

Essay Review

Romantic Life and Science

ROBERT J. RICHARDS, *The Romantic Conception of Life: Science and Philosophy in the Age of Goethe*. Chicago: The University of Chicago Press, 2002. xix + 587 pp., 5 plates \$35.00 (cloth) \$20.00 (paper). ISBN 0-226-71210-9 (cloth).

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Romance has for some time been a term of dubious associations. In the seventeenth century, Thomas Burnet decried those critics who would call his *Theory of the Earth* a ‘Philosophik Romance’; in the eighteenth century, Buffon did just that, and before too long, his theory of the Earth was the subject of the same epithet. By 1780, the early days of the era of Romanticism (so early that it was not yet being called that), Goethe, an admirer of Buffon’s theory, commented with delicate irony: perhaps Buffon really had ‘written a Romance . . . for it is only by means of the Romance that the worthy public learns of extraordinary things’.¹ Burnet’s ‘Romance’, Buffon’s ‘roman’ and Goethe’s ‘Roman’ refer to fanciful tales of military prowess and chivalry. Soon, a group of people close to Goethe would claim this word for themselves, and since that time there has been learned debate about the meaning of Romanticism. In everyday speech, there is more agreement: to say someone has a ‘romantic’ view of the French Revolution, or the lives of indigenous peoples, or international relations, or most anything else serious, amounts to saying the view will not stand up to criticism, is not well-founded, is a fantasy. Even in some of the learned literature, Romanticism has the taint of standing in opposition to the Enlightenment, reason and science. At its weak-kneed worst, Romanticism stands for a loss of nerve, a lack of intellectual resolve and a retreat into reaction. It is against such caricatures that Robert J. Richards has taken up arms in *The Romantic Conception of Life: Science and Philosophy in the Age of Goethe*. Richards is by no means the first to take up the cause of science and Romanticism, but none have served it with more enthusiasm, erudition and sustained argument.

Romanticism has not captivated historians of science in the way that the Scientific Revolution and Darwinian evolution have, but for some decades now, more than a few have been inspired to explore Romanticism, *Naturphilosophie* and other topics

¹ Thomas Burnet, *The Theory of the Earth . . . The Two First Books, Concerning the Deluge, and Concerning Paradise* (London: Walter Kettilby, 1684), preface (unpaginated); Georges-Louis Leclerc, Comte de Buffon, *Histoire naturelle, générale et particulière*, 44 vols (Paris: De l’Imprimerie royale, 1749–1804), I, 182; Johann Wolfgang von Goethe to Johann Heinrich Merck, 11 October 1780, in Goethe, *Goethes Werke*, 133 vols (Weimar: Böhlau, 1887–1919), part 4, IV, 306–13 (p. 311).

long thought to be outside the mainstream of scientific development.² Much of this work has not been guided by the search for lasting contributions to science hidden in Romanticism (a misguided search, given that science changes and very few scientific contributions survive the mill of history); rather, it has sought to understand the various manifestations of Romantic science on their own terms. Recovering the past in this way has allowed historians to see that ideas once thought to be marginal or even incomprehensible (and *Naturphilosophie* has been accused of both) were taken very seriously by natural philosophers whose scientific contributions have never been in doubt. The most famous example here must be the contribution of *Naturphilosophie* to Hans Christian Ørsted's discovery of electromagnetism.³ Some historians and philosophers of science have found that *Naturphilosophie* and other such outliers can offer us insight into the nature of science. Thus, Nicholas Jardine has made a subtle argument for attending to the questions posed by scientists, including *Naturphilosophen* such as Lorenz Oken, as a way of coming to grips with scientific change.⁴ Richards takes very seriously the title of the Series, *Science and Its Conceptual Foundations*, to which *The Romantic Conception of Life* belongs. His book has a twofold thesis: that the philosophical and the scientific concepts of the German Romantics can only be appreciated by attending to the lives of the actors and, what is by far the more provocative claim, that German Romanticism is the very heart of nineteenth-century biology, the vital source and the conceptual foundation of Darwin's theory of evolution.

