinct.

Darwin replied that his domestication examples proved that “hereditary modification” was possible and that artificial selections show that small variations can accumulate to change the species’ type.¹²⁵ Darwin always believed that a general theory of selection was possible; Wallace always believed Darwin’s example of domestic breeders to be naively anthropomorphic.

Darwin nevertheless remained adamant; he insisted that “unconscious selection” produced “domestic races” that have been modified by breeders and horticulturalists for years and that history showed that domesticated breeds have changed dramatically through several thousand years. Indeed Darwin went so far as to claim that the line between unconscious selection and natural selection was difficult to discern. As Jean Gayon has convincingly argued, Darwin’s domestication examples were not simply metaphorical pedagogical devices, they were essential to the theory itself.¹²⁶ In words that Wallace himself could have penned, Phillip Johnson noted years later that “The analogy to artificial selection is misleading. Plant and animal breeders employ intelligence and specialized knowledge to select breeding stock and to protect their charges from natural dangers. The point of Darwin’s theory, however, was to establish that purposeless natural processes can substitute for intelligent design.”¹²⁷

Of course, Darwin never did explain precisely *how* and *when* micro-variations would produce macro-speciation and still leave his chance or random modification theory inviolate, which was his central thesis. By comparison Wallace’s application of the principle of utility is, if nothing else, more consistent with the principle itself. That is to say, Wal-

lace's formulation was rooted in experience better suited to the kinds of massive—even global—kinds of macroevolutionary species change that made Darwin's theory the unique and controversial idea that it was.

In an amazingly perceptive article, Melinda B. Fagan has found that the differences in the two naturalists' theories were deeply integrated into their collecting goals, objectives, and daily field practices. While Darwin came to the *Beagle* under no particular financial constraint or expectation, Wallace was, at least in part, in this for the money. Thus Wallace tended to collect twice: once for the museum and collector trade, the other for his own scientific collection. Because numbers were of the essence, Wallace's dawn to dusk collecting routine was essential. This demanded very different collecting styles: Darwin principally collecting along the coast and spending nearly half his time on board, Wallace working much longer, harder, and more intensely often in remote regions deep in the interior. Fagan points out that "Wallace's theoretical and economic interests led him to collect whole series of specimens for particular species, from his first expeditions on the Rio Negro in the 1840s, to his hunt for Paradise birds in the Aru Islands over a decade later."¹²⁸ While individuals are not unimportant for Wallace, he instead "consistently emphasized groups of organization, while Darwin described many details of individual organisms. Also, Wallace clearly distinguished between groups of organisms, while Darwin was more ambiguous."¹²⁹ Wallace emphasized species represented by a "good series" of many individuals, thus he "used populations of specimens to represent species, not one or two individuals, as Darwin did."¹³⁰ Fagan concluded that Wallace's theory "was neither confused nor misguided. Nor does it posit an additional process occurring over and above selection on individual organisms. After describing selection on individual organisms (an unusual departure from his typical emphasis), Wallace shifts to species and varieties, the focus of most of his writing, which his routine practice led him to emphasize."¹³¹ Given their distinctive purposes and *modus operandi*, then, the differences between Wallace's and Darwin's natural selection become understandable.

Regardless of the differences, in both cases common descent along with its requisite macroevolutionary change remains a given. But the differing views of Darwin and Wallace on the principle of utility would compel a much deeper rift. Wallace came to realize something that biochemist Michael Behe would note well over one hundred years later: “Common descent is true; yet the explanation of common descent—even the common descent of humans and chimps—although fascinating, is in a profound sense *trivial*. It says merely that commonalities were there from the start, present in a common ancestor. It does not even begin to explain where those commonalities came from, or how humans subsequently acquired remarkable differences. *Something that is nonrandom must account for the common descent of life.*”¹³²

What is that “something”? Here Wallace had given his answer in the conclusion to his review of Lyell’s *Principles of Geology*: “Let us fearlessly admit that the mind of man (itself the living proof of a supreme mind) is able to trace, and to a considerable extent has traced, the laws by means of which the organic no less than the inorganic world has been developed. But let us not shut our eyes to the evidence that an Overruling Intelligence has watched over the action of those laws, so directing variations and so determining their accumulation, as finally to produce an organization sufficiently perfect to admit of, and even to aid in, the indefinite advancement of our mental and moral nature.” It was an answer he would spend the rest of his life elaborating.

So what *really had* Wallace developed in terms of an evolutionary theory? The best approach is to first define Darwin’s theory. It should be made clear from the outset that Darwin’s evolutionary theory operated by three related propositions: 1) species were mutable; 2) evolution extends to account for virtually *all* biodiversity; and 3) the process of change was caused by natural selection and random variation.

It is most important to bear in mind that Darwinian evolution functions through variation, a wholly “random” process.¹³³ Blind variations (mutations, according to modern Darwinists) operating through natural selection effectively render William Paley’s argument from design moot.

