
(Aristotelian) remarks, in the *German Ideology*, about the flourishing of complex individuality in communist society.

–David Ingram

SCIENCE, CULTURE, AND EVOLUTION

Robert J. Richards: *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (Chicago and London: University of Chicago Press, 2008. Pp. xx, 551. \$39.00.)

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Ernst Haeckel's life and work has been a controversial subject among historians for decades, particularly since Daniel Gasmann's inflammatory depictions linking him to National Socialism, and more recently in Stephen Jay Gould's work. Though the verdict on the link between the radical ideologies—fringe religions, *völkisch* utopias—permeating Wilhelmine Germany and National Socialism remains unresolved, one can fairly surmise that Haeckel's work has frequently been depicted more for what it purportedly led to than what it embodied in its own uniquely sociocultural environment. Thus a fair and balanced biography of this famous German zoologist, Darwinian acolyte, talented artist, and founder of monism is long overdue. Robert J. Richards's new biography of Haeckel delivers. Richards provides a comprehensive examination of Haeckel's well-known texts, but also his letters, pamphlets, and other less known and less available sources, mostly housed in the archives of the *Ernst-Haeckel-Haus* at the Friedrich-Schiller University in Jena. Richards competently frames Haeckel's life and scientific work within the world where it was created.

Richards approaches his topic chronologically, which allows him to weave his narrative between Haeckel the professional scientist and Haeckel the private person. His introductory chapter, "Formation of a Romantic Biologist," for instance, documents Haeckel's upbringing in mid-nineteenth-century Germany. Here Richards depicts Haeckel's early family life, his "inner self" (10), his deep desire for German national unity (24), the influence of Goethe's scientific work and his model of *Urphänomene* (34–36), and his adamant anti-Catholicism (45–46). Richards's approach clarifies Haeckel's scientific claims and insights, while equally accounting for the historical context of his life and work.

Building on these links, Richards explores Haeckel's early scientific works, his early career dilemmas, and, most importantly, how he surfaced as the German voice of evolutionary theory. Richards examines his early scientific studies such as *Generelle Morphologie der Organismen* (1866) and the more accessible *Natürliche Schöpfungsgeschichte* (1868) and traces the controversies

surrounding Darwinian thought during the era. Richards unabashedly repudiates the claim by many recent scholars that Haeckel's evolutionary model did not concur with Darwin's. To make his point, Richards explains, for instance, how Haeckel's biogenetic law (the famous dictate that ontogeny recapitulates phylogeny) became the centerpiece of scientific controversy in the latter half of the nineteenth century, a debate with implications for our contemporary "culture wars," a point that Richards frequently mentions.

While Haeckel's biogenetic law has long been discredited, Richards exhibits here his intricate understanding of nineteenth-century science, as he illustrates how Darwin's own thought concurred with Haeckel's, citing examples from *Origin of Species* to draw comparative conclusions: "Darwin's formulation here is quite explicit: the embryo goes through the 'adult' morphological stages of its ancestral progenitor" (154). While the scientific proofs of this link remain controversial among today's historians of science (see the work of Lynn Nyhart, for instance), Richards cites Darwin's correspondence with Haeckel (163, 263) to offer compelling evidence that Darwin at least seemed to have no problem with Haeckel's version of evolutionary theory. Moreover, Richards competently contextualizes this debate by citing the work of many other scientists of the era, both British and German, providing the reader with a deeper understanding of the scientific and cultural stakes at play.

Another critical element of Haeckel's professional life, to which Richards also pays significant attention, is the omnipresent controversy over Haeckel's academic dishonesty. For reasons that probably will remain forever unclear, Haeckel, in his *Natürliche Schöpfungsgeschichte*, replicated the same woodcut of a single embryo and claimed it to be that of three different species. Richards, in his chapter "The Rage of the Critics," traces in detail the responses of Haeckel's contemporaries such as the Basel anatomist Ludwig Rüttimeyer, who first exposed the falsification. With these woodcuts Haeckel had attempted to demonstrate their similarity, thereby lending credence to his claim that different species possess an equivalent embryonic structure in early development before developing species-specific characteristics—a validation for his biogenetic law. Richards does not place Haeckel's falsification into question, but attempts to reevaluate the event in nineteenth-century terms rather than by present standards of academic honesty as he accuses others of doing (303–12). Haeckel's motivations and acknowledgment of guilt remain, nevertheless, vague. Haeckel gave little response to the charges of scientific fraud other than removing the images from further editions of the book (296), yet this blunder—intentional or not—haunted Haeckel throughout his life (278–80). The incident and the reactions to it proved momentous for him both professionally and personally. As Richards elaborates, "Though Haeckel would receive consoling words from Darwin about the review [Rüttimeyer's], he immediately felt the razor slash and recognized his missteps concerning the replication of clichés" (279). These examples demonstrate how Richards skillfully depicts the entanglement of personal attributes and professional consequences.

