

Levelling Evolution

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James Costa, *Wallace, Darwin, and the Origin of Species* (Cambridge, MA: Harvard University Press, 2014), 352 pp., \$39.95 cloth.

Jonathan Conlin, *Evolution and the Victorians: Science, Culture and Politics in Darwin's Britain* (Bloomsbury Academic, 2014), xiv+235 pp., \$120.00 cloth, \$34.95 paper.

Bernard Lightman and Bennett Zon, eds., *Evolution and Victorian Culture* (New York: Cambridge University Press, 2014), xvi + 320 pp., \$95.00 cloth.

A democratization of evolutionary thought has long been in progress: James Moore's *The Post-Darwinian Controversies* (1979), Peter Bowler's *Evolution: The History of an Idea* (1984) and *The Non-Darwinian Revolution* (1988), Adrian Desmond's *Politics of Evolution* (1989), and James Secord's *Victorian Sensation* (2000) are the hallmarks of this trend, which extends the study of evolutionary paradigms to Darwin's predecessors, influences, interlocutors, rivals, mis-readers, and adapters in different classes, genders, nationalities, and disciplines. It has extended the study of evolution to different media and genres, and it has suggested how many writers resistant to Darwinian evolution nevertheless embraced other Darwinian ideas or shared other Darwinian assumptions. Reluctant to be thought to impugn Darwin's reputation, many contributors to this trend – excluding the four scholars above – tend to reiterate the now dubious novelty of their approach, as if only novel approaches could produce novel knowledge. But, however

familiar, these variously non- or circum- or a-Darwinian approaches consistently enrich the disarmingly uneven, unruly, and sometimes moving history of evolutionary thought and practice in nineteenth-century Britain. The recent works of James Costa, Jonathan Conlin, and the contributors to *Evolution and Victorian Culture*, edited by Bernard Lightman and Bennett Zon, are no exception.

Costa drafted *Wallace, Darwin, and the Origin of Species* while editing and annotating *On the Organic Law of Change* (Harvard 2013), the fascinating “Species Notebook” from Wallace’s Southeast Asian expedition (1854-62). Wallace makes an intriguing subject: a proponent of biogeography and transmutation, he was nevertheless maligned by Joseph Hooker and others for his overt spiritualism, if not his socialism, his lower social standing, and his advocacy of female suffrage. Wallace sent himself to Brazil – returning from which he lost thousands of valuable and potentially fame-making specimens as his ship went up in flames – and to the Malay, where he wrote his enchanting *The Malay Archipelago* (1869) travelogue, a new edition of which Andrew Berry just edited for Penguin Classics (2014). As many have noted, Wallace also lost credibility later in his career by insisting that the human brain could not have evolved like everything else – an exceptionalist assertion that counters the very logic with which Wallace brilliantly undermined the exceptionalist claims of Lyell and others. “Wallace may have always harbored misgivings about extending natural selection to human intellectual and moral capacity,” Costa writes, “and seemed to have become increasingly theistic in his view of humans over time (though certainly he was never religiously orthodox)” (62). Darwin’s religious reservations were more conservative to begin with and attenuated over time, but Costa rightfully objects that “Wallace’s later ‘heresies’ have too often distracted from the fact that he was deeply admired by Darwin, Lyell, Huxley, and Hooker for his talent, perseverance, and the depth and breadth of his insights” (62). Posterity should ignore their élitist social and moral qualms for their good intellectual taste and reaffirm Wallace’s significance.

Costa interprets Wallace’s notes as the prescription for what might have become his own “On the Origin of Species,” had not Darwin beat him to it.