Giving over biological life to randomness and change wasn't especially directed at eliminating the role of a Creator or teleological purpose in nature, simply to make such considerations superfluous in light of a particular type of scientific inquiry called methodological naturalism, the notion that scientists *must* invoke *only* unintelligent material processes functioning via unbroken natural laws in nonteleological ways. But Wallace's suggestion of an "Overruling Intelligence" in the process of developing the human mind challenged Darwin's evolutionary framework, a framework that served not only to bolster a materialistic metaphysic but, in effect, proposed to become its operative manifesto. Indeed in the end, it supports the inescapable conclusion that Darwinian evolution far from being a scientific theory is "one long argument" in favor of an *a priori* metaphysic.¹³⁴

Darwin's own words on the subject support this conclusion. "With respect to the theological view of the question. This is always painful to me. I am bewildered. I had no intention to write atheistically. But I own that I cannot see as plainly as others do, and as I should wish to do, evidence of design and beneficence on all sides of us. There seems to me too much misery in the world.... I am inclined to look at everything as resulting from designed laws, with the details, whether good or bad, left to the working out of what we may call chance."¹³⁵

Whether, given his Plinian experiences, Paley ever *was* "conclusive," Darwin in his typically disingenuous way claimed, "The old argument from design in Nature, as given by Paley, which formerly seemed to me so conclusive, fails, now that the law of natural selection has been discovered.... There seems to be no more design in the variability of organic beings, and in the action of natural selection, than in the course which the wind blows."¹³⁶ Darwin was also very concerned to dispel any false impressions he may have left with regard to teleology in nature. "For brevity sake," he explained, "I sometimes speak of natural selection as an intelligent power; in the same way as astronomers speak of the attraction of gravity as ruling the movements of the planets, or as agriculturalists speak of man making domestic races by his power of selection. In the

one case, as in the other, selection does nothing without variability, and this depends in some manner on the action of the surrounding circumstances on the organism. I have, also, often personified the word Nature; but I mean by nature only the aggregate action and product of many natural laws—and by laws only the ascertained sequence of events.”¹³⁷

The soft-spoken patriarch of Down House always tried to downplay the philosophical and religious aspects of his theory. Darwin wanted acceptance above all, and to achieve that he was willing to engage in any number of strategies. One of the most obvious was to insert into the second edition of his *Origin* some language to placate the clergy over the implication of his work. In the first edition, Darwin simply closed his book with, “There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or one....” But in the very next edition, published on January 7, 1860 (only about six weeks after the first), Darwin added, “There is grandeur in this view of life, with its several powers, having been originally breathed *by the Creator* [emphasis added] into a few forms or one....”

Later, in a letter to Joseph Hooker on March 29, 1863, Darwin claimed his regret that he had “truckled to public opinion & used the Pentateuchal term of creation, by which I really meant ‘appeared’ by some wholly unknown process. It is mere rubbish thinking, at present, of origin of life; one might as well think of origin of matter.”¹³⁸ If Darwin regretted all his “truckling to public opinion” so much, why did he never remove the term from the four subsequent editions of his *Origin*? The only conceivable answer is that Darwin preferred the public relations advantage such “truckling” offered.

None of this, of course, suggests that Darwin was open to any kind of teleology in his brand of evolution. He had long dismissed that possibility, and the evidence found in his own private notebooks, largely compiled upon his return from the *Beagle* voyage in 1836, is replete with favorable—at times even enthusiastic—references to the skeptic David Hume and atheist/positivist Auguste Comte.¹³⁹ No wonder that Cyril Darlington, an otherwise sympathetic Darwinian, called him (com-

pared to Wallace, Lyell, and Hooker) a “slippery” character whose veracity and intellectual integrity was not to be trusted.¹⁴⁰

In this context Wallace’s “murder” becomes immediately apparent when we see precisely what he was formulating in contradistinction from the materialistic methodological naturalism of Darwinism. Wallace instead proposed a theory of common descent based upon natural selection strictly bounded by the principle of utility within a larger teleological and theistic framework. It was, in fact, largely a revision of his earlier essay on “The Origin of Human Races and the Antiquity of Man.” But, as Martin Fichman has observed, Wallace constructed a theistic evolutionary model that made natural selection subservient to much higher teleological directive powers.¹⁴¹ *Intelligent* evolution was born with the April issue of the *Quarterly Review*; the immediate catalyst was, quite appropriately, a work by Charles Lyell who had suggested an evolution imbued with intelligence in his own work.

Darwin could complain about Wallace’s defection, but the renegade captain could remind the admiral that, after all, it was the admiral who had woven the principle of utility (the principle that suggested the “murder” in the first place) into the very fabric of his natural selection theory: “I think it would be a most extraordinary fact if no variation ever had occurred useful to each being’s own welfare,” Darwin insisted in his *Origin*, “in the same way as so many variations have occurred useful to man. But if variation useful to any organic beings do occur, assuredly individuals thus characterized will have the best chance of being preserved in the struggle for life; and from the strong principle of inheritance they will tend to produce offspring similarly characterized. This principle of preservation, I have called, for the sake of brevity, Natural Selection.”¹⁴² From this standpoint utility *was* natural selection.

Still, Wallace’s insertion of an intelligent cause and agency even if located behind or even through natural laws was treason for Darwin’s recalcitrant materialism. Not because it was *unscientific* per se; there was nothing “unscientific” about limiting the principle of utility. Darwin himself was increasingly relying upon subsidiary theories of sexual

selection and pangenesis to shore up his theory (both of which Wallace thought were seriously flawed). It was treason because Wallace's suggestion ran counter the philosophical assumptions of materialism and methodological naturalism that were inherent in Darwin's theory. Darwin's evolutionary theory wasn't just a story of common descent; it was a vindication for the blind forces of materialism.

