

There is no Darwin Conspiracy

Todd Charles Wood, Center for Origins Research and Education, Bryan College, Dayton, TN

Abstract

Roy Davies's book *The Darwin Conspiracy* contends that Charles Darwin plagiarized his theory of evolution from Edward Blyth, Patrick Matthew, and especially Alfred Russell Wallace. In support of these contentions, Davies offers evidence of similar terminology between Darwin and Blyth/Matthew and mail delivery schedules that allowed Darwin to take advantage of Wallace's letters about evolution. Careful scrutiny of Davies's claims finds them lacking credibility. The similar terminology between Darwin and Blyth/Matthew are inconclusive. Darwin could have derived the incriminating words from other sources. The mail schedules presented by Davies are unverifiable since the letters in question are no longer extant. Given the weakness of Davies's argument, Darwin is unlikely to have plagiarized any component of his theory of evolution by natural selection.

Keywords: Darwin, Wallace, Blyth, conspiracy, natural selection, principle of divergence

Introduction

In his recent book, *The Darwin Conspiracy*, former BBC producer Roy Davies argued that Darwin's theory of evolution by natural selection was actually stolen from a variety of sources. According to Davies, Darwin began by appropriating natural selection from Edward Blyth and Patrick Matthew and concluded by stealing Alfred Russell Wallace's principle of divergence, all the while attempting to conceal his intellectual theft. Davies speculated that the guilt from these academic crimes was the source of Darwin's chronic illness.

Ironically, Davies's book itself is an unoriginal conglomeration of previous conspiracy theories about Darwin. Eiseley (1959, 1979) originally proposed that Darwin stole natural selection from Blyth and Matthew, and the Wallace-Darwin connection was explored by Brooks (1984) and Brackman (1980). To his credit, Davies did not claim originality in his "discoveries", but referenced the works of these past scholars. Unfortunately, he generally ignored rather strong evidence marshaled against his interpretation (for example, Beddall 1988; Schwartz 1974; Wells 1973).

With the impending Darwin anniversary year and the indubitable appeal of Davies's claims to creationists (judging from past commentaries on Darwin plagiarism theories: for example, Bergman, 2002; Grigg, 2004; Hedtke, 1983; Humber, 1997), it is instructive to review and evaluate these claims. It will become apparent from this evaluation that there is no "Darwin conspiracy".

Davies's Claims

Davies's arguments are complex and unwieldy. Rather than focusing on one or two alleged incidents, as past scholars have done, Davies stitches together

several different arguments to question Darwin's integrity and originality. The result is a somewhat ungainly narrative of incidents only connected by the imaginary misdeeds of Darwin. What follows is an attempt to capture the main thrust of Davies's arguments, in which some details have unfortunately been omitted for the sake of brevity.

Davies began by recounting Eiseley's (1959, 1979) argument that Darwin took the idea of natural selection not from Malthus but from Edward Blyth and Patrick Matthew. Blyth described natural selection in a series of papers published in the *Magazine of Natural History* in 1835–1837. Matthew also described a kind of evolution by natural selection in his 1831 book *On Naval Timber and Arboriculture*. In both cases, Eiseley claimed that the word choices of Darwin in his essay of 1844 and *Origin* were remarkably similar to words and phrases used by Blyth and Matthew. In Blyth's case, Darwin also used the obscure word *inosculate* (meaning to join together) in his Red Notebook in 1836 (Barrett et al. 1987, p.63), a word that Blyth used in his 1836 paper. According to Eiseley, this was the first time Darwin had used this word, and Davies claimed that "this seems to have been the only time" he used it (p.27). Eiseley credited Matthew's phrase "natural process of selection" for inspiring the term "natural selection".

Next, Davies turned his attention to Darwin's *Journal of Researches*, known better to modern readers as *Voyage of the Beagle*. Originally published in 1839, the book was reissued in a revised edition in 1845. In the interim between the two editions, Darwin had worked to develop his species theory, and the revised edition of *Journal of Researches* contained new interpretations of Darwin's original observations. For example, Darwin famously wrote of the Galápagos finches that "one might really

fancy that from an original paucity of birds in this archipelago, one species had been taken and modified for different ends" (Darwin 1845, p.380). According to Davies, these additions "were treated by Darwin as if they had appeared in exactly the same form in his original *Beagle* journal" (p.35). Davies implied that this was a means for Darwin to establish priority by giving the impression that he was already thinking about evolution aboard the *Beagle* before he ever read Blyth or Matthew.

Davies then repeated Ospovat's (1981) argument that Darwin's early ideas about evolution included the concept of perfect adaptation and that Darwin failed to see the importance of evolutionary divergence until the 1850s. According to Davies, Darwin believed that new species evolved when they migrated to new environments, such as oceanic islands. Consequently, Davies claimed that Edward Forbes's theories—that oceanic islands were the mountainous remnants of sunken continents (see Herbert 2005, pp.341–342)—threatened Darwin's species theory. This allegedly explains Darwin's obsession with proving Forbes wrong.