As Costa reminds us, Wallace, an autodidact comparatively new to natural history, submitted and deferred to Darwin, who was already an established expert. Costa sets the chronology straight. He sharply delineates the similarities and differences between Wallace's and Darwin's transmutational thinking leading up to 1859. Wallace's book-that-never-was, Costa suggests, would have likely posited Lyell's anti-transmutational claims as its foil and would have justified its position on transmutation with consilient evidence from his 1855 Sarawak Law paper ("On the Law Which Has Regulated the Introduction of New Species") and his 1858 Ternate essay ("On the Tendency of Varieties to Depart Indefinitely from the Original Type"), which outlined the mechanism of species transmutation. The Ternate essay famously prompted Charles Lyell and Joseph Hooker to urge Darwin to finish and publish the long-gestating *Origin of Species*; the Ternate essay was read aloud to the Linnean Society with unpublished material of Darwin's. The earlier Sarawak Law paper postulated that "*Every species has come into existence coincident both in space and time with a pre-existing closely allied species*" (Costa 28; Wallace's italics).

Costa's first chapter concisely recounts Wallace's travels in South America and the South Pacific in a way that reasserts the evolution of his theory of transmutation by natural selection, which many critics have derided as a stroke of luck or accident. In good Victorian fashion, somewhat like Ada Lovelace or Harriet Martineau if not Lucy Snowe, Wallace "cracked the species question in a flash of insight while laid low by fever" (49). If he did solve the species problem fairly quickly, he intentionally set out to do so, and it took ten years of thought and hard travel in tough conditions. Costa points out that Wallace's career is marked by a series of silences, of critical refusals to respond to his work, rather than the vitriolic rebuttals that make writers notable or notorious. The Sarawak Law paper was largely ignored or misread (even at first by Darwin) as creationist, largely because it eschewed the keywords of transmutationism, "mutation," "modification," and "development" (31). His papers on Orangutans, which posit a common ancestor, were likewise ignored even though they importantly forward the redundancy or inutility of various organs, like the large canines in the

vegetarian orang. These observations might elsewhere come across as desperate apologies for Wallace's genius; they might elsewhere cohere in an old-fashioned history of ideas intent on finding the "true" originator of natural selection; but in Costa's hands they instead reveal the written correspondences, common readings, shared evidence, institutional maneuvers, and other material exchanges facilitating the nearly concurrent ideas of Wallace and Darwin.

Taking up William Whewell's concept of consilience as Wallace's imperative and his structuring paradigm, Costa organizes the disparate but consilient strands of transmutationist thought in the notebooks. "The Consilient Mr. Wallace" puts these in dialogue with Darwin's work to suggest that their consilience makes for a stronger theory than does the commonplace history of isolated Darwinian genius. Costa here registers Wallace's amusing impatience with arguments for design by Charles Knight, Charles Lyell, and Louis Agassiz and with natural theological "balance" and "harmony," terms that glossed over vicious struggle (71-72). With plucky retorts, Wallace complained that such writers see design in everything, including the soft spots through which growing plants emerge from seeds: "a 'wise contrivance,'" Wallace quips, as if it "would be a proof of 'the superior wisdom of some philosopher, [if] it was pointed out that in building a house he had made a door to it'" (70). The book is mostly less playful: Costa protects Wallace from modern imputations of atheism by generously speculating that he was perhaps Deistic (71) – more rational than spiritualism and more wholesome than atheism are generally reckoned to be.

Like Darwin's Transmutation Notebooks, Wallace's Species Notebook fills many gaps in his published thought, and Costa devotes his third chapter, "Wallace and Darwin," to elucidating all of these as parallels to, intersections with, and departures from Darwin's thoughts. For instance, Costa carefully – if rather repetitively – records the different thoughts that each man made of mutual readings and common evidence, such as *Didelphys* of the Oolite, a fossil marsupial (110-11); *Ctenomys*, a semi-blind burrowing rodent (112); the cells of honeybees (119); and broader concerns like geographical distribution. Complete with timelines, charts, page pdfs, and lists, the