The Romantic Conception of Life has a tetrad structure. This is helpful for those who wish to read only one of the parts, though in so doing they would forego the profit of reading them all. Part One, 'The Early Romantic Movement in Literature, Philosophy, and Science', introduces the major figures and ideas of early German Romanticism as it took root and flourished, in a few brief, brilliant years in Jena and Weimar. Richards presents a richly detailed tableau of the passions, ideas and milieu of the German Romantics. August Wilhelm and Karl Friedrich Schlegel, Friedrich von Hardenberg (Novalis), Friedrich Wilhelm Joseph Schelling and Friedrich Daniel Schleiermacher, among others, are depicted as people whose ideas were bound up with their passions. Especially noteworthy is Caroline Böhmer Schlegel Schelling, daughter of the distinguished Göttingen biblical scholar Johann David Michaelis. Her revolutionary sentiments, intellectual prowess and physical beauty enchanted the Romantics: she wed August Schlegel, his brother Friedrich fell hopelessly in love with her, and she eventually married Schelling. For Richards, she is the archetypal Romantic muse, a feminine ideal that drew the Romantics onward to their greatest intellectual accomplishments; 'Das Ewig-Weibliche/Zieht uns hinan'.⁵ The second part, 'The Scientific Foundations of the Romantic Conception of Life', explains the transformation of eighteenth-century theories of embryological development into Romantic theories of evolution. Carl Friedrich Kilmeyer and his theory of archetypes turn out to be of unusual importance for nineteenth-century

² For an overview, see Trevor H. Levere, 'Romanticism, Natural Philosophy, and the Sciences: A Review and Bibliographic Essay', *Perspectives on Science*, 4 (1996), 463–88.

³ The Ørsted literature is large. The most recent reassessment is that of Robert M. Brain and Ole Knudsen, eds, *Hans Christian Ørsted and the Romantic Quest for Unity: Ideas, Disciplines, Practices* (Dordrecht: Kluwer, in press).

⁴ Nicholas Jardine, *The Scenes of Inquiry: On the Reality of Questions in the Sciences* (Oxford: Clarendon, 1991).

⁵ Goethe, *Faust II*, lines 12110–11, in *Goethes Werke* (note 1), part 1, XV.1, 337.

biology. Johann Friedrich Blumenbach and Immanuel Kant are part of the story, as is the physician-psychologist Johann Christian Reil, who is here presented as a figure who founded a tradition that gave rise to a Sigmund Freud⁶ (p. 270). Schelling is crucial, for he was the one to articulate a philosophical alternative to the Kantian picture, an alternative that rejected mechanistic in favour of organic categories and a ‘dynamic evolutionism’. Indeed, Schelling is *the* philosopher of Romanticism, *Naturphilosophie* and this book. The third and longest part is devoted entirely to Goethe’s morphology and its relation to his poetry and to the women in his life. And not just the women; Friedrich Schiller has his place in this part, as do many others. Goethe is not the end of Richards’s story, but there is no question he is its hero. Finally, the relatively brief Epilogue turns, or rather saltates, to Charles Darwin, who is the *telos* of the narrative. All is prefaced by an introduction concerned chiefly with definitions.

Romanticism has many kinds. By one estimate, there have been more than 600 attempts to define it, and of course, it can mean different things in different contexts.⁷ German scholarship has given us early, middle and late variants of Romanticism, and it tends to distinguish all three from Weimar Classicism, that wonderful invention of Goethe and Schiller. English speakers tend to see Romanticism in broader terms, preferring to deal with it the way naturalists do with species: they can more or less agree that a certain individual belongs to a species, even in the absence of any clear general account of the species; experienced observers know a Romantic when they see one. Thus, Isaiah Berlin saw the attempt to define Romanticism as a ‘trap’ (cited on p. 6) and counselled, in effect, to concentrate on what the Romantics said and did, to understand them, rather than try to capture them in definitions. This aside, *nobody* disputes that the group that gathered in Jena and Weimar at the close of the eighteenth century, the subjects of *The Romantic Conception of Life*, are anything other than Romantic. Some hand wringing about Goethe and Schiller will persist, but there is no question that they belong in a discussion of this remarkable cultural efflorescence.⁸ This is not good enough for Richards, who makes much of this failure to define. He distinguishes between *Naturphilosophen*, who were concerned with fundamental organic forms, or archetypes, and Romantic biologists, who held similar views but also believed that aesthetic experience and moral values were a part of science. More importantly, he sees *Naturphilosophie* and Romantic biology as evolving terms that can be fixed at certain moments within a set of causal interactions of a given context. The ‘entire development’ of these terms will amount to ‘*the meaning of Romantic biology in the eighteenth and nineteenth centuries*’ (p. 7, italics in original). All of this would be

⁶ Richards contrasts Reil’s imaginative work with that of the more prosaic Philippe Pinel, who could ‘only’ give rise to a Jean Martin Charcot. This is oddly disparaging of Charcot, given his importance for Freud’s early work on hysteria.