According to Davies, Darwin's ignorance of divergence is important because Wallace communicated the idea to Darwin in a series of papers and letters. Wallace wrote a paper in Sarawak (in modern Malaysia) explaining the "Sarawak Law": "Every species has come into existence coincident both in space and time with a pre-existing closely allied species" (Wallace 1855). According to Davies, Darwin had no clue about this precursor to evolutionary divergence, and the Sarawak Law "was a revolutionary idea" (p.60). Wallace's paper was published in the *Annals and Magazine of Natural History*, where it drew the attention of Charles Lyell, who in turn pointed it out to Darwin. Darwin's copy of Wallace's Sarawak paper is annotated, which Davies interpreted as evidence of Darwin's awareness and theft of Wallace's ideas.

Wallace wrote to Darwin first on October 10, 1856, while Davies believed that Darwin still had no clear understanding of the principle of divergence. In his response to Wallace, Darwin claimed that it arrived in April of 1857, but shipping records reported by Davies allegedly show that it must have arrived around mid-January of 1857. During that time period, Davies believed Darwin used Wallace's ideas to advance his own, and Darwin claimed the letter arrived late to conceal this from Wallace.

When Wallace wrote "On the Tendency of Varieties to Depart Indefinitely from the Original Type" in Ternate (in the present Maluku Islands) in February 1858, Davies alleged that he mailed it to Darwin immediately thereafter. Darwin claimed he received it on June 18, 1858, but once again, Davies reported

shipping records that allegedly contradict this. A letter from Wallace to Henry Bates dated March 2, 1858 was mailed at the same time, and postal marks on the envelope show that it arrived in London on June 3. Davies claimed that Darwin used the extra two weeks to expand his two-page section on evolutionary divergence in his big book *Natural Selection* to a 41-page detailed discussion (Stauffer 1975, pp.227–250), drawing directly from Wallace's work.

Davies concluded the book by arguing that Darwin cleverly lamented his situation to Lyell, in order to deceive Lyell and Hooker into believing that Darwin had priority over Wallace. Lyell then manipulated the Linnean Society into allowing a special presentation of Wallace's paper and excerpts from Darwin's September 5, 1857 letter to Asa Gray and his essay of 1842. By placing Darwin's work before Wallace's in the proceedings, Lyell and Hooker ensured Darwin's priority.

Thus, in Davies's view, Darwin perpetuated a huge fraud on Victorian society by regularly stealing ideas from others to use in his species theory and concealing his misdeeds by destroying incriminating letters and notes (for example, Wallace's first letters to Darwin are no longer extant, nor is the correspondence regarding the arrangements with the Linnean Society). Davies implied that Darwin's behavior accounts for his delay in publishing (to put distance between his work and Blyth's) and for Darwin's chronic illness.

Evaluation

Edward Blyth

For this argument, Davies relied heavily on the work of Eiseley (1959, 1979) to demonstrate Darwin's putative dependence on Blyth. Eiseley's argument consisted of nine parallels between the terminology of Blyth and Darwin and especially on the common usage of the word *inosculate*. Eiseley claimed that Darwin's use of the term on p.130 of the 1836 Red Notebook (Barrett et al. 1987, p.63) was the first time Darwin used the word, and Davies implied that this was the only time he used it. According to the argument, since *inosculate* is an obscure word that appeared in Blyth's 1836 article, Darwin must have learned the word from Blyth.

In reality, the word *inosculate* was quite common in scientific literature of Darwin's day. It occurred frequently in medical treatises, such as Robertson's 1827 *Conversations on Anatomy, Physiology, and Surgery* (p.378) and Chitty's 1836 *A Practical Treatise on Medical Jurisprudence* (p.149), including books owned by Darwin, such as Bell and Bell's 1829 *The Anatomy and Physiology of the Human Body* (p.196) (for a catalogue of Darwin's library, see Rutherford 1908). Furthermore, it appeared in Erasmus Darwin's *Zoonomia* (1800, p.550) and is featured prominently

in the quinary classification system in William Sharp MacLeay's *Horae Entomologicae*, or *Essays on the Annulose Animals* (1819–1821), both of which were familiar to Darwin.

Darwin's use of *inosculate* in the Red Notebook was not the only time he used the word. He used the word three times in the first volume of his barnacle monograph (1852, pp. 24, 57, 190) and nineteen times in the second volume (1854, pp. 15, 100 [twice], 129, 134, 135, 145–146 [six times], 149, 347, 388, 452, 511, 598, 663). Most significantly, Darwin used *inosculate* on p. 8 of Notebook B (Barrett et al. 1987, p. 172), which began with notes on *Zoonomia*.

Furthermore, Schwartz (1974) discovered that Darwin had used *inosculating* in a letter to Henslow dated November 24, 1832 (Darwin and Seward 1903, p. 12), which precedes Darwin's supposed discovery of the word in Blyth's article by four years. Darwin used the word in reference to William Sharp MacLeay's quinary system of classification. Eiseley (1959) also noted Darwin's use of the related word *osculant* in *Origin* (1859, p. 429), and *osculant* appears on p. 126 of Notebook B (Barrett et al. 1987, p. 201).

