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Review of: The Humboldt Current: Nineteenth-Century Exploration and the Roots of American Environmentalism

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stituting the unity of sense of the world that contains the actual particulars of field physics” (p. 140). Weyl’s group-theoretic proof of the uniqueness of this infinitesimal metric grounds the essential distinction between the *a priori* (infinitesimal) nature of the space and the *a posteriori* orientation of the metric that depends “on the fortuitous distribution of matter and energy” (p. 155). As much as Ryckman succeeds in showing that Weyl developed a coherent and fascinating program combining philosophy and foundational physics, he mentions only the physical reasons why Weyl came to abandon his theory after 1925. But didn’t Weyl’s 1926 “Philosophy of Mathematics and Natural Science” contain enough philosophical changes that Schlick, in his critique against Husserl (“Erleben, Erkennen, Metaphysik,” *Kant-Studien*, 1926, 31), was prompted to endorse Weyl’s new approach in a note added in second proof?

Chapters 7 and 8 amount to a veritable rehabilitation of Eddington’s philosophical views by integrating his axiomatic world-building into a largely Kantian outlook. “The necessary synthetic unity will come through a ‘world geometry’ axiomatically constructed to ensure that its invariant objects satisfy the objectivity postulate of ‘the point of view of no one in particular’” (p. 188). This led to a geometry, even more general than Weyl’s, based on an affine connection and tensorial identities that achieve the synthesis. From this *a priori* perspective, one arrives at the laws of gravitation and electromagnetism by acknowledging “that the apparatus that measures the world is itself part of the world” (p. 199). This renders Einstein’s equations definitions of matter and empty space in the sense that “the world radius of curvature everywhere supplies the standard of measured lengths with rods and clocks” (p. 233). One wishes that today’s cosmologies could be philosophically reconstructed in such a diligent way.

MICHAEL STÖLTZNER

Aaron Sachs. *The Humboldt Current: Nineteenth-Century Exploration and the Roots of American Environmentalism.* xii + 496 pp., illus., figs., bibl., index. New York: Viking Press, 2006. \$29.95 (cloth).

Aaron Sachs’s impressive study of Alexander von Humboldt’s influence on nineteenth-century American explorer-scientists reexamines terrain long familiar to historians of science and of exploration. It also advances a post-postcolonial perspective on Humboldt’s influence in the United States that is ultimately an argument

about the history of environmental thought and activism in America in general.

First of all, Sachs says that exploration science in nineteenth-century America was deeply shaped by Humboldt’s example and his work. More important, Humboldt’s immersion in native cultures and environments engendered in him an appreciation for them and a humility in the face of what he encountered. Going out to another place and returning with stories about it also encouraged in Humboldt a critical perspective about the cultures he came from. This spirit of humility and appreciation of ecological relationships, as much as Humboldt’s scientific discoveries and innovations, made up a “Humboldt current” that coursed through the efforts and accomplishments of American explorer-scientists.

The book develops its arguments mainly by telling lots of stories—really good stories—about American scientific expeditions and the explorer-scientists who led them. The exemplary American Humboldtians around whom the stories coalesce are the Antarctic explorer and author of the 1839 tale “Mocha Dick; or, The White Whale of the Pacific,” J. N. Reynolds; the mountain climber, geologist, and first head of the U.S. Geologic Survey Clarence King; a survivor of a famously ill-fated 1879 Arctic exploration, George Melville; and the wilderness wanderer, glaciologist, and nature writer John Muir. All of them followed and expanded the Humboldtian agenda of exploring unknown regions and interacting with the people who inhabited them, in the interest of science. All expressed the Humboldtian ethos of boldness combined with humility and an appreciation for the connectedness of nature and humans.