⁷ This estimate is Hans Eichner’s in his ‘The Rise of Modern Science and the Genesis of Romanticism’, *PMLA: Publications of the Modern Language Association of America*, 97 (1982), 8–30, (p. 8). See also Roy Porter and Mikulas Teich, eds. *Romanticism in National Context* (Cambridge: Cambridge University Press, 1988).

⁸ Richards makes much of Goethe’s claim, made late in his life in conversation with Eckermann, that Schiller proved to him he was ‘a Romantic’ against his will, e.g. pp. 3, 329–30, 430–31, 458. The German, ‘Er bewies mir, daß ich selber wider willen romantisch sei . . .’, uses the adjectival form, which translates as ‘He demonstrated to me, against my own will, that I am romantic . . .’, conversation on 21 March 1830, Johann Peter Eckermann, *Gespräche mit Goethe in den letzten Jahren seines Lebens*, 3rd ed. (Berlin: Aufbau, 1962), 548–50 (p. 549).

entirely unobjectionable, were it not that this definition of Romantic biology is intended to be so generous, or promiscuous, as to encompass Darwin. Richards knows this will strain credulity, but it would be rash to dismiss *The Romantic Conception of Life* on that account, for of this book it can be said that the sum of the first three parts is greater than that of the whole. There is much in this book that invites and provokes discussion.

There are very large scholarly industries devoted to a number of the people under study, and Richards has done a masterful job of synthesizing a very substantial body of refractory sources, his knowledge of which rivals, and at times eclipses, that of his great nineteenth-century predecessor, Rudolf Haym.⁹ Correspondence, records of conversations, diary entries and poetry bring the actors to life and enhance our understanding of their science and philosophy. Literary purists who insist that poetry must be read as literature and cannot serve history, philosophers who consider biographical detail the equivalent of intellectual gossip, and historians who have a fetish for archival research might all have objections to how Richards has gone about his work and so miss the point of it. Weimar and Jena are small places now and were much smaller in 1800. The Romantics corresponded, discussed and developed their ideas in what amounted to an ongoing conversation; Romanticism was a work in progress. Richards argues that attending to their lives, especially their passions, can give us insight into the tenor of this conversation. Having said that, it must also be said that he attends very carefully to the philosophical nuance of *Naturphilosophie*, especially as explicated by Schelling.

More than anyone else, it is Goethe who holds the many threads of *The Romantic Conception of Life* or, to use a more apt metaphor, he is the backbone of the narrative. One might imagine the story Richards tells without Schelling, but in the absence of Goethe, there would be no story to tell. It was Goethe who ensured that Schelling was offered a Chair by the University of Jena (of which the poet was a senior administrator); it was Goethe's *Wilhelm Meisters Lehrjahre* that was the inspiration for Friedrich Schlegel's theoretical waxing on Romanticism; it was Goethe who grasped, first intuitively and then explicitly, that morphology was more than an idealist fantasy; it was Goethe who outlived the disintegration of the Romantic circle and sustained its scientific legacy.

So, much has been written about Goethe that sceptics might ask if there is anything left to say.¹⁰ The primary sources alone—and these encompass not only the 130 odd volumes of works, poems, essays, diaries and letters of the Weimar edition, but also his official writings and the countless relevant books, letters and recollections written by Goethe's contemporaries—have reached the point where

⁹ Rudolf Haym, *Die romantische Schule: Ein Beitrag zur Geschichte des deutschen Geistes* (Berlin: Rudolph Gaertner, 1870). It should be noted that considerably more sources are available now than there were in the nineteenth century. For example, large parts of Goethe's papers, now in print, were then unavailable to scholars.