Contrary to the assertions of Eiseley and Davies, the word *inosculate* was not obscure at the time Darwin used it in 1836. It was a common term in the medical and natural history literature, and since Darwin had spent two years as a medical student in Edinburgh, it is likely that he heard it there. Darwin's grandfather had used the word in *Zoonomia*, and Darwin himself used it in a notebook that contains notes on *Zoonomia*. Finally, Darwin's acquaintance with MacLeay's quinary system gives another plausible and likely avenue for Darwin to have encountered the word. Furthermore, Davies's assertion that this was the sole occasion that Darwin used the word is false, as is Eiseley's claim that 1836 was the first time Darwin used the term.

The only remaining evidences of Darwin's alleged theft of Blyth's natural selection are nine instances of parallel terminology in Blyth's paper and Darwin's essay of 1844 and *Origin* (for detailed references, see Eiseley 1959). Schwartz (1974) does not deal with these particular instances, probably because they are generally unremarkable. Six of the instances cited by Eiseley involve references to animals or animal traits. Blyth and Darwin both made reference to grouse the color of heather, the white plumage of ptarmigans in winter, the excellent vision of hawks, animals that instinctively "play dead", and the physical degeneration of domesticated animals that do not work for their food. Blyth and Darwin also cited Ancon sheep, tailless cats, and rumpless fowl as examples of what would be called mutations in modern parlance. The remaining three similar references are somewhat more interesting. They both acknowledged

the possibility of hidden traits reemerging in the third generation, or in modern terminology, the reappearance of the recessive phenotype in the F_2 generation. They both noted that cattle living on mountain pastures are not as robust as those living on the better fodder in the valleys. They both cited Australian aborigines as examples of humans with instinctive "homing" abilities.

These nine instances of parallels between Blyth and Darwin are hardly conclusive evidence of plagiarism. One can easily imagine that some of these parallels came from common secondary sources and even from the folk wisdom of the day. Furthermore, the three slightly substantive parallels do not relate directly to the issue of natural selection, which is the alleged object of Darwin's theft. The question then returns to the issue of Blyth's concept of natural selection in comparison to Darwin's. In this regard, Schwartz (1974) emphasized that Blyth understood natural selection to be a conservative force that helped to maintain the fixity of species. It is hardly surprising then that Darwin did not immediately see what Blyth's ideas had to do with the evolution of new species. Recall that Darwin's understanding of evolution came in two stages. He was first convinced that species were mutable, and later he devised natural selection as an explanation for the origin of new species (Barlow 1958, pp. 83, 119–120). As Darwin sought for an explanation of the origin of new species, how could he take inspiration from an essay arguing the opposite of his own views?

Furthermore, as Zirkle (1941) has shown, concepts related to natural selection (for example, overpopulation and the death of the weakest members of a population) were somewhat commonplace before Darwin conceived of it as a mechanism of evolution. Schwartz (1974) argued that Darwin was familiar with the ideas about natural selection, but reading Malthus helped him to realize how they applied to the origin and adaptation of species. Thus, Darwin's writing about ideas related to natural selection prior to reading Malthus in 1838, which Davies emphasized as evidence of stealing from Blyth, are unremarkable.

Most important in this context is that Blyth became a regular correspondent with Darwin, but he never complained of any intellectual misconduct on the part of Darwin (Eiseley 1959). Even as Patrick Matthew complained that he had priority in devising natural selection after the publication of *Origin* (see below), Blyth said nothing. If Darwin was such a flagrant plagiarist, why did Blyth never notice?

Patrick Matthew

The allegation of Darwin's theft of natural selection from Patrick Matthew is based on two points of

similarity: the phrase “natural selection” and an extended quote about trees. Matthew wrote,

Man’s interference, by preventing this natural process of selection among plants, independent of the wider range of circumstances to which he introduces them, has increased the difference in varieties particularly in the more domesticated kinds (quoted in Eiseley 1959).

In the essay of 1844, Darwin wrote,

In the case of forest trees raised in nurseries, which vary more than the same trees do in their aboriginal forests, the cause would seem to lie in their not having to struggle against other trees and weeds, which in their natural state doubtless would limit the conditions of their existence (Barrett and Freeman 1987, p.60).

Based on the similarity of ideas in these two paragraphs, Eiseley and Davies claimed that Darwin used Matthew as an unrecognized source for the idea of natural selection.

A close examination of the two passages in question reveals that the alleged dependence of Darwin on Matthew is due to a misreading. Since both authors discussed the protection from selection afforded by human cultivation of trees, it is easy to overlook the differences. Matthew’s passage means that by protecting trees and preventing natural selection from working, the varieties of trees have been made more different from each other than they would otherwise be. In contrast, Darwin claimed that the release from natural selection has led to the occurrence of more variation among tree offspring than in nature. Matthew noted that protection from selection can lead to the establishment of very different varieties, while Darwin merely noted that release from selection leads to wider variation among individual trees than is apparent in nature. These differences render dubious the idea of direct dependence of Darwin on Matthew.