The Humboldt Current is an important corrective to the influential indictment of Humboldtian science as unalloyed imperialism by the postcolonial theorist Mary Pratt. It is also, like some of the nineteenth-century accounts of exploration that it explores, a richly textured narrative that mixes scholarly analysis and observation with personal accounts. It is often, for those who have not yet yielded to twenty-first-century demands for a short attention span, a glorious read. But the book also suffers from an excess of narrative virtue—just what constituted the “Humboldtian current” is obscured by the abundant tales Sachs tries to float in it. While he makes a convincing case for the influence of Humboldt on the principal characters of the book, his argument that exploration gave them a special understanding of natives and even made them environmental justice pioneers might be greeted with skepticism by some scholars. The depiction of Muir, whose influence on twentieth-

century American environmentalism is irrefutable, as an explorer who, before he began propagandizing for wilderness in 1892, had a compelling interest in native inhabitants as environmental subjects is especially problematic. Muir, whose preservationist ethos has been taken to task by scholars for its emphasis on “pristine” wilderness at the expense of the people who lived there, may not have received full attention for his interest in other humans. But in trying to transform Muir into an early environmental justice advocate, the book overplays its hand. In his account of his famous walk to the Gulf in 1867 Muir hardly, as Sachs asserts, attacked the “complacent social Darwinist view that white Americans were the fittest of earth’s creatures, the ones whom all the rest were meant to serve” (p. 315). He was in fact blind to the dramatic post-Emancipation reorganization of nature and humans that was going on all around him and utterly oblivious to the role that those he called “darkies” were playing in that reorganization.

The ambition of this book, not simply to analyze discrete scientific achievements but to track an entire “current” of scientific and social thought—and to fashion a readable narrative at the same time—is in places powerfully realized. Even if the answers do not satisfy, that this book also asks questions about these nineteenth-century immersions in nature and the roots of environmental thought in America is also a significant contribution. But in stretching Humboldt and those who traveled his scientific stream so that they become not just explorers and scientists but also proto-environmental justice advocates, this excellent but imperfect book, like many of the explorers it discusses, becomes the victim of ambition rather than the bearer of it.

MART A. STEWART

Felicitas Seebacher. “*Freiheit der Naturforschung!*” *Carl Freiherr von Rokitansky und die Wiener Medizinische Schule: Wissenschaft und Politik im Konflikt.* 201 pp., illus., bibl. Vienna: Austrian Academy of Sciences Press, 2006. €35 (paper).

As the title suggests, this study explores the attitudes of the pathologist Carl (later Freiherr von) Rokitansky toward scientific research and its social implications. Such an investigation for the Vienna Medical School is to be very much welcomed, as there is an enormous potential for studies of medical reform in the

Austro-Hungarian context. Born in 1804, Rokitansky faced an absolutist regime, but one that still realized that a functioning and innovative medical research establishment could bring benefits. He obtained his medical degree in 1828 and then worked as an assistant at the anatomical-pathological institute in Vienna. It was only in 1844 that anatomical pathology became a part of the medical curriculum, and Rokitansky was appointed a professor. He rose to prominence during the repressive pre-1848 revolutionary era of the *Vormärz*. Felicitas Seebacher’s carefully documented portrait shows Rokitansky as a campaigning figure, opposed to censorship, and as an advocate of academic freedom. In 1862 he delivered an academic oration on the freedom of scientific research and again made his views forcefully known in a valedictory oration. Seebacher demonstrates how pathological anatomy was fundamental for the emerging “Younger Vienna Medical School,” which excelled in diagnostics. However, the book is less an investigation of Rokitansky’s work as a scientist than of his liberal opinions. A comparison is drawn with his friend Josef Skoda, who shared the oppositional views of students and young doctors and was a pioneer in pathology. There are many parallels between the German pathologist Rudolf Virchow and Rokitansky; they seem to have shared similar views about politics and on the relations between scientific and social progress, but not on scientific issues. Virchow’s visit to Vienna is described, as is his scathing review of Rokitansky’s handbook: there is potential here for a comparative analysis of two major schools of pathology, given Virchow’s implacable hostility. Rokitansky was active in local politics and in educational and sanitary improvements. More generally, he had an interest in progressive scientific disciplines, notably anthropology, and in the search for “racial character”; he favored racial mixture as a solution to the Habsburg Empire’s nationality problems. In 1869 he supported a blend of Darwinism and Schopenhauer’s philosophy. Yet he remained a figure seeking to negotiate between the traditional and the new. This study also deals with a range of scientific and medical institutions. The book is attractively produced, with numerous illustrations (although no index); it was published as part of the bicentennial commemoration of Rokitansky’s birth.

PAUL WEINDLING