The father of Darwinism did not bring into this world some innocent offspring of a dispassionate search for scientific truth. As we have seen, Darwin was seduced by Plinian freethinkers into birthing a child of a particular kind; a soulless child that saw everything, including man himself, as a product of soulless processes. Wallace's "Overruling Intelligence" would have slain such a pernicious demon.

Would have but didn't. Why? The answer is complex and by no means amenable to a simple answer. However, a big part lies in the formation of the X Club on November 3, 1864. Meeting at six or so each first Thursday of the month, members of Darwin's inner circle met for dinner at Saint George's Hotel at Abermarle Street.¹⁴³ The roster included Thomas Henry Huxley and Joseph Hooker (Darwin's most intimate confidantes); John Tyndall (a close friend of Huxley), George Busk (close friend of Hooker and Linnean Society secretary who read the Darwin-Wallace papers at the unveiling of natural selection), Edward Frankland (a chemist and friend of Tyndall), Herbert Spencer (philosopher and friend of Huxley and Wallace), Thomas Hirst (mathematician and friend of Tyndall who was converted to transmutation with reading Robert Chambers's *Vestiges*), and John Lubbock (the well-connected son of Sir John Lubbock, 3rd Baronet, a neighbor of Darwin's and a frequent visitor to Down House). Conspicuously absent were Charles Lyell (much older than the rest and never enthusiastic for evolution) and Alfred Russel Wallace (by temperament indisposed to such gatherings and after 1869 anathematized by this tightly knit group).

Darwin was not one to directly engage his enemies. Rather, he sent his loyal captains to do his bidding. The two principals were Huxley and Hooker. Huxley loved the fray, and spoke to Darwin about "sharpen-

ing my claws and beak in readiness."¹⁴⁴ At the lecture podium he was a rough-and-tumble street brawler. Known for speaking extemporaneously and making quickly but adroitly sketched illustrations of his points, he could also heap on abuse with his rapier wit.

Hooker was more tactful and discrete in dealing with the opposition. He was always willing to lend his support, but his quieter style sometime prompted Darwin to wonder, "I feared that you were weary of the subject."¹⁴⁵ But Hooker's less in-your-face approach had advantages. When he was unable to get the editor of *Gardener's Chronicle* to run a notice on a recent work by Darwin, he simply wrote it himself attempting to mimic the editor's style.¹⁴⁶

By the end of the 1860s the X Club had won Darwin's battle. The speed with which the professional public and even Huxley's "educated mob" was browbeaten into acquiescence was nothing short of remarkable. The prize was "science as synecdoche for Darwinism."¹⁴⁷ Bandyng about the term "science" as synonymous with Darwinian materialism, Huxley spoke more truth than perhaps he intended when he declared, "The English nation will not take science from above, so it must get it from below. We, the doctors, who know what is good for it, if we cannot get it to take pills, must administer our remedies par derriere...."¹⁴⁸ With unabashed hubris Huxley readied his Darwinian syringe and not too politely asked the public to bend over.

Darwin was not satisfied with winning mother England. He also encouraged the spread of the Darwinian gospel to the Continent. In 1862 the French atheist Clémence Royer released a translation of *Origin of Species* to the applause of Paul Broca's Society of Anthropology. In Germany Ernst Haeckel, a deterministic anti-Christian monist, played fast and loose with embryo drawings to support his now-discredited evolutionary recapitulation theory. Haeckel also championed Darwin's cause in Germany. If Huxley was Darwin's "Bulldog" then Haeckel was surely his "Dachshund." In 1864 Haeckel happily wrote to Darwin that the "best" of Germany's youth were committed to Darwinism.¹⁴⁹ His *General Morphology of Organisms* (1866) was one of Germany's first biol-

ogy texts written from a Darwinian perspective, and (like Huxley) he gave a series of popular lectures on evolution, which were compiled and published as *The Natural History of Creation* (1868).¹⁵⁰

By the time Wallace formally broke with Darwin, Darwinism had been victorious. Wallace's marginalization from Darwin's circle was certain. He was, in Ross A. Slotten's words, "the heretic in Darwin's court." Wallace knew this. In a letter dated April 28, 1869, responding to Darwin's dismay over his *Quarterly Review* piece, Wallace pulled no punches and wrote out an even more thorough explanation of his views:

It seems to me that if we once admit the necessity of *any* action beyond "natural selection" in developing man, we have no reason whatever for confining that agency to his brain. On the mere doctrine of chances it seems to me in the highest degree improbable that so many points of structure, all tending to favour his mental development, should concur in man alone of all animals. If the erect posture, the freedom of the anterior limbs from purposes of locomotion, the powerful and opposable thumb, the naked skin, the great symmetry of form, the perfect organs of speech, and, in his mental faculties, calculation of numbers, ideas of symmetry, of justice, of abstract reasoning, of the infinite, of a future state, and many others, cannot be shown to be each and all *useful* to man [on the principle of utility] in the very lowest state of civilization—how are we to explain their co-existence in him alone of the whole series of organized being? Years ago I saw in London a bushman boy and girl, and the girl played very nicely on the piano. Blind Tom, the half-idiot negro slave, had a "musical ear" or brain, superior, perhaps, to that of the best living musicians. Unless Darwin can show me how this latent musical faculty in the lowest races can have been developed through *survival* of the fittest, can have been of *use* to the individual or the race, so as to cause those who possess it in a fractionally greater degree than others to win in the struggle for life, I must believe that some other power (than natural selection) caused that development. It seems to me that the *onus probandi* will lie with those who maintain that man, body and mind, could have been developed from a quadrumanous animal by "natural selection."¹⁵¹

Wallace reflecting on that letter in 1908 thought it the best and most succinct statement on his position than anything he had up to then published. Indeed he is correct. Whether living among Uaupés River natives or Dyak headhunters, Wallace remembered their capacities for reason, music, language, altruism, and hosts of other uniquely human attributes as being at one with his own. In contrast, Darwin saw the “lowest” of natives as reflective of primordial social instincts “developed by nearly the same steps” as the “lower animals.”¹⁵² This is not to suggest that Darwin was not keenly aware of the differences of degree in *Homo sapiens* and animals; Darwin was, after all, a proponent of the unity of humankind as a species and a vocal opponent of slavery. In fact Adrian Desmond and James Moore have recently made a case for the “humanitarian roots” of Darwin’s evolutionary theory in *Darwin’s Sacred Cause*.¹⁵³

Yet by their own account the difference in approach to the so-called “savage” races between Wallace and Darwin is unmistakable and leaves Darwin hardly a racial egalitarian. Desmond and Moore write, “... like many, Darwin equated ‘savagery’ in its ‘utter licentiousness’ and ‘unnatural crimes’ with the values of his own under-class (two groups the socialist Wallace held in high regard). But by lowering ‘savage’ morality and raising ape capabilities, Darwin made the continuum towards civilization seem more feasible. It was humanitarianism that Darwin took pride in.... Yet the incongruity of his class holding this ethic sacrosanct while disparaging the ‘lower’ races (even as colonists displaced or exterminated them) is impossible to comprehend by twenty-first century standards.”¹⁵⁴ Indeed, between Wallace and Darwin it is the former who appears more modern and in accord with current sensibilities. One is left wondering how “sacred” Darwin’s cause really was; Desmond and Moore themselves are forced to admit that, “while slavery demanded one’s active participation, racial genocide was now normalized by natural selection and rationalized as *nature’s* way of producing ‘superior’ races. Darwin ended up calibrating human ‘rank’ no differently from the rest of his society.”¹⁵⁵ Wallace’s and Darwin’s different attitudes were symptomatic of differ-

ent worldviews. For Wallace, humanness was something apart from the ordinary biological world; for Darwin this simply was not the case.

Wallace would state his case more publicly in an essay, “[The Limits of Natural Selection as Applied to Man](#)”, published in 1870 as part of an anthology of his works titled *Contributions to the Theory of Natural Selection. A Series of Essays*. These ten works give a thorough representation of Wallace’s work up until that time. It includes the famous Ternate letter (see Appendix A) and besides his work on human development, comprises essays related to ornithology, Lepidoptera, and animal mimicry.

With Darwinism secure, the Down House patriarch finally tackled the application of his theory to humans in [The Descent of Man](#) (1871). No doubt with Wallace in mind Darwin wrote, “Spiritual powers cannot be compared or classed by the naturalist; but he may endeavor to show, as I have done, that the mental faculties of man and the lower animals do not differ in kind, although immensely in degree.”¹⁵⁶ Wallace would never agree.

Despite their disagreements, Darwin and Wallace maintained gentlemanly correspondence for the remainder of their lives. For Wallace’s part, he commented, “It is really quite pathetic how much he felt difference of opinion from his friends.”¹⁵⁷ Darwin *did*, however, always feel a bond and to some extent an obligation to Wallace. After all, it *was* this unknown specimen collector in the wilds of the Ternate and Gilolo islands that finally prompted him to action, and had Wallace been as possessive of “*my theory*” as Darwin, things could easily have taken a nasty turn. But they didn’t and Darwin was always thankful for that.

Soon Wallace had something to thank Darwin for. Arabella Buckley, secretary to Charles Lyell, an intelligent young woman who wrote reviews and children’s books on nature, came to know Wallace. Her mother’s pursuit of spiritualism no doubt gave Miss Buckley and Lyell’s colleague a great deal to talk about. How Arabella came to know of Wallace’s financial difficulties is unclear, but in 1879 she wrote (unbeknownst to Wallace) a letter to Darwin asking that the famed naturalist assist in obtaining a government pension for her friend. Wallace always

had a steady income from his writing, but he was a poor investor and had spent a large sum of his personal savings litigating against an insane zealot attempting to prove the earth flat. Darwin didn't hold out much hope but offered to ask Hooker what might be done. There the matter rested.

