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Early German Darwinism reconsidered

Sander Gliboff: H. G. Bronn, Ernst Haeckel, and the Origins of German Darwinism. Cambridge, Mass. & London, England: The MIT Press, 2008, 259 pp, US \$35 HB

Georgy S. Levit · Uwe Hossfeld

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For a long period, German evolutionism has been overshadowed by the “Darwin industry” with its concentration on the Anglo-American cultural tradition. Even such a towering figure of continental Darwinism as Ernst Haeckel remained bypassed in the monographic literature. The situation changed recently, first of all, due to path-breaking books by Mario Di Gregorio (Di Gregorio, M. *From Here to Eternity*, Vandenhoeck & Ruprecht, 2005) and Robert Richards (Richards, R.J. *The Tragic Sense of Life*, Chicago, 2008). The book under consideration is one more step toward rethinking the pre-Darwinian and immediate post-Darwinian developments in German-language biology. The major objective of the book is to explore the early history of German Darwinism with a special attention to “how German Darwinism relates to Darwin’s own version” (5). To answer this question, the author explores the scientific worldview of Darwin’s German translator H. G. Bronn and the consequences of Bronn’s reading of Darwin for German evolutionism and, first of all, for Haeckel. Yet, Gliboff’s aspiration is not only to introduce new historical data, but also to rethink the very methodology of historical investigations into German science. He rejects reconstructions which represent the intellectual history as a rigid chain of influences resembling “terminal additions” in ontogeny and claims that German evolutionists “were not passive recipients of influences from the German predecessors”, but selectively constructed their research programs based on the entire range of available intellectual resources.

Proceeding from this assumption, Gliboff rebels against the interpretative tradition originating from Edward S. Russell’s understanding of pre-Darwinian German biology as a stronghold of idealistic morphology. Even the coming of

G. S. Levit (✉)

History of Science and Technology Programme, University of King’s College,
6350 Coburg Rd., Halifax, NS B3H 2A1, Canada
e-mail: georgelevit@gmx.net

U. Hossfeld

AG Biodidactics, Bienenhaus, Am Steiger 3, 07743 Jena, Germany

Darwinian evolutionism, Russell argued, did not significantly change these mental attitudes, and even Haeckel was characterized by him as an idealistic morphologist. Russell's assessment of German biology influenced Stephen J. Gould, Peter Bowler and other contemporary writers who "consciously or unconsciously" contributed to a myth of a German "special path" to modernity (24). Gliboff challenges this deep-rooted myth and in the first of five chapters re-examines pre-Darwinian German science to show that "there was more to early-nineteenth-century German biology than just morphology, more to morphology than just transcendentalism, and that even the transcendentalists were not such strict determinists and naive idealists and recapitulationists as previously supposed" (29). Beginning with the discussions around the century's turn (e.g., Blumenbach, Kielmeyer), which revolved around the attempts to apply the Newtonian model of explanation to the sciences of life, the author moves to Karl Ernst von Baer to show the ambiguity of his theoretical heritage. Gliboff's von Baer is a "revolutionary" and "reactionary" at the same time combining "a synthesis of developmental laws, transcendental archetypes, and the concept of orderly and purposeful *Entwicklung*" (53). Although an opponent of preformationism, von Baer reestablished transcendental ideas as causal agents of embryonic development. With his rejection of progress and belief that the embryo contained the idea of a certain type from the very beginning, von Baer undermined the early recapitulationism, which anyway played only a minor role in the growing evolutionism: "The intellectual path to evolution did not run through idealized types and recapitulation theory, but through comparative studies of anatomy, paleontology, and biogeography, adaptation, variation, due to environmental effects, and the contemplation of *Mannigfaltigkeit*" (59). In that sense, pre-Darwinian German biologists, with their attention to nature's manifold (*Mannigfaltigkeit*), went the way of Darwin himself. Furthermore, Bronn, who is discussed in the 2nd chapter of the book, investigated a broad range of phenomena. Gliboff reconstructs Bronn's scientific development through the 1840s and 1850s and demonstrates that he favored the ideas of gradual change and (intra-class) progress, while rejecting general transformationism (evolutionism). At the same time, seeing his theoretical system as imperfect, Bronn was open to new solutions and thus "was prepared to read Darwin's *Origin*" as a "potential solution to his own remaining problems" (86).