As to the phrase “natural selection” itself, one can hardly sustain a case of plagiarism based on two words, even such important words as these. The analogy with artificial selection that dominated Darwin’s thinking for so long immediately suggests “natural selection” as a logical expression for Darwin’s idea. He hardly needed to steal it from Matthew.

Furthermore, Wells (1973) emphasized the striking differences between Matthew’s conception of natural selection and Darwin’s. Matthew accepted natural selection as an axiom and a natural law, while Darwin emphasized the inference of natural selection from a vast array of data. Furthermore, Matthew retained a Cuvierian catastrophist view of nature in which new species originated by natural selection only after major catastrophes wiped out the previously-existing ones. Between these revolutions, natural selection acted as a conservative force to preserve the species, much like in Blyth’s articles. In contrast, Darwin sees natural

selection as always at work, imperceptibly altering organisms and gradually transforming one species into another. Given the great differences in their understanding of natural selection, the accusation of plagiarism against Darwin is unlikely.

When Matthew wrote to *The Gardeners’ Chronicle* in 1860 to claim priority over natural selection (Matthew 1860), Darwin acknowledged that Matthew had indeed anticipated the main points of natural selection thirty years prior to the publication *Origin*. At the same time, Darwin offered this comment, “I think no one will be surprised that neither I, nor apparently any other naturalist, had heard of Mr. Matthew’s views, considering how briefly they are given, and that they appeared in the appendix to a work on Naval Timber and Arboriculture. I can do no more than offer my apologies to Mr. Matthew for my entire ignorance of his publication” (Darwin 1860). Given the tenuousness of the connections described above, there is little reason to doubt Darwin. Eiseley also felt the connections between Darwin and Matthew were weak, but Davies found in the story of Matthew yet more sensationalistic evidence of Darwin’s ongoing duplicity.

Revising the Journal of Researches

Of all of Davies’s claims, this one is the oddest. Davies implied that when Darwin revised *Journal of Researches* in 1845, he inserted material into the book to make it seem as if Darwin had pondered the question of evolution while still aboard the *Beagle*. According to Davies, Darwin “completely rewrote his original Galapagos entries to take in the new ideas and information ... giving a distorted picture of how the Galapagos had struck him on the voyage ten years before” (p.36).

The crux of this claim is the idea that *Journal of Researches* was intended to represent a journal or diary kept by Darwin while aboard the *Beagle*. This is erroneous. In the original 1839 edition, Darwin wrote in the preface, “The present volume contains *in the form of a journal*, a sketch of those observations in Geology and Natural History, which I thought would possess some general interest” [emphasis added] (Darwin 1839, p.viii). In the revised edition, Darwin indicated that he “largely condensed and corrected some parts, and *have added a little to others*, in order to render the volume more fitted for popular reading” [emphasis added] (Darwin 1845, p.v). Darwin made no pretense that the original edition was any kind of faithful transcription of notes made during the voyage, and he made no effort to conceal the fact that he added material to the revised edition.

Divergence

By Davies’s account, Darwin was largely clueless

about the mechanism of evolutionary divergence until he stole it from Wallace, allegedly beginning in January, 1857. Prior to learning of Wallace's principle of divergence, Darwin supposedly believed in perfect adaptation and speciation only in new environments. The main points of his argument are derived in a distorted form from Ospovat (1981). Rather than assuming that Darwin stole ideas from Wallace, Ospovat more realistically rooted Darwin's development of divergence in his ongoing interaction with classification. Likewise, in responding to earlier claims of Darwin's intellectual theft, Beddall (1988) uncovered ideas about divergence in Darwin's writings that significantly preceded his interactions with Wallace. For an excellent review of Darwin's principle of divergence, readers should consult Kohn's (2009) essay, "Darwin's Keystone: The Principle of Divergence". Before reviewing Darwin's development of divergence, it will be helpful to discuss the significance of divergence to the evolutionary argument.

Early in his development of evolution, Darwin recognized that common descent would account for the similarity between organisms which forms the basis of classification. In his essay of 1844, Darwin wrote, "all the leading facts in the affinities and classification of organic beings can be explained on the theory of the natural system being simply a genealogical one" (Barrett and Freeman 1987, pp. 158–159). The precise explanation of classification as a result of natural selection is the subject of the principle of divergence. Darwin claimed that this was a key innovation of his theory, and indeed it is a critical part of his argument. However, to call divergence a radically different version of evolution is an exaggeration. There is more to Darwin's evolution than just divergence. Observations related to variation, the struggle for existence, the concept of natural selection, geographical evidence of species relationships, fossil succession and the incompleteness of the fossil record, and rudimentary organs all factored into Darwin's larger argument for common descent. Many of these details can be found in Darwin's essay of 1844, and they carry forward through *Natural Selection* into *Origin*. It is true that the principle of divergence was a late and important addition, but most of the content of *Origin* pre-dated that conceptual advance.