Then in 1880 Wallace published *Island Life*. Issued as a sequel to his *Geographical Distribution of Animals* (1876), it was a sensation. Darwin thought it was Wallace's best work. Wallace dedicated the book to Hooker, and Hooker agreed with Darwin on its merit. This formed the stimulus for Darwin to revive the idea of a pension a second time. This round worked. Huxley, who always thought Wallace deserved the honor and recognition of England for all he had done, led the charge. Arabella Buckley drew together a *curriculum vita* of his accomplishments. Three stood out: the sheer size of his Malay Archipelago collections, his independent discovery of natural selection, and his application of natural selection to the geographical distribution of animals (biogeography). Darwin sent a personal note to Prime Minister Gladstone and backed it up with well placed letters to everyone he could think of who might aid in the pension process. Darwin received a reply on January 7, 1881:

Dear Mr. Darwin

I had in some degree considered the subject of your note and the memorial upon it [sic] arrival and I lose no time in apprising you that although the Fund is moderate, and is at present poor, I shall recommend Mr. Wallace for a pension of £200 a year. I remain

Faithfully yours

W. E. Gladstone¹⁵⁸

It was certainly gratifying for Darwin and welcomed relief for Wallace. In 2010 dollars this amounts to an annual pension of \$23,400.00 (see [Measuring Worth](#)), well above the average American wage earner's annual salary during the period of \$832. The pension lifted a real burden from the Wallace household. Wallace would, of course, continue to write but it meant that he was free from the ever-present necessity of writing to produce an immediate income.

Darwin's last gesture toward Wallace was a very kind one, one he could have easily ignored. When Darwin got the final approval from Gladstone he was not a well man. He would lose his loveable but ne'er-do-well brother Erasmus in August, and in October his "worm book" (*The Formation of Vegetable Mould Through the Action of Worms*) was released. Tired, winded, and with a weak pulse, Darwin continued to work as far as his condition would allow. "I am fairly well," he wrote to Wallace in January 2, 1881, "but always feel half dead with fatigue."¹⁵⁹ He would struggle on another year. On the afternoon of April 19, 1882, Darwin died. There were rumors of a deathbed conversion from Darwin's stated agnosticism, but they were likely more myth than fact.¹⁶⁰ Wallace served as pallbearer at the funeral held at Westminster Abbey on April 26; thus closed the relationship between Alfred Russel Wallace and Charles Darwin.

Their lives had both been complex and, at times, full of controversy. So too their friendship was a complicated one. On one level Darwin would never forgive Wallace for his mutinous defection. It wasn't a question of different scientific opinions; it was a question of different worldviews. What precisely *was* Darwin's worldview?

As we have seen, the radical deism of his grandfather Erasmus festered into the quiet atheism in his father Robert, and as a boy the Unitarian instruction of young Charles devolved to his sisters. Introduced to radical freethinkers as a teenager in the Plinian Society during his abortive attempt at pursuing a medical career at the University of Edinburgh, we find him taking almost naturally to the skepticism of David Hume and the positivism of Auguste Comte.¹⁶¹ No wonder Janet Browne admits that "Darwin was profoundly conditioned to become the author of a doctrine inimical to religion."¹⁶² Darwin claims to have started out as a theist when writing *Origin of Species*, but then asks rhetorically, "can the mind of man, which has, as I fully believe, been developed from a mind as low as that possessed by the lowest animals, be trusted when it draws such grand conclusions?" He concluded, "I for one must be content to remain an Agnostic."¹⁶³

But can we really leave it at that? In the end, can we conclude that Darwin, in a hopeless theological muddle, simply settled on uncertainty in this question? Some who read his *Origin* would have accepted perhaps a different designation. Adam Sedgwick blasted Darwin's theory. Accepting Darwin's evolutionary ideas threatened, according to Sedgwick, to "sink the human race into a lower grade of degradation than any into which it has fallen since its written records tell us of its history."¹⁶⁴ Charles Hodge, principal of Princeton Theological Seminary and America's leading Calvinist, agreed. Whatever Darwin's personal religious faith may or may not be, he insisted, Darwinism is atheism.¹⁶⁵ So what are we to make of Darwin? Was he atheist or agnostic?

On balance, the historical evidence suggests that Darwin's religious views always tended toward some form of theistic nihilism. Darwin was always careful to keep any teleological implications out of his theory. It is clear that when Darwin viewed nature, God was not there. In fact, for Darwin, man was mere animal, different in degree certainly but not in kind. As for the complex emotions often associated with reverence for God, Darwin saw parallels in the "deep love of a dog for his master" and "of a monkey to his beloved keeper."¹⁶⁶ "The idea of a universal and beneficent Creator," he insisted, "does not seem to arise in the mind of man until he has been elevated by long-continued culture." In short, God is the invention of man *not* man the creation of God. All this tends toward atheism. But to view Darwin simply as an atheist and leave it at that seems too simplistic. After all, he claimed to be an agnostic. Why not take his word for it?