The third chapter is devoted to "Darwin's *Origin*" as opposed to Bronn's interpretation of Darwin's major work, which is discussed in chapter four. Gliboff's Darwin is more strongly influenced by Paley's natural theology than he is usually considered to be. Darwin's concept of selection and variation applied, among others, "Paley's conception of order and purpose" (101) and, especially, natural selection "had all the attributes of Paley's Designer" (105). For Bronn, who was intellectually shaped by the German ideal of *Wissenschaft* (pure and theory oriented scholarship), Darwin's Paleyan rhetoric made the idea of natural selection only more anthropomorphic and less credible. Correspondingly, in his review (1859) of the *Origin* and in the comments accompanying the German translation, Bronn downplayed the connections between natural and artificial selection in favor of a general picture of organic history and diversity. On the level of scientific methodology, Bronn rejected Darwin's bias to historical narratives, which "evoked

the image of the prescientific natural historian” (129). More importantly, Bronn rejected gradualism and the randomness of variation, which were characteristic of the Darwinian approach. These objections, Gliboff argues, were deeply rooted in Bronn’s ideal of *Wissenschaft* and the commitment to explanations in terms of law and necessity. Although Bronn’s translation and commentary was “better than its reputation”, it was certainly colored by the differences in Darwin’s and Bronn’s worldviews and experiences including their “contrasting social roles as professional researcher and self-supporting gentleman” (152). Bronn’s controversial translations of Darwinian terms (e.g., “favored” translated as “*vervollkommnet*” = “perfect”) resulted from his attempts to make Darwinism understandable to his German peers. All in all, Bronn bequeathed a solid, although controversial, heritage to build on and the book’s fifth chapter deals with Haeckel’s contribution to German Darwinism. The chapter is a rather summary account of Haeckel’s theorizing, with an emphasis on his *Generelle Morphologie* (1866) demonstrating, among other things, that Bronn’s language and definitions influenced Haeckel’s initial understanding of Darwin. The final section of the book (“Conclusions”) reconstructs the German pathways in evolutionary biology.

The received view insists on the persistence of transcendentalism in the German lands and overlooks Bronn’s and Haeckel’s rejection of transcendental archetypes, whereas a more thorough analysis of their works and of the process of translation demonstrates “their concerns with the signature Darwinian themes of variation, adaptation, distribution, and historical contingency” (189). Furthermore, the revision of the standard reading of Bronn and, especially, of Haeckel, is of great importance for the understanding of later developments in evolutionary biology, such as controversies around “old-school Darwinians” and Weismann’s neo-Darwinism. Among other things, Gliboff argues that, the standard story of an “eclipsed” Darwinism needs to be revised because, at that time under consideration, “no single theory can be identified as the one true Darwinism” (201).

Overall, Gliboff’s book is an insightful discussion providing the reader with innovative approaches and promising hypotheses. The author’s placing of Bronn into a broad intellectual context and his reconstruction of the first steps of German Darwinism is an important contribution to the history of evolutionary biology. Yet the book has also some shortcomings, and the most evident is the ignorance of the newest German-language literature on German evolutionism and, especially, on Haeckel and idealistic morphology. Recently published archival materials, such as Haeckel’s letters, did not find their way into the book either. The chapter on Haeckel pays little attention to monism (essentially the methodological foundation of his entire system) and, in general, reads like an abstract of a more voluminous work. Much more research on the evolution of Haeckel’s scientific *Weltanschauung* and the persistence of post-Darwinian idealistic morphology in the German lands is needed in order to develop a new picture of German evolutionism.