¹⁰ The secondary literature on Goethe's science is nothing short of enormous. There are roughly 4500 items in Günther Schmid, *Goethe und die Naturwissenschaften: eine Bibliographie*, ed. Emil Abderhalden under the auspices of the Kaiserlich Leopoldinisch-Carolinisch Deutschen Akademie der Naturforscher (Halle [Saale]: Deutsche Akademie der Naturforscher, 1940). There are several hundred items in the highly selective bibliography of Frederick R. Amrine, 'Goethe and the Sciences: An Annotated Bibliography', in *Goethe and the Sciences: A Reappraisal*, ed. Frederick R. Amrine, Francis J. Zucker and Harvey Wheeler (Boston: D. Reidel, 1987), 389–438. See also Amrine's two-volume bibliography, *Goethe in the History of Science* (New York: Peter Lang, 1996).

they too are beyond the grasp of any one person.¹¹ It is possible that even the Newton, Darwin or Einstein industries do not approach the scale of the Goethe industry.¹² Despite this, there will always be gaps. In 1797, Goethe destroyed about one thousand of his letters, an occasion for an optical observation and a typically laconic diary entry: 'Burned letters. Beautiful green colour of the flame when the paper burns close to wire mesh'.¹³ More challenging than the gaps left by such destruction are the masses of material we do have, for Goethe could be remarkably subtle at covering his tracks, even as he left behind three substantial autobiographies, *Aus meinem Leben: Dichtung und Wahrheit* (1811–1814, 1833), *Italianische Reise* (1816–17, 1829) and *Campagne in Frankreich* (1822), and took great pains to ensure that the final edition of his works with which he was directly involved was arranged in keeping with his wishes.¹⁴ Goethe's renown was unshakeable by the time the young group of Romantics started gathering in Jena. Already by the year of Schelling's birth, 1775, Goethe's reputation had spread beyond the German-speaking world, thanks to the great success of *Die Leiden des jungen Werthers* (1774, French translation 1775). Goethe was keenly aware of this, and he may be the first person to have taken such care in leaving behind a carefully crafted legacy. He often took pains to ensure that factual details were correct, but his interpretations of his life are mature reflections written decades after the facts, so to speak. Unlike many who have commented on Goethe's science, Richards is well aware of these challenges and does not seek to evade them but rather faces them directly in his re-evaluation of Goethe, who here becomes not only 'a good scientist for the time, but a good scientist for all time' (p. 408). If the vast scholarly apparatus surrounding and supporting Goethe does not give rise to new interpretations, what point does it have?

Richards's interpretation revolves around Goethe's two-year-long Italian journey, the event, and *Italianische Reise*, the book. Goethe departed for Italy, having spent time with Johann Gottfried Herder discussing the relationship between the different forms of life and speculating on its origins, and he had read and discussed Spinoza, who offered a monism that was an attractive alternative to the dualist legacy of Descartes as it persisted into the Enlightenment. Richards draws on all of this, but most important in his reconstruction is Goethe's first experience of sexual love, which took place in Italy when he was thirty-nine, with a woman he would identify in his exquisitely beautiful *Römische Elegien* only as Faustine. The *Elegien* were composed not long after his return to Weimar, when he was happily in love with Christiane Vulpius, whom he would later wed. It was in Italy that Goethe discovered the primal form of the plant, the *Urpflanze*. Drawing on all of this, and making

¹¹ The indefatigable Nicholas Boyle, Goethe's most able biographer to date, is in the process of giving the lie to this claim. See his *Goethe: The Poet and the Age*, vol. 1, *The Poetry of Desire, 1749–1790*; vol. II, *Revolution and Renunciation, 1790–1803* (Oxford: Clarendon Press, 1991, 2000).

¹² Goethe's 250th anniversary saw the publication of countless works and the completion of two major annotated editions of his collected works, *Sämtliche Werke nach Epochen seines Schaffens*, 21 vols (Munich: Carl Hanser, 1985–1998) and *Sämtliche Werke, Briefe, Tagebücher und Gespräche*, 40 vols (Frankfurt a. M., Deutscher Klassiker Verlag, 1985–1999). The *Goethe Wörterbuch* (Stuttgart: Kohlhammer, 1978–), a joint project undertaken by three major German academies of science, may well be the largest dictionary project in Germany (the fascicle beginning with 'Hosenscheißer' is in progress), larger even than the new edition of Grimm's *Historisches Wörterbuch*, which is supported by only two academies.

¹³ Goethe, diary entry for 9 July 1797 in *Goethes Werke* (note 1), part 3, II, 75.