subsequent chapters do similar, painstaking, at times annotative work with The Sarawak Law paper and Wallace's and Darwin's papers of 1858. As a reading of a notebook, *Wallace, Darwin, and the Origin of Species* is necessarily gestural, conjectural, and regretful of omissions, lines not pursued or made explicit; but Costa is unflappably cautious and grounded in his evidence. His counterfactual suppositions seem only to risk reducing Wallace's importance to his anticipation of present science. They never misleadingly muddle what Wallace wrote or didn't write. Bruno Latour has memorably affirmed that "No scholar should find humiliating the task of sticking to description" (*Reassembling the Social: An Introduction to Actor-Network Theory* [Oxford: Oxford UP: 2005], 136-37), and Costa's work is mostly a work of stunningly detailed description. It definitively settles the facts of the Darwin-Wallace question, and sets the stage for some more conjectural, interpretative work describing what the differences between the scientists' ideas might reveal about the demographic inflections of Victorian natural history, about where Wallace's subtle influences might lie, and so on. But Costa's counterfactual conceit, the idea of reconstituting the book Wallace never wrote and the speculative passages here and there implying Wallace's anticipation of recent natural historical theories, begs the question of what the history of science is and ought to be as a field. Here we have exhaustive description and contemporary polemical context, but less in the way of interpretive or conjectural history than many readers – certainly this reader – might want.

Jonathan Conlin offers in *Evolution and the Victorians* an admirable synthesis of the latest scholarship on the culture that fostered Darwin's *Origin of Species*. Outfitted with further reading suggestions and inset textboxes on related information (the Bridgewater Treatises, phrenology, *Vestiges of the Natural History of Creation*), and with a pedagogic, amiably Johnsonian tone – "Imagine you were walking across a heath and accidentally kicked a stone" (23) – Conlin recounts the origins, obstacles, and enablers of Darwin's work in what could be an ideal textbook for a course on the history of science in nineteenth-century Britain.

Conlin begins by detailing the emergence of transmutationist thought from within natural theology and writings by Robert Malthus and Adam Smith. These are apt, if familiar, representatives, ably introduced; but Conlin also integrates some nuanced arguments about how ideas traversed domains and influenced different fields of study. He explains, for example, how Smith's account of the invisible hand of the free market influenced Darwin's insight into how small advantageous mutations in individuals could accumulate over time into dramatic adaptations of species: "By showing how an 'intelligent' order could emerge out of thousands of decisions by 'dumb' individual agents Smith had proved that, contrary to what Paley said, one could have intelligent design without a designer" (38).

Conlin's intelligence and political savvy surface throughout. The Cambridge Neo-Platonist refrain about "the eternal fitness of things," popularized in Pangloss's optimistic "best of all possible worlds," turns up in different guises: "In human society as in the natural world . . . God's creatures were designed for a particular niche, and would only suffer if they somehow moved beyond it" (41); "For Paley, Malthus, and Smith, natural theology and political economy encouraged mere mortals to trust in the supreme intelligence lurking behind apparent inequality. They taught patience and contentment with one's lot, however modest" (44). Against this conservative justification of the status quo, Conlin poses Cuvier's taxonomic principles as a form of political levelling: "Cuvier did not see any of his phyla as 'higher' or 'lower' than the other" (51) and accordingly he contradicted "the great chain of being," a metaphor that had for centuries been a governing assumption of natural philosophical thought.

Darwin's less pretentious if not quite egalitarian political sensibilities enabled him to learn things that Lyell did not. He interviewed animal breeders and other people "Lyell would probably not have deigned to address, including the unnamed young man at Willis', the barber in Great Marlborough Street, London, where Darwin had his hair cut" (77); and Darwin relied on his servant, Syms Covington, for important observations on his famous finches that he did not record himself (78). The democratic politics here are depicted as inherent to genuine, inductive science. And they are of course formally

inscribed in books like these under review, which demonstrate that Darwinian natural selection, like any other idea, did not appear spontaneously in one individual natural historical genius, but were complex products of collaboration, coincidence, and cumulative thinking in different cultural domains.