The problem with simply calling Darwin an agnostic is that agnosticism means many things. Thomas Henry Huxley, in fact, coined the word to distance himself from charges of materialism and even atheism. But it became a failed strategy as agnosticism soon came to have a wide range of connotations in public discourse and common parlance. Even Lenin noticed the miscarriage stating that "in Huxley agnosticism serves as a fig leaf for [his] materialism." Indeed by the end of the nineteenth century agnosticism had come to mean different things to differ-

ent people. Many simply regarded agnosticism as a kind of uncertainty about God's existence; hypothetically any agnostic might be swayed into belief by reason and argument. At first blush one is inclined to associate Darwin with this brand of agnosticism. Darwin, after all, was always a minimalist in his negation of God. However, he never felt a direct attack was necessary because he, like Huxley, believed that all talk of God and deity was beyond human understanding. Darwin adhered not to a weak form of agnosticism that says merely, "I don't know if there's a God because I've not seen sufficient evidence for Him;" his was a much stronger form of agnosticism that argued God was *unknowable*—all God-talk was ultimately, for Darwin, nonsense. It is this epistemological certainty that makes this a *strong* version of agnosticism. So here's the problem: simply calling Darwin an agnostic is not specific enough because it leaves the two forms (the strong and the weak) ambiguous.

Well known historian of science Maurice Mandelbaum understood this. In an interesting analysis of Darwin's religious views, he noted, "In the end his [Darwin's] Agnosticism was not one brought about by an equal balance of arguments too abstruse for the human mind; it was an Agnosticism based on an incapacity to deny what there was no good reason for affirming. Thus, those who, at the time, regarded Agnosticism as merely an undogmatic form of atheism would, in my opinion, be correct in so characterizing Darwin's own personal opinion."¹⁶⁷ Darwin as "undogmatic atheist" came as close to the truth as anyone had been able to come in the century since *Origin* appeared.

But perhaps another designation would be even more precise or at least equally useful in this regard. Scottish theologian Robert Flint offered a term of his own that comports well with Darwin's position. He wrote:

The atheist is not necessarily a man who says "There is no God." What is called positive or dogmatic atheism, so far from being the only kind of atheism, is the rarest of all kinds. It has often been questioned whether there is any such thing. But every man is an atheist who does not believe that there is a God, although his want of belief may not be

rested on any allegation of positive knowledge that there is no God, but simply on one of want of knowledge that there is a God. If a man have failed to find any good reason for believing that there is a God, it is perfectly natural and rational that he should not believe that there is a God; and if so, he is an atheist, although he assume no superhuman knowledge, but merely the ordinary human power of judging evidence. If he go farther, and, after an investigation into the nature and reach of human knowledge, ending in the conclusion that the existence of God is incapable of proof, cease to believe in it on the ground that he cannot know it to be true, he is an agnostic and also an atheist, an agnostic-atheist—an atheist because an agnostic. There are unquestionably many such atheists. Agnosticism is among the commonest apologies for atheism. While, then, it is erroneous to identify agnosticism and atheism, it is equally erroneous so to separate them as if the one were exclusive of the other: that they are combined is an unquestionable fact.¹⁶⁸

Flint's important study of *Agnosticism* offers an insightful and useful designation in the term *agnostic atheist*. Nick Spencer's recent article in *The Guardian* (interestingly cited approvingly on Richard Dawkins's blog May 21, 2009) noted a problem with the overly simplistic use of the term agnostic. "Attitudes are fine," he suggests, "but they need to be about something. Adjectives need nouns. If Huxley was indeed an agnostic, he was an agnostic atheist, tending away from the divine but unwilling (so he claimed) to be too dogmatic about it." And so too with Darwin.

Perhaps more importantly *Darwinism* is suffused with agnostic atheism. Edward Larson is right in concluding that, "For Darwin, differential death rates caused by purely natural factors created new species. God was superfluous to the process."¹⁶⁹ Darwin never argued *against* God in any of his works, including *Descent of Man*, only against the necessity of God. This minimalist formulation is powerful in its dismissiveness of deity and thus forms an essential (though not necessarily sufficient) foundational premise for secularism. It was—and is—atheism but always of a distinctly undogmatic stripe. When the liberal Victorian

clergy rushed to support *Origin*, Darwin was quick to respond. The Reverend Charles Kingsley approved of a theistic brand of Darwinism, and sure enough it soon found its way into the very next edition of *Origin* in January of 1860 (and every subsequent edition thereafter) as having the approbation of a “celebrated author and divine.” When Harvard botanist Asa Gray supported his own theistic version of *Origin*, Darwin compiled his warmly supportive reviews and published them as *Natural Selection Not Inconsistent with Natural Theology. A Free Examination of Darwin’s Treatise on the Origin of Species, and of Its American Reviewers* in 1861. Publication expenses were completely borne by Darwin. As Benjamin Wiker points out, it’s not that Darwin actually agreed with Gray; his private correspondence is replete with his polite objections to Gray’s theistic additions. Nevertheless, “he had no qualms about using Gray’s argument if it would smooth the way for acceptance of his theory. Once the theory was accepted,” Wiker adds, “the theistic patina would be ground away by the hard, anti-theistic core of the argument.”¹⁷⁰ The point is it would be wrong to interpret Darwin’s willing inclusion of Kingsley’s religious support in *Origin* or his eager approval of Gray’s theistic reviews of his work as evidence of his matching belief; Darwin was always more than willing to set his hard agnosticism aside in the interest of promoting his pet theory.