¹⁴ Goethe, *Vollständige Ausgabe letzter Hand*, 60 vols (Stuttgart and Tübingen: Cotta, 1827–30, 1832–42).

creative use of the Fifth Elegy and its unforgettable imagery of Goethe tapping out the measure of hexameters on the back of his beloved, Richards offers up a reconstruction in which the female form and erotic love are the sources of Goethe's account of the universal leaf-structure of plants. The eternal feminine and the eternal plant become 'ideals of beauty and models for the comprehension of their many empirical instantiations'; art and nature are to be understood in similar terms, an idea of central importance for Romanticism (p. 396).

The formulation 'Beautiful nature, a beautiful woman, and the primal plant' cries out for some acknowledgement, at least, of a feminist reading (p. 397). Given how well read Richards is, one can only infer that his near total silence on such readings speaks loudly about what he thinks of them. At times, it is not only Richards's erudition, but also his interpretations that are reminiscent of the nineteenth century. His discussion of Christiane Vulpius is more sympathetic than some portraits of her (even feminists have been unkind to her), but he relies a little too heavily on the comments of other Weimarers without taking into account their prejudices. He accepts the old canards about her 'lower class' background and her alleged ignorance (p. 47). There were 'Weimaraners' (Goethe sometimes referred to his fellow citizens by the name of the dog bred by his Duke) who could never reconcile themselves to the fact that Goethe had the nerve to choose a life companion who came from the same class background as he did (he received his 'von' in 1782). Matters were only made worse when he married her. Schiller, who despite the absence of a 'von' was 'always more of an aristocrat' than Goethe,¹⁵ could be relied on to take swipes at her and Goethe's relationship with her, though not of course in the presence of his great friend, but to third parties. For some examples, by no means egregious considering what is available to choose from, see the references on pages 411–12. Weimar was small and could be very small-minded on matters of social class.¹⁶ If Christiane was so short in good qualities, why did Goethe stay with her? We get no satisfactory answer. Charlotte von Stein, the great love of Goethe's first decade in Weimar, before he journeyed to Italy, is said to have taught Goethe 'calmness in his life' just as 'calmness enters his science' (p. 367). Von Stein did teach him the courtly manner to which he was not born, but manners are not the same as calmness: his attachment to her was the source of tremendous inner turmoil. The calmness is said to have entered his science via geology, which is true in an important way, but the claim that 'vulcanists' such as Johann Carl Wilhelm Voigt believed granite was formed out of lava is simply wrong¹⁷ (p. 366).

Richards claims that nature had an 'erotic authority' for Goethe, meaning that fecund, creative nature, symbolized by the female would encompass the authority of what had previously been given to God and was now given to the human. Nature did have authority for Goethe, he did speak about 'the rights of nature', and

¹⁵ As Goethe confided to Eckermann on 4 January 1824, Eckermann (note 8), 97–101 (p. 100).

¹⁶ Richards dismisses Heinrich Heine's *Die romantische Schule* (1835) as an 'unsympathetic treatment' (18, note 3). Despite his many biases, Heine's keen awareness of the social distinctions of the Romantic era and his razor sharp wit are most worthy of attention. See his *Die romantische Schule*, in *Sämtliche Schriften*, 6 vols (Munich: Hanser, 1968–1976), III, 357–504. In any event, Heine did praise *Naturphilosophie* for its contributions to the natural sciences where 'it bore the most splendid fruits', *Zur Geschichte der Religion und Philosophie in Deutschland* in *ibid.* III, 505–641 (pp. 636–37).

¹⁷ For example, see Johann Carl Wilhelm Voigt, *Mineralogische Beschreibung des Hochstifts Fulda und einiger merkwürdigen Gegenden am Rhein und Mayn* (Dessau and Leipzig: Verlags-Kasse, 1783), where he takes a clear stand on basalt as a lava (p. 41). The origin of granite was more of a puzzle, but at this time, one would be hard-pressed to find anyone who thought it was a lava rock.