Conlin details the work of Lamarck and Cuvier without subordinating them to gestural contexts or comparisons, as many Anglo-American scholars are wont to do, and this allows him to show how their disagreements and problems – such as the evidentiary problem of “transitional” or “intermediate” forms (52) – endured in Darwin’s work. It also enables Conlin to nuance Richard Owen’s influence in appropriating and adapting Lamarck and Cuvier for British audiences. Owen realized “a Peelite middle way” between intransigent, radical French transmutationist theory and the idealism of *Naturphilosophie* and traditional thinking. Owen modelled “a Peelite vision of science” that Conlin sees epitomized by the British Association for the Advancement of Science (61).

Conlin’s third and fourth chapters offer a biography of the composition of the *Origin*, including concise descriptions of the voyage of the *Beagle*; Wallace’s life, work, and relationship to Darwin; Darwin’s relationship with Hooker, including the amusing anecdote about his children filching a draft manuscript for drawing paper; and of course the role of Lyell, though he indeed might warrant more attention than he receives here, given his fundamental impact on Darwin and on evolutionary thinking generally. Following Bowler, Secord, Lightman, and many other recent historians of science, who have embraced the “history of the book” and the “history of reading” as their primary methodologies, Conlin appreciates diffusive, unwieldy forms of evolutionary thought rather than exacting analyses of Darwin’s ideas alone, because readers variously and stubbornly appropriated Darwin’s writing in competing, divergent ways. “We need to study not only what this or that evolutionist said,” he writes, “but also (more importantly, perhaps) what their audience heard” (96). This audience includes Thomas Huxley and Samuel Wilberforce, in writing about whom Conlin observes how “twentieth-century views of the history of science as a struggle against the

obstructionism of the churches” have distorted historical understanding of how much the Anglican church in particular played in promoting and developing evolutionary thought and how much respect many detractors of evolutionary thought paid to natural science and never mind how much respect natural scientists paid to Christianity.

Particulars of such respect are the subject of Chapter Five, which describes Charles Kingsley’s unique articulation of evolution as a paradigm for Christian “recapitulation.” In place of “a catastrophist, saltationist model” of damnation or salvation, Kingsley offers “a uniformitarian, steadily evolving one” that allows for degenerative and ameliorative changes (125). Invested in metempsychosis, Kingsley described evolutionary changes as bodily expressions of a soul’s ongoing relationship with God. Kingsley thus rebutted the “moral inertia” (124) of Malthus and others and appreciated sciences that “replace comforting certainties – which usually turned out to be wrong – with unsettling hypotheses that multiplied mysteries” (127). Less pointed and clear, Chapter 7 makes similar claims regarding Herbert Spencer’s presentation of evolution not as “a secular assault on Christianity or belief” but as a “faith in itself” (172), a readily appropriated conviction that – contrary to so many critiques of capitalism and modernity – “everything evolved ‘from the homogenous to the heterogenous’” (162). Productively rejecting the tendency to reduce Spencer’s career to *Man versus the State*, Conlin underscores how, “as a ‘Social Darwinist,’” he has been “blamed both for libertarian opposition to any state intervention *and* for a despicable abuse of state intervention” (170). Evolution functioned less as the theory of natural selection described by Darwin than a readily appropriated alternative mode of faith.

The interesting Chapter 9 on Alfred Wallace likewise describes a kind of evolutionary faith, noting that socialists, communists, and anarchists all justified their beliefs with evolution. For Wallace, Conlin argues, evolution animated not just diversity of organisms but also diversity of ideas; and “Seen in this way, evolution becomes a process of increasing the universe’s sustainability, that is, its ability to maintain life, in as many forms as possible” (198). Conlin depicts Wallace here not as the unfortunately overshadowed and kookily spiritualist co-discoverer of evolution but as an optimistic, forward-

thinking and whole-minded scientist who envisioned evolution not as a zero-sum competition for survival but as a mechanism for optimizing the variety and potential of available resources. In place of cut-throat survival of the fittest and laissez-faire, Wallace proffered evolution as a politics of physical, social, political, and spiritual richness.