In *Origin*, Darwin (1859, p.114) defined the principle of divergence as "the greatest amount of life can be supported by great diversification of structure". Natural selection would favor divergence of structure or characters which would allow more species to live in a common region. Darwin claimed that this was "of high importance to my theory" (1859, p.111), and he directly linked it to classification through his famous branching diagram. There has been some debate

over the years over the precise date at which Darwin developed the idea, but by Darwin's own admission, it was "long after I had come to Down" (Barlow 1958, p.121).

According to Beddall (1988), there are hints of divergence in his writings as early as 1837. In Notebook B, Darwin drew several sketches of a branching tree (pp.26 and 36) and wrote,

Organized beings represent a tree *irregularly branched* some branches far more branched—Hence Genera. As many terminal buds dying as new ones generated ... The tree of life should perhaps be called the coral of life, base of branches dead; so that passages cannot be seen (Barrett et al. 1987, pp.176–177).

He described branches of the more elaborate tree diagram on p.36 of the B notebook this way, "Thus genera would be formed—bearing relation to ancient types" (Barrett et al. 1987, p.180). It is clear from these diagrams and descriptions that Darwin understood that evolution must proceed by some kind of diverging mechanism in the very same year in which he was convinced that species were mutable. What then could cause this divergence?

According to Kohn (2009), Darwin's initial conception of variability and natural selection was linked to slow geological changes, which suggested that natural variability is very small. In the Essay of 1844, Darwin opened his chapter on "variation of organic beings in a wild state" with the claim, "Most organic beings in a state of nature vary exceedingly little" (Barrett and Freeman 1987, p.63). In the rest of the chapter, Darwin developed the idea that the "tendency to vary" emerged as organisms invaded new environments made available by "exceedingly slow" geological changes (Barrett and Freeman 1987, p.65).

Darwin's initial understanding of variation in nature is contradicted by his more mature view found in *Origin*.

I could show by a long catalogue of facts, that parts ... sometimes vary in the individuals of the same species. I am convinced that the most experienced naturalist would be surprised at the number of the cases of variability, even in important parts of structure, which he could collect on good authority, as I have collected, during a course of years (Darwin 1859, p.45).

According to Kohn (2009), Darwin's decade of barnacle studies helped inspire this change by revealing that species did vary in nature, and his new understanding of natural variation gave Darwin a new way to think about the basis of natural selection. By November of 1854 (as Ospovat [1981] agreed), Darwin had begun to recognize that he needed a way to explain divergence and that divergence was somehow linked to variability. Kohn (2009) recognized three

components of divergence that Darwin recognized at this time: (1) natural variability unconnected to geological change, (2) a need for divergence without isolation on islands, and (3) an economic division of labor as an analogy to explain how species live together in the same area.

By January 1855, Darwin had written his first clear statement on the principle of divergence: "On theory of Descent, a divergence is implied & I think diversity of structures supporting more life is thus implied" (quoted in Kohn 2009). During the summer of 1855, he began arithmetical studies that would support his concept of divergence by structural diversification. Kohn (2009) argued that Darwin's quantifying of plant diversity in and around his property in Down, coupled with his botanical arithmetic (Browne 1980) that demonstrated that large genera were also wide-ranging, led to his explicit formulation of the principle of divergence by September 1856:

The advantage in each group becoming as different as possible, may be compared to the fact that by division of labour most people can be supported in each country each group itself with all its members ... are struggling against all other groups (quoted in Kohn 2009).

Just a year prior, Darwin's notes also noted that "All classification follows from more distinct forms being supported on same area" (quoted in Kohn 2009).

Thus, the principle of divergence was conceptually complete by September 1856. Darwin recognized the value of the division of labor for supporting more species in a given area. He recognized the role of the struggle for existence and natural selection in determining which species would live in a given area, and he linked the advantages of divergence directly to classification. The principle of divergence began its development prior to the publication of Wallace's Sarawak Law, and it was complete before Wallace began his correspondence with Darwin.

Forbes and Islands

A recurring theme in Davies's book is the concept that Darwin's obsession with island colonization was somehow inferior to Forbes's competing theory of continental subsidence. According to Davies, Darwin did not understand the principle of divergence and so believed that species could only originate in new environments. Thus, islands newly emerged from the sea were of crucial importance for Darwin, since they provided the new environments in which species originated. Forbes's concept of oceanic islands and their occupants as remnants of previously-existing continents directly opposed Darwin's notion of how species originate. Throughout the book, Davies gave the impression that Darwin's theory was and is inferior to Forbes's.