Richards does well to contrast this phrase with Schiller's Kantian 'gospel of freedom' (p. 404). However, it is by no means clear that this was an erotic authority alone.¹⁸ Goethe and Vulpius had five children, four of whom never survived infancy. After the death of the infant Carl, Goethe wrote to Schiller:

I have received your kind letter and thank you for the sympathy of which I was already assured. In such instances one does not know if it is better to let the pain take its natural course, or to find recourse in that which civilization (*Kultur*) has to offer. Should one choose the latter, as I always do, one finds only momentary comfort and I have observed that nature soon asserts her right through other crises.¹⁹

This reasoning, more profound than any Schiller had on offer, ascribes to nature rights that are more akin to thanatos than eros.²⁰ All of this points to the difficulty of capturing Goethe under a single rubric. There are many who have been taken in by the warm Italian sun he describes with such conviction, but the warmth he recalled in his sixties should not touch all that we know of him.

Many of Goethe's scientific convictions were well developed, particularly his realism, by the time he brought the twenty-three-year-old Schelling to Jena. Richards's discussion of Schelling is particularly good, not least because of the attention it gives to the development of his thought from the *Ideen zu einer Philosophie der Natur* (1797) to the *Einleitung zu dem Entwurf eines Systems der Naturphilosophie* (1799) to *Erster Entwurf eines Systems der Naturphilosophie* (1799). There is much attention to detail, but this is tempered by the recognition that Schelling was working out his ideas on the go—how could he not have been, when writing at such a furious pace? A good treatment of Schelling demands a discussion of Fichte and Kant and, again, this is handled adroitly. Schelling emerges as an idealist-realist who gave empirical science a crucial part in his *Naturphilosophie*. One can go further and say that the dichotomy between empirical science and *Naturphilosophie* (the latter was anathema to German scientists of the mid-nineteenth century onward) is a false one. The virtues of looking at biographical detail become very clear here, for it is only such knowledge that allows Richards to make the case that Schelling and Goethe met for intensive discussion of *Naturphilosophie* for about a month in the early autumn of 1799. The empirical-realist turn in Schelling is most clear in the *Einleitung*—the discussions with Goethe had their effect. If the poet-scientist gave the philosopher a deeper appreciation of nature, there is no question that the philosopher's expression of a unified account of mind and nature had tremendous appeal to the Spinozistic inclinations of the poet. Above all, Richards argues that Schelling and, especially, Goethe believed that evolution was a matter not only of the ideal-morphological relations of organism, but of temporal evolution. Many historians have rejected such claims, and undoubtedly, many will continue to do so, but Richards is, I think, right about this. His case would have been more compelling with some consideration of the

¹⁸ Goethe's ribald poem 'Der Tagebuch', suppressed until the early twentieth century (first translated into English by *Playboy* magazine) and not mentioned by Richards, has a witty un-Kantian moral: 'Duty accomplishes much; love infinitely more'. *Goethes Werke* (note 1), Part 1, V.2, 345–50 (p. 350).

¹⁹ Goethe to Schiller, 21 November 1795 in Goethe, *Goethes Briefe*, ed. Karl Robert Mandelkow, 4 vols (Munich: DTV, 1988) II, 204–205 (p. 205). Richard makes no mention of this.

²⁰ Freud's work, including *Das Unbehagen in der Kultur* (1930), has numerous references to Goethe.

geological and palaeontological evidence that had accumulated before 1800,²¹ though all we get is a very faint nod in that direction (e.g. p. 491). Goethe's fascination with geology lasted throughout his adult life, and it is quite clear that at the start of his Italian journey, he was much more interested in geology than in plants. For his part, Schelling took great interest in the attempt of his disciple Henrik Steffens to elaborate a *naturphilosophisch* theory of the Earth.²²

Despite the many merits of *The Romantic Conception of Life*, some caveats are in order. Richards has little patience with the view that the history of biology only begins in the nineteenth century. In a lengthy and learned footnote that traces the history of the word biology, Richards concludes that it is 'as applicable to the work of Aristotle' as to eighteenth- and nineteenth-century naturalists (p. 4, note 8). Even if one accepts this premise and the argument that Schelling's ideas were of great importance for the subsequent development of biology, it must be kept in mind that Schelling was concerned not with what biology would become, but with *Naturphilosophie* as a unified science and theory of science. Besides, it is a red herring to conflate the history of a word with the history of a discipline. In the beginning was the word, but institutions, journals, laboratories and museums are the things that make a discipline what it is. *The Romantic Conception of Life* is concerned with the relationship between ideas and life, but it is not concerned with the ways in which both have a very profound relationship to a society and its institutions. One can read through this book without knowing that Schelling, Schleiermacher, Fichte, Steffens and Wilhelm von Humboldt wrote the founding documents of the University of Berlin.²³ Goethe wrote about the University of Jena in his official documents, and he played no small part in running the place. Does none of this have any place in a 'history of Romantic biology', one that claims 'If a history of science attempts to explain the origin of scientific ideas—which must be its *raison d'être*—then one must surely attend to this larger environment, to the concourse of individual lives?' (p. 512) This reviewer feels greedy asking for more from a book that offers so much, but it is a pity that the 'larger environment' was not larger still.