Abridging the highlights of Bernard Lightman's rich *Victorian Popularizers of Science* (2007), Conlin's enjoyable Chapter 8 catalogs some of the homes of Victorian evolutionary science, from pubs and gin palaces that hosted various working-class scientists and enthusiasts; to popular satirical, practical, and collectible publications by the likes of Arabella Buckley and Frances Orpen Morris; to zoos, dinosaur parks, and the Natural History Museum. This fun pastiche of scenes nicely documents how evolution, like "science," functioned less as "a fixed body of data or theories to be learnt" than as "a variety of cultural literacy" to "keep up with" (193). Chapter 6 admirably condenses summary accounts of the Governor Eyre controversy with desultory snippets of British racial theories from James Cowles Pritchard and James Hunt. Conlin sketches the disciplinary tensions between ethnography and anthropology as they manifested in the interesting feud between the Aboriginal Protection Society and the Ethnological Society of London, but the thesis – "Evolution was welcomed ... partly because it explained how a messy process characterized at different times by aggression, ignorance, greed, philanthropy, cruelty, incompetence and indifference could nonetheless reveal a higher teleology, a British-focused imperial providence" (134) – is underwhelming and underdeveloped, a rather perfunctory, generic nod at empire and race.

Editorial impositions seem to force shaded textboxes here and there into the prose, sometimes to squeeze in subjects that deserve more than a textbox, but sometimes to gesture at genuinely interesting and genuinely tangential material. But Conlin is for the most part as keenly attentive to the vital importance of "trifling differences" (89) as his subjects. His prose plays with pleasing diction, rhythm, and consonance – "One minute he was the artist possessed, quickly drawing sketches of a skull on the blackboard; another a hell-fire preacher, pounding those stupid parsons who filled parishioners'

heads with Paleyite pap” (98). He concludes with a smart contemporary re-estimation of how we have begun to rewrite what DNA is and what we thought evolution meant all over again into something closer to Conlin’s conception of Wallace’s sustainability. This is a textbook, to be sure, in its condensation of extant scholarship, its broad argument, and its accessibility to non-specialist readers, but each chapter has a genuine argument and is extraordinarily enjoyable and intellectually suggestive.

Bernard Lightman and Bennett Zon offer *Evolution and Victorian Culture*, a volume of essays that likewise divert focus from Darwin to thinkers like Frazer, Spencer, and Tylor and to a wide range of popular modes and alternative media, from dance to architecture. As a whole, the volume demonstrates how tenaciously the ideas that evolutionary thinking would seem to eradicate adhered to Victorian culture, particularly the Great Chain of Being and teleological assumptions that the world progressed from simple to complex. The chapters are authoritative, often written by the person who wrote the book on their subject, but many recycle the arguments of those books, and their formulaic structure makes for incredible redundancy. Each chapter summarizes a field, offers a thesis, explores it in a few exemplary cases, and then recapitulates its claims in a conclusion that glints at pressing questions for future scholarship. This is not model prose: the complementarity of the culture of science and the culture of humanities was “identifiably Victorian” (7) is an exemplary instance of the casual drivel that turns up throughout. “If *Evolution and Victorian Culture* teaches us anything it is that the words ‘evolution,’ ‘Victorian’ and ‘culture’ mean far more than any one thing” (14) is another.

Cannon Schmitt’s exceptional essay avoids these pitfalls. Schmitt opens with the bold assertion that “Without evolutionary theory, Victorian fiction as we know it would not exist” (17). He highlights some of the critical tradition, plumbing the relation of evolution to fiction, starting with the naturalist claims of Thomas Hardy, Edward Dowden, and Vernon Lee; touching upon Leo Justin Henkin’s compendious and thematic *Darwinism in the English Novel* (1940); and reemphasizing the turn from thematic representations of evolution to the formal or stylistic signatures of evolutionary thinking in Gillian Beer’s