Thus Haeckel's "tragic sense of life" resulted in part from his own deeds and was not solely the result of his controversial interpretation and uncompromising propagation of Darwin's model of evolution. Whatever the cause, as Richards emphasizes, Haeckel remained a lightning rod for accusations across the cultural and political spectrum throughout his life. In fact, Haeckel bore the brunt of attacks by renowned scientists of the era such as Rudolf Virchow (Haeckel's former mentor), Emil Du Bois-Reymond, and Carl Nägeli, who even linked Haeckel to socialism and materialism. Summarizing Virchow's attitudes, Richards effectively illustrates the cultural stakes in the debate over biology during the era: "Virchow did allow that evolutionary theory could be a proper subject for research, in an effort to find demonstrable evidence for it, but stipulated that it should never be a subject for teaching, which ought only propound authenticated science" (323).

Thus Richards ably depicts Haeckel's life and work as embedded in the shifting cultural parameters of that world. Yet, importantly, Richards's approach, which assertively links Haeckel more directly than others to the renowned scientific master—Darwin—serves to refurbish Haeckel's tarnished reputation. In a sense, Richards's emphasis here manifests more than just a debate about the legitimacy of Haeckel's theory of evolution. It is also implicitly imbued with undertones of a rescue attempt, justified perhaps in the case of Haeckel—to liberate him from the post-Nazi analytical framework, which has frequently overemphasized the nineteenth-century roots of totalitarianism and fascism. Richards's second appendix corroborates this view. Here he presents a written version of a lecture delivered in 2005, which describes his proposed theoretical model for conducting the history of science (489–512). This appendix, in which Richards defines what he terms the "moral grammar of narratives," deconstructs those purported theoretical models of moral judgment that have allowed academics to link Haeckel to Nazi biology and serves as a compendium to the book's overarching themes.

In summary, Richards's book is a refreshing look at this controversial German scientist and pseudoreligious figure. Yet two caveats remain. The book waxes sentimental at times as Richards attempts to link Haeckel's professional life and work with the tragedies of his personal romantic relationships, particularly Anna his first wife, who died early in their marriage, and his later affair with Frida von Uslar-Gleichen. When Richards corroborates specific examples of Haeckel's scientific work with such private, emotional undercurrents, the validity of such links remains questionable, as Richards readily admits, and are not necessarily critical to the book's arguments. Second, the book does not adequately incorporate Haeckel's political views (attitudes toward colonialism or imperial politics, for instance) or his religious views as they became manifest in monism. Specifically, a more detailed account of Haeckel's most well-known and widely read work, *Die Welträtsel*, with its implicit social, cultural, and even political ramifications, could contribute to a deeper understanding of Wilhelmine Germany. One

senses that the story of this remarkable and complex intellectual innovator and scientist will remain a topic for further study.

—Perry Myers

CONTESTING JUDICIAL SUPREMACY

George Thomas: *The Madisonian Constitution* (Baltimore, MD: The Johns Hopkins University Press, 2008. Pp. ix, 248. \$50.00.)

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Of all the catechisms in American politics, perhaps none is so widespread yet as fundamentally misguided as the asserted truism: “The Constitution is what the Supreme Court says it is.” For those who profess their faith in it, there is no alternative form of constitutionalism other than judicial supremacy. If there is no Supreme Court to determine the constitutional boundaries beyond which the political branches cannot go, then there is no Constitution. In this important and impressive book, George Thomas fundamentally challenges this catechism. He articulates more clearly than ever before the alternative “Madisonian” Constitution, which, unlike judicial supremacy which vests all constitutional authority in one body, “is based on a refusal to vest sovereign authority in any single body” (3). Where proponents of judicial supremacy assume that it alone can solve what they view as the intractable danger of constitutional conflict if there is no supreme constitutional authority, Thomas’s approach aims to “make us more comfortable as a polity with constitutional quarrels” (7). In fact, constitutional quarrels follow from and are even encouraged by the Constitution’s separation of powers. Quoting Madison, Thomas writes: “This division [of power] necessarily invites a ‘concurrent right to expound the constitution,’ yielding multiple and conflicting views of the Constitution as an inherent—even healthy—part of the constitutional order” (15).

By describing a vision of the constitutional order that is fundamentally at odds with judicial supremacy, Thomas’s book contributes a great deal, not just to our understanding of the founders’ Constitution but also to our contemporary discourse about the judiciary’s role in politics. Moreover, as he shows well in his book, his Madisonian approach is different (and better) than the two currently dominant alternatives to judicial supremacy: departmentalism and popular constitutionalism. It is different than departmentalism insofar as departmentalism is taken to mean only “that each department is the primary interpreter of its constitutional power; that is, it interprets those provisions of the Constitution that apply to it specifically” (25). Instead, the Madisonian Constitution allows and encourages each branch to “look to the ‘whole genius’ of the Constitution” (25) as it emphasizes those virtues it was institutionally designed to achieve. Constitutional conflict arises from the inevitable friction that comes from an emphasis on different kinds of virtue. For instance, the executive’s concern for energy might come into conflict with the judiciary’s