Davies's peculiar perspective on islands is contradicted by the general agreement today that Darwin was right about islands (for example, Carlquist 1974, p.1). Oceanic islands, such as Galápagos or Hawaii, are not the remnants of sunken continents. They are volcanic in character and emerged as barren landscapes which were subsequently colonized by the occasional introduction of species from the nearest mainland. Darwin's experiments on long-range dispersal, far from the failure that Davies depicted them as, were seminal in developing our modern understanding of the biogeography of oceanic islands. Even Wallace himself eventually doubted the role of land bridges and sunken continents in the dispersal of species (see Fichman 1977). Forbes was wrong.

Wallace's Sarawak paper

According to Davies, Wallace's Sarawak paper, "On the Law Which Has Regulated the Introduction of New Species," originally published in September 1855, "caused a huge problem for Darwin" (p.63). In the paper, Wallace stated what came to be called his Sarawak Law, "Every species has come into existence coincident both in space and time with a pre-existing closely allied species". Davies claimed that Wallace's paper was "revolutionary" (p.60) and "completely opposed" (p.63) to Darwin's understanding of speciation.

As demonstrated above, Davies's claims are at best an exaggeration. Darwin had already begun developing his principle of divergence by November 1854. Beyond that, however, other writings of Darwin prior to Wallace's paper indicate that Davies's assessment of the situation is entirely incorrect.

Beddall (1988) showed that Darwin already knew the "Sarawak Law" in the 1830s. In Darwin's Red Notebook, he wrote, "Why should two of the most closely allied species occur in the same country?" (Barrett et al. 1987, p.70). In his B notebook, Darwin also wrote, "I look at two ostriches [the rheas of South America] as strong argument of possibility of such change [transmutation of species], as we see them in space, so might they in time" (Barrett et al. 1987, p.175). Darwin had begun not merely to note the Sarawak Law but to explain it as a function of common ancestry in 1837.

The Sarawak Law was only a "revolutionary idea" to those who had not heard of it. After reading Wallace's paper, Lyell immediately became enamored with Wallace's idea. In communicating his enthusiasm to Darwin, however, Lyell found Darwin only mildly interested. As Beddall pointed out, Darwin's undated notes on the Sarawak paper highlight his ambivalence. "Nothing very new ... Uses my simile of tree ... alludes to Galapagos ... on even adjoining species being closest ... why does his law hold good" (quoted in Beddall 1988).

The connection to Galápagos highlights another difficulty with Davies's claim. According to most Darwin scholars, it was Darwin's observations of species in Galápagos that helped convince him that species were mutable (for example, Browne 1995, pp.359–361; Desmond and Moore 1991, pp.220–221; Richardson 1981; Sulloway 1982), because the endemic species of Galápagos resembled those of the nearest mainland. It was the relationship between geographic proximity and similarity of species that helped to convince Darwin that species must be derived from other species. The Sarawak Law was the very thing that convinced Darwin that species were mutable.

Despite Davies's claims, Darwin's relative indifference to Wallace's Sarawak Law arose not because Darwin was trying to hide his ongoing plagiarism, but because Darwin already knew about the relationship between species affinity and geographical proximity. In contrast to Wallace, though, he had already begun to devise a mechanism to explain the Sarawak Law.

The mail schedule

The next segment of Davies's argument hinges on the delivery dates of two letters from Wallace. According to Davies, these letters were received by Darwin on time and used by Darwin to shore up his own faulty understanding of evolution. Darwin then concealed his plagiarism by claiming that he received the letters later than he really did. As seen above, Darwin already worked out much of what Wallace might have offered him in these letters, and thus Davies's argument relies entirely on the delivery dates of the two letters in question. It was on this point that Davies most severely overstated his argument.

According to Davies, Wallace's first letter to Darwin dated October 10, 1856 left Macassar on October 31 and arrived in England on January 11, 1857. It should have been delivered to Darwin shortly thereafter, even though Darwin claimed that it had not been received until sometime in April. Wallace's second letter to Darwin apparently arrived on time. Wallace's third letter, containing a manuscript entitled "On the Tendency of Varieties to Depart Indefinitely from the Original Type" (the "Ternate paper"), was also delayed. The Ternate paper was dated February 1858, and Davies alleged that it left Ternate on March 9, 1858. It supposedly arrived in London on June 2 of the same year and should have been delivered to Darwin the next day. Darwin claimed he received it two weeks later on June 18, 1858. Davies claimed unequivocally that the "entire journey of those letters can be verified beyond doubt," and therefore the "ideas in Wallace's Ternate Law paper were plagiarised by Charles Darwin" (p.148).

It is important to realize that there is no direct evidence of any of Davies's claims about the letter delivery dates. Wallace's first letter is missing. Its existence is only inferred from Darwin's response, a letter dated May 1, 1857, which opens, "I am much obliged for your letter of Oct. 10th from Celebes received a few days ago" (Darwin 1958, p.193). From this, Davies has traced the most probable route for the letter's delivery, *assuming* that Darwin correctly recorded the date of Wallace's letter and *assuming* that Wallace sent the letter very soon after writing it. Davies recognized the vulnerability of his reasoning on a third assumption, that the mail was delivered on time, when he wrote,

The metronomic consistency of the mail service from the Malay Archipelago to London one hundred and fifty years ago, with systems in place to safeguard the mail at every stage of the journey, indicates that letters could be posted with absolute confidence in the knowledge that, acts of God notwithstanding, they would be received safely and on time on the other side of the world. (p.104)

Since there is no direct evidence of the first letter's content or delivery, it is impossible to say with confidence ("beyond doubt") that the letter arrived on time and was not unaccountably delayed.