Darwin's Plots (1983) and George Levine's *Darwin and the Novelists* (1988). Extending Levine's work, Schmitt maintains, "To think evolutionarily requires putting aside an anthropocentric point of view, admitting (more: taking to heart) the likelihood that humans, the product of evolution, may not be equipped to comprehend or fully describe its workings" (26). Of course, the idea that language was deemed inadequate to representing empirical reality was hardly a specifically evolutionary assumption, for it was inscribed in the longstanding motto of the Royal Society, "*nullius in verba*," but Schmitt traces some of the specific ways evolutionary idioms underscore this anxiety in Victorian fiction. Pithy interpretations of Joseph Conrad's *Heart of Darkness* and *Falk*, Sarah Grand's *The Heavenly Twins*, Grant Allen's *The Woman Who Did*, and Edward Bulwer-Lytton's *The Coming Race* nuance the ways that truth effects accrue to the language of evolution in Victorian novels. The essay ends inviting us to consider how the "freighted detail" of Victorian fiction might derive from or otherwise relate to the investment of details with significance in evolutionary theory.

Evolution and Victorian Culture also includes a fine account of "The Challenge of Evolution in Victorian Poetry": John Holmes limns how Tennyson and Clough, writing before the publication of *Origins*, anticipate four poetic modes of negotiating with the existential, social, moral, and political implications of "our evolutionary origins" (49). Holmes is admirably and extraordinarily wary about conflating all geological, teleological, paleontological, or other natural historical topoi with evolution proper, as many other scholars have sometimes done; and the payoff of this wariness is a clearer sense of the roles Tennyson and Clough played in establishing the formal conventions of Victorian poetic engagement with evolution when it became, after *Origins*, "the defining feature of the [Victorian] cosmology" that poets interpreted (59).

The third, fourth, and fifth chapter address evolutionary thinking in photography, cinema, and visual art. Elizabeth Edwards demonstrates how Victorians marshalled photography to map "anatomical minutiae" (70) and thereby make evolutionary processes visible. Photography, she says, "offered a seductive concretization of the conceptual" (87). As data and as souvenirs,

as calling cards, cabinet cards, and later postcards, photographs disseminated evolutionary ideas to scientists and laymen alike. More provocatively, however, Edwards suggests how “the evolutionary became a way of looking at photographs and eliciting meaning from them” (80). Edwards’ prose has its felicitous moments, but it is more often uncomfortable in its struggle to incorporate some useful but unwieldy theoretical touchstones. Still, Edwards manages to intimate, provocatively, how the Victorian “photography complex” (in James Hevia’s phrase) reveals the ways in which evolution had come to underwrite (what Jacques Rancière calls) the “distribution of the sensible,” that is, to govern what things were noticeable to Victorian senses and sensibilities. Oliver Gaycken similarly recounts how early cinema “constituted a new scientific tool with the ability not only to reflect but also to affect evolutionary thinking” (96), particularly how time-lapse cinematography made deep time and other concepts associated with evolution visible. Barbara Larson examines the muddier dialogic relationship between art (mostly painting) and evolutionary thought; she shows how eighteenth-century portrayals of the mimosa, with its “nervous sensibility” (130), and Humboldt’s “physiographic” landscapes prescribed how Victorians imagined the relationship between plants and humans, and how in turn those Victorian explorations of “active plant tropism” inflect Symbolism and Art Nouveau.