So what are we to make of Darwin’s religious beliefs? There are five possibilities:

1. Darwin was a *religious believer*. This is hardly supportable by any historical evidence whatsoever.
2. Darwin was an *agnostic*. This is true as far as it goes, but the term itself is too vague and diverse in meaning to be of much use and, in fact, may leave seriously misleading impressions.
3. Darwin was an *atheist*. This is also true insofar as his theory tended to support atheism but probably goes too far in relation to Darwin himself for it implies a dogmatism ill-suited to his subtler and more pragmatic nature. For all of Richard Dawkins’s effusions on behalf of the Down House patriarch,

Darwin would likely have found Dawkins's approach crude and unappealing if not downright appalling.

4. Darwin was an *undogmatic atheist*. This apt phrase suggested by Mandelbaum is descriptive of Darwin's belief and approach but must be reconciled with his own claims to being "an Agnostic."
5. Darwin was an *agnostic atheist*. This comes closest to encompassing the range and character of his beliefs and it comports to his theory as well.

So, in the end, it is fairly easy to accept either Darwin as *undogmatic atheist* or *agnostic atheist*. The dual attribution of "atheism" shows the common ties that bind. But the wishful pleadings of Darwinian evolutionists like Karl Giberson and others that Darwin was a "sincere religious believer" whose eventual conversion to a more hardened agnosticism was late in life and reluctant are utterly without historical merit.¹⁷¹ As noted earlier, Darwin's notebooks demonstrate quite clearly his religious skepticism and materialistic propensities as early as age 29, ideas he had been introduced to as early as age 17 as a Plinian. The Plinian Society was telling for Darwin. Despite his casual dismissal of them in his *Autobiography*, Darwin was exposed to some of the most radical free-thinking of day at those meetings. Darwin was always careful to conceal this fact because its revelation would have made plain the philosophical template through which he would make all his observations while voyaging on *The Beagle*. In short, the metaphysic preceded the science.

Is Darwinian evolution compatible with theism? It surely was never intended to be and *certainly* never intended to be compatible with Christianity, though Darwin was more than willing to enlist religious allies on its behalf. Darwin's materialism would sharpen into the undogmatic atheism or agnostic atheism described above, but materialism was the template upon which he developed his evolutionary theory to be sure. Whether Darwin was a full-blown materialist or, as Neal Gillespie believes, a positivist influenced by the ideas of Comte is to argue philosophical details that largely amount to the same thing, but Darwin was

most surely not a weak or soft agnostic who abandoned his faith slowly and reluctantly.

With Darwin in context it can be easily seen how distant Wallace had become from his senior's ideas. For all of Darwin's kindhearted support for Wallace's pension, the co-discoverer of natural selection knew his beliefs marginalized him from the new seat of scientific power and authority. For his part, Wallace always felt that he was being a more thorough explicator of Darwinian principles. He never thought much of Darwin's sexual selection and he rejected the notion of pangenesis. Wallace sided with Weismann on inheritance against Darwin's inheritance of acquired characteristics. Although Weismann failed to uncover the precise mechanisms of inheritance, he was the first to correctly outline the genetic transmission process. Slotten is correct in stating that "Wallace was among the first to recognize Weismann's genius and actively promote his ideas."¹⁷² It would take Gregor Mendel, another opponent of Darwinian evolution, to elucidate the exact processes of genetic inheritance.¹⁷³

After Darwin's death, Wallace directed most of his attentions to further expanding on his brand of Darwinism. In 1889 he published his fullest explication yet: *Darwinism: An Exposition of the Theory of Natural Selection with Some of Its Applications*. In his chapter XV he gives his complete views on "Darwinism Applied to Man." (See Appendix B for the complete excerpt of pages 473–478 in the original book.)

After outlining the many common features of *Homo sapiens* to other mammals (homological vertebrate and muscular structures, etc.), Wallace admits this is all strongly suggestive of descent from some common primordial primate. Here he is in agreement with Darwin. However, he goes on to argue that humans were the result of unique and special forces operating beyond the capacity of natural selection. The moral and intellectual capabilities of humans are unique, he argued, and are inexplicable by the principle of utility. That is to say, the moral and higher intellectual attributes of mankind do not convey any real survival advantage over their natural competitors. What survival advantage, he asks,

do mathematical, musical, or artistic abilities afford? What advantage is gained by abstract reasoning or moral sensibilities? After presenting evidence that none of these uniquely human attributes could have been produced by natural selection, Wallace concludes that these can only be accounted for by some "spiritual influx" to which "the world of matter is altogether subordinate." In short, the mind of man was inexplicable by mere survival of the fittest. Moreover, this spiritual influx was discernible in three stages of the organic world: first, in the origin of life; second, in development of consciousness, "the fundamental distinction between the animal and vegetable kingdoms"; and finally in the existence of humankind, a class different from all animal existence that is unique and unbridgeable. Wallace absolutely rejected the notion that *Homo sapiens* were the product of blind or random processes, calling it a "hopeless and soul-deadening belief" without scientific evidence or merit.