The third letter was allegedly delayed only two weeks (the second letter arrived on time), but the evidence of its delivery is somewhat better than the first. Davies summarized McKinney's (1972) discovery of a letter from Wallace to Frederick Bates dated March 2, 1858 that still bears the postmarks indicating its delivery in Leicester on June 3, 1858. Davies claimed that this letter was sent at the same time as Wallace's third letter to Darwin, thus demonstrating that Darwin must have received Wallace's letter earlier than he claimed. Once again, however, this third letter to Darwin is missing, and consequently there is no direct evidence for Davies's assertion. Davies's argument is based on the assumption that Wallace sent the letters to Bates and Darwin at the same time and of course that the mail was delivered on time, neither of which can be presently verified.

Far from being conclusive, Davies's claims about the delivery of these two letters from Wallace are uncertain. Since neither letter is extant, there is no direct assurance of the dates on which they were posted or the dates on which they were received. Davies's circumstantial evidence, consisting entirely of delivery routes the letters might have taken, also cannot be confirmed, since there is no way to ascertain that the letters actually took the routes that he indicated. While Davies's claims about the arrival of these two letters are possible given the lack of evidence, they are neither certain nor "beyond doubt".

Editing *Natural Selection*

The significance of the early arrival of the first and third Wallace letters to Darwin arises from Darwin's ongoing project at the time, writing his "big book" *Natural Selection* (Stauffer 1975). This project was abandoned in 1858 after Wallace's third letter threatened Darwin's priority. Instead, Darwin wrote the shorter *Origin of Species*, and the more detailed *Natural Selection* was neither completed nor published in Darwin's lifetime (except for material of the first two chapters published in *Variation of Animals and Plants under Domestication*). Davies noted that the mysterious delays in Wallace's letters corresponded to revisions of *Natural Selection* that expanded its treatment of the principle of divergence. According to Davies, Darwin added a short section on divergence to *Natural Selection* in March 1857, between the alleged arrival of Wallace's first letter (January 1857) and the time Darwin claimed it arrived (April 1857). In May or June 1858, Darwin replaced those two shorter pages with 41 manuscript pages of detailed material about divergence, again coinciding with the arrival of Wallace's third letter.

Leaving aside for a moment the unresolvable question of when the letters actually arrived, what evidence is there that Darwin plagiarized from Wallace? As shown above, Darwin had already developed the principle of divergence by September 1856. The idea of divergence was originally Darwin's, and therefore Darwin could only have plagiarized the actual content or wording that Wallace wrote. This most blatant form of plagiarism is easily detected upon examining both the alleged source and the alleged copy.

In the case of Wallace's first letter, we cannot know if Darwin plagiarized anything since the source from which he allegedly plagiarized is no longer extant. Since Wallace never complained about any plagiarism, it seems unlikely that Darwin took anything directly from Wallace's first letter.

What we know of that first letter is only discernable from Darwin's response to Wallace (letter 2086; <http://www.darwinproject.ac.uk/darwinletters/calendar/entry-2086.html>), in which Darwin acknowledges reading Wallace's 1855 Sarawak paper,

I agree to the truth of almost every word of your paper; & I daresay that you will agree with me that it is very rare to find oneself agreeing pretty closely with any theoretical paper; for it is lamentable how each man draws his own different conclusions from the very same fact.

Davies found this statement to be disingenuous, since Darwin's annotated copy of the Sarawak paper indicated that Darwin was "almost entirely in opposition". This claim is false, since Darwin's notes on the Sarawak paper quoted above ("Nothing new

here") indicate that Darwin did agree with much of the paper because Darwin had already thought of everything Wallace had written.

About a year later, in June 1858, Wallace's Ternate paper arrived at Down. Although Wallace's letter is lost, the paper remains, as published in the *Proceedings of the Linnean Society* (Darwin and Wallace 1858). Contrary to claims of plagiarism, Beddall (1988) emphasized the differences between Wallace's paper and Darwin's own discussion of divergence. Whereas Wallace was primarily concerned with ecological evidences of divergence, Darwin began with domesticated organisms from which he made an analogy to the state of organisms in nature. The content of Darwin's and Wallace's writings on divergence was different. Since Darwin had already developed a principle of divergence, and since he took no wording or terminology directly from Wallace, a case of plagiarism cannot be maintained.