Kirsten Shepherd-Barr describes the many varieties of staged evolution, most of which shied away from explicit evolutionary themes and instead broached questions about sexual selection and what it means to be a mother, woman, or baby; questions of atavism, adaptation, and regeneration. In plays by Henry Arthur Jones and Robert Buchanan, “the survival of the theater itself [...] becomes a major issue, with the theatre pictured as a living organism needing either to adapt to its changing environment and its audiences (the Spencerian view of conservative playwrights like Jones) or to undergo constant renewal by experimenting with new forms” (159). Shaw and Ibsen likewise stage the Victorian reception, and often rejection, of evolutionary assumptions. Deemed a kind of experiment, the stage tested evolutionary thinking with the public. Theresa Buckland considers *Dancing in All Ages* (1895), a history of dance by Edward Scott, and *Dancing* (1895), a work of

evolutionary anthropology by Lily Scott, wife of Sir James Frazer. Working with assumptions of Herbert Spencer's regarding the primitive emotional and religious origins of dance, Scott reacts against various changes in fashion, dance styles, gender, and decorum by associating them with savagery or degeneration. Scott stresses this stadial notion of dancing as an index of cultural development away from religious, animal origins, which were closely allied with non-European cultures, through classed folk European dances, to modern European forms like ballet. Non-European dance was seen as imitative and incapable of abstract thought and reasoning (186). However racist and Eurocentric, these assumptions did legitimate dance as a subject of scholarship for they correlated it to history and human development, making dance an index of evolution and vestigial cultural practices.

The final four chapters deal with music, architecture, exhibitions, and popularization. Zon describes musical theorists' appropriations of evolution as a historicist metaphor. He categorizes musical culture as comprised of "a-Darwinians and pick-'n'-mix Darwinians," or Spencerians who "harvested what they could from Darwin" (197). Spencer appealed to Victorians because he let them have their "cake (progress) and eat it too (adaptation)" (204), and his 1857 essays "Progress: Its Law and Cause" and "The Origin and Function of Music" are the centerpieces here. Zon's most interesting point is how the "technical language historians used to describe music [...] evolved in the eighteenth century from the same morphological pool as recapitulation, doubtless reflecting the developmental nature of musical composition" (221). A Spencerian idiom and structure underwrote how music was composed, that is to say, before Spencer provided the evolutionary heuristic by which it could be recognized as such. Many architects, Carla Yanni points out, likewise appropriated Darwinian ideas rather selectively: many "ignored the materialism and randomness of Darwin's theory of evolution, and instead imagined a linear, progressive path towards some better end" (243). Yanni tracks this in the design of Britain's natural history museums, the subject of her 1999 book, *Nature's Museums*. Sadiah Qureshi documents the commercial exhibition of evolution in shows and other small venues and in world fairs which came to serve as places for anthropological research before

the 1880s, when museums replaced them. These exhibitions all capitalized on the “missing link,” Qureshi shows, and in so doing they agglomerate an array of evolutionary theories from Spencer and Darwin as well as Tylor and others.

Finally, in what amounts to a supplementary chapter or missing link of his encyclopedic *Victorian Popularizers of Science* (Chicago 2007), Lightman offers a narrative of the popularization of evolution. He rehearses James Secord’s story of Chambers’ *Vestiges of the Natural History of Creation* and summarizes the work of Tyndall, Spencer, and Huxley popularizing evolution through the International Scientific Series and middle-class periodicals. Of course, Huxley routinely left natural selection out of evolution, and Spencer extended evolution far beyond the boundaries of biology and reduced it to a transition from simplicity to complexity, homogeneity to heterogeneity. Lightman describes the roles hagiographical biographies of Darwin and 1880s children’s books played in moralizing evolution, often by wrapping it in theistic or Christian narratives. Lightman excels at recovering these motley appropriations and interpretations and adaptations of evolution. With his *Victorian Popularizers of Science* and this volume, he has now exhaustively documented the distribution of natural history across classes, domains, media, and authors in the latter half of the nineteenth century.

These books are three important, if very different, manifestations of the levelling of Darwin and a historiography driven by the professionalization of science. These works, like many others, recognize evolution as a multivalent cultural phenomenon far exceeding the control and the writings, however prolific, of one professional naturalist and his institutionally-privileged peers. They recognize the productive scientific work of workers, entertainers, and artists in different fields; most importantly they recognize the productive work of readers, for they demonstrate over and over again that the history of science in nineteenth-century Britain, as it is told now, is first and foremost a history of reading.

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