The Epilogue cannot, in forty odd pages, be expected to make the close connection between lived experience and the development of ideas that characterizes Parts One to Three. The claim that Darwin is a Romantic, or even one of the 'German Romantics', (p. 553) has some support in Darwin's desire to find unifying patterns in the teeming, tangled bank of life, in his admiration of Alexander von Humboldt and in his acknowledgement of Goethe. There are more tenuous links, such as Darwin's comments on Mill's essay on Coleridge, who did know his Schelling (p. 544). In an earlier book, Richards made a good case for the importance

²¹ Readily available in secondary sources such as Paolo Rossi, *The Dark Abyss of Time: The History of the Earth and the History of Nations from Hooke to Vico*, transl. Lydia G. Cochrane (Chicago: University of Chicago Press, 1984); Rachel Laudan, *From Mineralogy to Geology: The Foundations of a Science, 1650–1830* (Chicago: University of Chicago Press, 1987); Martin J. S. Rudwick, *The Meaning of Fossils: Episodes in the History of Palaeontology*, 2nd ed. (Chicago: University of Chicago Press, 1985).

²² On Goethe see the useful edition of his geological writings, *Schriften zur Allgemeine Naturlehre, Geologie und Mineralogie*, ed. Wolf von Engelhardt and Manfred Wenzel, vol. 25 of *Sämtliche Werke, Briefe . . .* (note 12). Henrik Steffens, 'Über den Oxydations- und Desoxydations-Prozess der Erde', *Zeitschrift für spekulative Physik*, 1 (1800), 143–68 and Schelling's enthusiastic introduction, *ibid.*, 139–42.

²³ All five are collected in Ernst Anrich, ed., *Die Idee der deutschen Universität. Die fünf Grundschriften aus der Zeit ihrer Neubegründung durch klassischen Idealismus und romantischen Realismus* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1956).

of morphological thinking for Darwin.²⁴ Now the case goes further, and Darwin's moral theory is presented as profoundly anti-utilitarian with roots in community selection. This 'explanation resonates with theories found among the German Romantics, particularly in Schelling's thesis that absolute mind produced individual mind in its moral structures' (p. 552). Resonances alone are not enough to demonstrate connections, much less identities. There are other difficulties. Schelling's 'absolute mind' and the 'hyperbolically rational' view of the world that it implies (p. xvii) scarcely seem compatible with contingency and the crucial place it has in Darwin's theory, though Richards believes that even this obstacle can be overcome (by accepting idealism, p. 192).

Darwin has been read in remarkably different ways. Many twentieth-century commentators have read him through the lens of nineteenth-century industrial capitalism and Anglo-imperial supremacy; the anarchist and naturalist Peter Kropotkin believed that Darwin's emphasis on the struggle for existence was compatible with solidarity and mutual aid. Be that as it may, the aim of *The Romantic Conception of Life* is not to show that Darwin can be read as a Romantic, but that he *really* was one; the aim is history, not a *Roman*. The Epilogue is not, after all, a capstone on one long argument, but a promissory note that lays out where the argument will be taken, for Richards is working on a second volume that will focus on Ernst Haeckel and, one assumes, Haeckel's reading of Darwin through Romantic eyes (p. 5). This opens up a very intriguing possibility: that a major figure in nineteenth-century biology, perhaps a whole stream of nineteenth-century biology, developed an interpretation of Darwin and an evolutionary biology that really was grounded in the science of Goethe and the Romantics. I very much look forward to the publication of Richards's second volume. As for the book under review: I can think of no other work on science and Romanticism that succeeds so well in integrating the history of scientific ideas with the history of philosophy and, at the same time, conveys so strong a sense of the vitality, creativity and sheer brilliance of the German Romantics.

²⁴ *The Meaning of Evolution: The Morphological Construction and the Ideological Reconstruction of Darwin's Theory* (Chicago: University of Chicago Press, 1992).