Wallace had now gone beyond man to include the origin of life and sentience in animals as clear entry points for design and purpose. While Wallace may have thought that none of this opposed Darwinian theory, others disagreed. There was talk of *Wallaceism*. Darwinian critic and author of the utopian satire *Erewhon* (1872) Samuel Butler and Dutch zoologist A. A. W. Hubrecht both used the term. But the term had been floating about even before Wallace's chapter in *Darwinism*. During Wallace's highly successful tour of the United States from the fall of 1886 through the spring of 1887, the *Boston Evening Transcript* reported November 2, 1886, on Wallace's Lowell Lecture, calling "the first Darwinian" a master "of condensed statement—as clear and simple as compact—a most beautiful specimen of scientific work." Noting Wallace's position on the unique status of man versus the lower animals, it concluded that this was as lucid a presentation of "Wallaceism" as one could hope to hear.¹⁷⁴

Nevertheless, Wallace refused the designation and even demanded an apology from Hubrecht. Wallace just refused to see that his theory was no longer Darwinian; Wallace had now become the champion of *intelligent evolution*, an evolutionary model intrinsically based upon in-

telligent design. Even his close friend Herbert Spencer tried to tell him. Upon receiving a copy of *Darwinism*, Spencer warned, "I regret that you have used the title 'Darwinism,' for notwithstanding your qualification of its meaning you will, by using it, tend greatly to confirm the erroneous conception almost universally current."¹⁷⁵

As it was, Wallace's stubborn insistence upon equating his evolutionary theory with "Darwinism," was more obfuscating than elucidating. By doing so he consigned himself to the obscurity that the Darwinian banner would surely hold for him. It was exacerbated when George John Romanes, who sought to assume the mantle of leadership following Darwin's death, accused Wallace, quite misleadingly, of "ultra-Darwinism" for his strict selectionist views.¹⁷⁶

The important point here is how this played out *in the application of natural selection to biological phenomena*. Wallace's "selectionism" was not really more "ultra," it was more sharply focused and specifically applied according to Darwin's own principles. Guided by the principle of utility, Wallace's application of natural selection was self-sufficient to explain *most* but—and *this is critical to appreciate*—*not* all (the three important exceptions previously noted) of the biological world. Darwin added pangenesis, but it was natural selection that remained central to his theory. Because Darwin was hidebound to methodological naturalism he, in effect, *had* to make natural selection do far more work than did Wallace. David Quammen is quite right when he says of Darwinian evolution, that the purposeless, impersonal and blind process of "natural selection isn't the sole mechanism of evolutionary change. But it's the primary mechanism. It's the lathe and the chisel that shape adaptation. It's the central concept of Darwinism, whatever else Darwinism might be taken to include. It's the starting point for understanding how evolution works."¹⁷⁷

Nothing this strong could be said of Wallace's concept of evolution. For Wallace, natural selection was *limited* and *constrained* by profound teleological forces and factors. Thus, Darwin applied natural selection more indiscriminately to virtually *all* aspects of nature—e.g. man—

whereas Wallace *limited* and *targeted* its application. "Ultra-Darwinism," a phrase Romanes coined in the heat of argument, misleadingly implies that Wallace's *application* of natural selection was more "ultra" when, in fact, just the opposite is true. The correct phrase should be more "self-sufficient and specifically applied" *not* more "ultra." There is a profound difference. Unfortunately Wallace himself encouraged the conflation. "I believe," Wallace wrote, "that I have extended and strengthened it [natural selection]. The principle of 'utility,' which is one of its chief foundation-stones, I have always advocated unreservedly; while in extending the principle to almost every kind and degree of coloration [a reference to Darwin's sexual selection theory], and in maintaining the power of natural selection to increase the infertility of hybrid unions [a reference to Darwin's pangenesis], I have considerably extended its range. Hence it is that some of my critics [especially Romanes] declare that I am more Darwinian than Darwin himself, and in this, I admit, they are not far wrong."¹⁷⁸

The essential problem is that this divides Darwinism across a false boundary. The question that animated Darwinism never was the extent to which natural selection could explain biological life and evolution but the degree to which a unified theory of evolution could be presented wholly resting upon naturalistic principles. Because Wallace tended to equate Darwinism with natural selection itself, he remained adamant in his loyalty to Darwinism, feeling that his was a more purist defense of the principle itself rather than sully it with subsidiary notions of sexual selection and pangenesis.

What he seems to have not fully appreciated was the degree to which Darwin and his fellow captains were wedded to methodological naturalism. It has been suggested by some that Wallace's spiritualism "caused" his break with Darwin; more accurate is the fact that Wallace's exploration of spiritualism, which he always claimed he did from a thoroughly analytical and scientific basis, permitted him a less constrained view of science.

The interesting point is that both camps saw the weaknesses of natural selection as an all-explanatory mechanism. Darwin was forced to call upon subsidiary theories in its defense; Wallace simply discerned its limits and called upon a teleological argument to offer a more coherent view of nature. Historian Martin Fichman has perhaps put it best: "Theism completed Wallace's evolutionary worldview. He saw theism, in terms of intelligent design, as providing an account of the emergence of those human traits he deemed inexplicable by natural selection and necessary for the possibility of future human progress. Wallace came to regard intelligent design as guiding certain aspects of the development of the nonhuman organic world as well."¹⁷⁹ In this sense, Wallace was surely no "ultra-Darwinist." His detractors made this charge precisely because they refused to count his theistic additions as explanations, and this not based upon any incontrovertible evidence but upon their *a priori* commitment to methodological naturalism.