Furthermore, if Darwin was as devious as Davies claimed, why bother sharing Wallace's paper at all? Why not merely take what he needed and then quietly destroy Wallace's correspondence and pretend that the paper had never been received at all? Davies alleged that Darwin did precisely that to Wallace's first letter, but here the deceitful and manipulative Darwin inexplicably shared the evidence of his "plagiarism" with Lyell and Hooker. Perhaps the letters to Lyell and Hooker lamenting Darwin's loss of priority should be taken as genuine expressions of honorable frustration. Darwin recognized that a version of natural selection roughly equivalent to his own had been independently derived by Wallace, and rather than simply hide it, Darwin did the honorable thing and shared it, even though it threatened his own life's work.

As to the alleged manipulation of the Linnean Society by Lyell and Hooker, the evidence there is also absent. Correspondence of Lyell and Hooker and the original manuscript version of Wallace's paper are now lost (Beddall 1988). Since it does not involve Darwin's direct actions, it can hardly be counted as evidence of Darwin's wrongdoing.

The Argument as a Whole

Davies concluded his book by claiming that Darwin "lied, cheated, and plagiarised in order to be recognized as the man who discovered the theory of evolution" (p. 162). His principle arguments, reviewed above, have not withstood scrutiny, but is it possible that the argument as a whole is more than the sum of its parts? Even though the pieces are weak, could the entire argument contain just too many coincidences to be explained any way other than by Darwin's misdeeds? Actually, no, the argument as a whole fails just as spectacularly as the component parts.

At this point, it is helpful to remember that the book is titled *The Darwin Conspiracy*. Like other conspiracy theories, it thrives on information that is missing. There is no evidence in Darwin's notebooks or correspondence that he took anything from Blyth or Matthew, and Wallace's letters from which Darwin allegedly plagiarized are missing. Rather than concluding that evidence is merely lacking, the conspiracy theorist interprets this absence of data as sign of a conspiracy to hide the truth, in this case of Darwin's attempt to conceal evidence of his alleged wrongdoing.

But from whom was Darwin concealing evidence? How would Darwin know in 1837 when he allegedly concealed evidence of his plagiarism of Blyth that he would eventually write *Origin of Species* and become one of the most celebrated—and scrutinized—biologists of all time? Why go to such great lengths as to excise all references to Blyth when there was nothing at stake at the time?

The conspiracy theorist also indulges in reasoning that is so farfetched that it ignores more rational and likely explanations. For example, why would Darwin try to conceal his indebtedness to Blyth and Matthew by claiming that he derived natural selection from Malthus? If Darwin was so concerned about his own priority, why did he not claim to have originated natural selection himself? Perhaps Darwin did gain insight from Malthus as he claimed.

Also, as Beddall (1988) pointed out, if the principle of divergence was so important to Darwin's theory, why did he not emphasize it more in the material he gave to Lyell and Hooker to present along with Wallace's paper? Instead, Darwin gave them his essay of 1844 and a copy of a letter he had written to Asa Gray in September 1857. If Darwin was so worried about establishing his priority over the principle of divergence as Davies claimed, why not give Lyell and Hooker the 41-page section on divergence that he just completed for *Natural Selection*?

Conspiracy theorists also tend to conveniently ignore legitimate criticisms. Absent from Davies's bibliography are Schwartz's paper "Charles Darwin's Debt to Malthus and Edward Blyth" and Wells's paper "The Historical Context of Natural Selection: The Case of Patrick Matthew". Beddall's "Darwin and Divergence: The Wallace Connection," which criticizes Darwin's alleged dependence on Wallace, does appear in Davies's bibliography, although he does not seem to have benefitted from reading it. All three of these papers provide excellent answers to many of the questions that Davies raised and have been instrumental in the composition of this review of Davies's book. (Readers desiring a more detailed refutation of Davies, and especially of topics not covered here, should consult these works.)

Finally, it should come as no surprise to learn that *The Darwin Conspiracy* is not Davies's first foray into conspiracy theories. His website (<http://darwin-conspiracy.co.uk/book/author.html>) indicates that he produced several documentaries over his career on the subjects of Berengere Sauniere, who figures into the legends of a vast conspiracy to cover up Jesus' marriage to Mary Magdalene, and of Roosevelt's alleged foreknowledge of the attack on Pearl Harbor. Conspiracy theories do not originate *ex nihilo* but instead from a mind inclined to believe them.

According to Davies, these alleged evidences of Darwin's misdeeds have been ignored by Darwin scholars for more than twenty-five years, ostensibly in an effort to preserve the myth of Darwin as the great discoverer of evolution and intellectual hero of Britain. That charge can hardly be leveled at this author, an American creationist. Some readers might be wondering why a creationist would bother writing a paper defending Darwin. This work should not be seen as merely an exoneration of Darwin but as a genuine attempt to discover the truth. If Darwin had plagiarized, then that should surely be made known, but there is no evidence that he did so. The individual claims made by Davies do not withstand scrutiny, and the argument as a whole simply does not hold together. As Christians concerned with presenting the truth, creationists should avoid Davies's conspiracy theory. Love him or hate him, Darwin was the author of his theory of evolution by natural selection.

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