

***H.G. Bronn, Ernst Haeckel, and the Origins of German Darwinism: A Study in Translation and Transformation.* By Sander Gliboff. Cambridge, Mass.: MIT Press. 2008. xii+259 pp. \$35.00 (hardback).**

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

Both Gliboff and Richards seek to revise earlier accounts of the origins of German Darwinism, in order to describe figures such as H.G. Bronn and Ernst Haeckel as serious scientists rather than deviant ideologues. Against claims that a mystical, idealist approach to science in Germany altered the essence of Darwinism, both authors show how German scientific research was serious and how their ideas were part of a contemporary international discussion. Both also seek to counter arguments

that Haeckel's ideas contributed to the pseudo-science of Nazism. They have largely succeeded in calling into question some of the stronger arguments of Stephen Jay Gould and Richard Weikart, among others. They do so, however, in quite different ways.

Gliboff investigates Bronn's 1860 translation of Darwin's *Origin of Species*, which has served for the past century as evidence of German misrepresentation of Darwin. Scientific writing, indeed all writing, carries with it connotations specific to national, professional, and other linguistic communities; it is not neutral or acultural. Bronn came out of a German scientific background that, Gliboff argues cogently (and in part against Richards), was replacing Romantic notions of harmony in variety with concepts of order and change that sought both to explain the growing wealth of empirical material being collected and to establish the life sciences as a *Wissenschaft*, a modern science organized around systematic, universal laws. Bronn was by no means behind the scientific level of the amateur gentleman-scientist Darwin.

Certain aspects of Darwin's *Origins* proved challenging to Bronn, however. The book contained an implicit argument with the theologian William Paley about causation and intentionality in the development of species that would have been foreign to Bronn. The term 'selection', according to Gliboff, allowed Darwin to find a position between random change and intentional, teleological creation; species were 'selected' to survive, but by an impersonal process: the 'creator' was neither an omniscient God nor pure chance. To illustrate his argument, Darwin used examples of dog- and pigeon-breeding that would have been obvious to other English country gentlemen. For a German professor trying to translate these passages, as Gliboff argues well, the references to specific kinds of pigeons and dogs must have been baffling; more important, these references allowed Darwin to be deliberately ambiguous about natural selection: did it refer to conscious breeding or objective necessity? Darwin's use of anecdotal rather than systematic evidence had to run up against the claims of German *Wissenschaft*. Despite the criticisms of later scholars, Bronn's decision to translate 'natural selection' as *Züchtung* is therefore not wholly incomprehensible: did not Darwin play precisely on the comparison of breeding and undirected development? Similarly, the use of the word *Vervollkommnung* in Bronn does not necessarily indicate a deviant German idealism: first because he was translating Darwin's word 'perfection' (!), and second because, as Gliboff shows well, Bronn himself had already moved away from a 'transcendental morphology' that assumed pure forms revealing themselves in nature. 'Perfection' was a relative rather than absolute term for Bronn, which he intended to mean better adapted to the environment, more complex and differentiated.

Both Gliboff and Richards see Haeckel's scientific work as a serious and legitimate attempt to deepen Darwin's understanding of the relationship between the tendency of an organism not to change (heredity) and its openness to change (variation). Gliboff sets aside Haeckel's later attempt to develop a new *Weltanschauung*, however, stating that Haeckel merely 'rested on his laurels' in his later years (Gliboff, 200). In the end, though, Haeckel was a serious scientist seeking to think through the implications of Darwin and posing important and difficult problems for later researchers; he was part of a 'continuing process of translation and transformation' of Darwinism (Gliboff, 203), and of the complex scientific community.

Haeckel was not just any scientist, of course. He was also a polemicist, a fanatical anti-Catholic, a racist, and the would-be founder of a new, immanentist, secular *Weltanschauung* that would replace traditional religion. Given that so much of Nazi ideology had its origins in the fertile culture of Imperial Germany, it is no surprise that later scholars would connect Haeckel with Hitler. Richards's book seeks to defend Haeckel against the charge that he was, so to speak, the missing link to Hitler. Richards's Haeckel was a man rooted in German Romanticism, skilled as a natural scientist, and permanently scarred by both his loss of faith in a personal God and the loss of his first wife. The book is engaging and provocative; its beautiful illustrations help prove Richards's point that Haeckel's notion of science had an essential aesthetic component. Richards goes further than Gliboff in defending Haeckel's science, and puts paid to the accusations that Haeckel's science of embryonic development was fundamentally fraudulent. But Richards also wants to find in Haeckel's

popularizations and metaphysical speculations a serious thinker, even a prophet, rooted in Goethe, finding in the beauty and variation of the universe solace for the loss of his own faith and his own beloved. Gliboff is less convinced, noting the ideological function of invoking Goethe in Germany. Like Gliboff, I also wonder whether Haeckel's new *Weltanschauung* is not more closely related to other post-1848 materialists, such as Feuerbach, Vogt, Büchner and Moleschott, than to Goethe (cf. Richards, pp. 314–15). Like these materialists, Haeckel attacked popular forms of institutionalized religion (an easy target)—but also the scepticism of neo-Kantian dualism, a context that Richards also notes. Richards's work is no hagiography, however; Haeckel's arrogance and hubris come through clearly.

Richards is correct to argue against a direct, causal connection between Haeckel and the Nazis. But he downplays the continuities, the resonances that are so important to cultural history. Haeckel was a eugenicist; he was a racist who believed that certain human races were naturally doomed to extinction; he sought a new form of ethics rooted in Darwinism and natural selection though he also hoped to retain traditional ethical norms. He promoted liberal pacifism, but was also a colonialist, a member of the Pan German League, and a member of the wartime Fatherland Party. He at some points opposed antisemitism; he also suggested that Jesus was Aryan, since the 'religion of love' had little to do with the 'Jewish race' (a point not noted by Richards). In short, Haeckel was one of those complex and contradictory figures, like Max Weber and Kaiser Wilhelm II, who defined Imperial Germany. Richards gives us a good, sympathetic biography of the man; works such as that of Paul Weindling still remain necessary to grasp him in his context.

Both books are important contributions to the field. First, both reject any simplistic discussion of 'good' and 'bad' Darwinism: Darwin's work posed hard problems, which could be solved in a variety of ways with a variety of effects in non-scientific realms. Second, narratives that separate the history of science from other aspects of history are wrong: without specific contexts, without attention to the presuppositions of language, such historical narratives cannot succeed.

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Peter C. Caldwell
Rice University