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Herve Le Guyader, *Geoffroy Saint-Hilaire: A Visionary Naturalist*. Chicago: The University of Chicago Press, 2004. 288 pp. Illustrations and index. \$45.00 U.S. (cl). ISBN 0-226-47091-1.

Review by Paul Lawrence Farber, Oregon State University.

Étienne Geoffroy Saint-Hilaire helped establish the discipline of comparative anatomy in the nineteenth century, and because of his institutional affiliations was also a central figure in the development of the life sciences.

Unfortunately, his name has been eclipsed by that of Darwin's, and today he is known mostly by specialists in nineteenth-century French history, or in the history of modern biology. Yet in his own day, he enjoyed great fame throughout Western Europe. When Muhammad-Ali, Pasha of Egypt, sent a giraffe to Charles X as a token of friendship, it was Geoffroy who traveled to Marseilles to oversee the sensational transport (by foot) of the animal to Paris. Geoffroy had traveled earlier to Egypt as part of the (decidedly less friendly) invasion of Egypt by Napoleon, and he supervised a major portion of the collection of natural history specimens in the French national museum of natural history, as well as its menagerie. During his decades as professor at the museum, Geoffroy elaborated a detailed and intriguing theory on the unity of the animal kingdom, and, late in his career, he speculated on the change of animals over time. Along with Lamarck, he became one of the best known advocates of animal evolution before Darwin.

Historians of science have appreciated Geoffroy's importance, and several excellent studies exist. Most well known are the biography by Theophile Cahn and the volume by Toby Appel on Geoffroy's famous debate with Georges Cuvier in 1830 which, allegedly, conditioned the French attitude towards evolution for many decades. Geoffroy also features prominently in histories of comparative anatomy, such as those by Bernard Balan and E. S. Russell, as well as recent histories on the background of Darwin's reception in Britain, such as Adrian Desmond's *The Politics of Evolution*. [1]

Le Guyader's 1998 study of Geoffroy, now translated by the well-known philosopher of biology Marjorie Grene, is intended as a further contribution to making Geoffroy's importance known to a broader audience. *Geoffroy Saint-Hilaire* consists of six short chapters (63 pages) reviewing the disagreement between Geoffroy and Cuvier. The remainder of the book (192 pages) is a set of translations of works by Geoffroy, Cuvier, and some of their contemporaries. The translations are excerpts from Geoffroy's *Anatomical Philosophy*, from his *Principles of Zoological Philosophy* (which has the exchanges between Geoffroy and Cuvier), plus his two memoirs on the comparative anatomy of insects and vertebrates. Three short funeral orations delivered at the death of Geoffroy provide some contemporary opinion on Geoffroy's scientific reputation.

Le Guyader contends, correctly, that it is a mistake to focus attention on just the celebrated debate between Geoffroy and Cuvier that took place in the Academy of Sciences in 1830 which was, indeed, famous and followed at a distance with great interest by such notables as Goethe. The tensions between Geoffroy and Cuvier had been long in the making, however, and the events of 1830 have to be understood as a culminating argument, not a single, spectacular incident. Although this is not exactly news, Le Guyader does a fine job of elaborating on the background of the disagreement between Cuvier and Geoffroy and the principle issues at stake for them.

The inclusion of so many translated pages of what are to the average reader today mostly incomprehensible technical material is a curious choice. Some of the pieces are not readily available, and so it is certainly an advantage to have them in a University of Chicago book that will be widely purchased by university libraries. To any but a specialist (who is likely to have read them in the original), however, the articles are difficult to penetrate without considerable commentary. Here, the chapters by LeGuyader seem to be excessively narrow. Geoffroy's relationship to Cuvier is, of course, central to an understanding of these pieces, but Geoffroy's writings refer to so many other people (French and German), and the pieces touch on so many issues that focusing on just the Cuvier-Geoffroy disagreement fails to elucidate what these articles are about. A commentary, at a minimum, should have included a general sense of who was involved in these discussions, what the context of the research was, and what

were the principal interpretations of anatomy in France and Germany at the time. The average reader is unlikely to recognize and appreciate references to Johann von Spix, Karl von Keilmeyer, and Friedrich Meckel, or to Geoffroy's colleague at the museum, Henri de Blainville, but for Geoffroy and Cuvier they were central figures in the study of comparative anatomy and their ideas of critical importance.

Le Guyader concludes his book with a brief chapter suggesting that recent advances in developmental embryology have given new meaning and significance to Geoffroy's work. Historians generally shy away from such claims because they are anachronistic and Whiggish. Le Guyader, who is a professor of developmental biology at the University of Paris (XI), finds Geoffroy's stress on the unity of animals verified by the recent discovery of genes that guide embryological development in widely divergent animals, from fruit flies to mammals. Le Guyader's insight, however, doesn't claim that Geoffroy's ideas influenced later biologists, or even that he had a strong argument for the time. In some general way, Geoffroy had ideas that resemble some contemporary ones. Or, as Le Guyader concludes, Geoffroy was right to be wrong. It is a curious parallel, perhaps, but not historically significant.

The volume has useful notes for those who wish to explore topics not explicitly discussed in the text. The translations are more literal than literary, but they adequately serve the purpose and make available to a broader audience some difficult to locate French documents.

NOTES

[1] See Théophile Cahn, *La vie et l'oeuvre de Étienne Geoffroy Saint-Hilaire* (Paris: Presses Universitaire de France, 1962); Toby Appel, *The Cuvier-Geoffroy Debate: French Biology in the Decades before Darwin* (Oxford: Oxford University Press, 1987); Bernard Balan, *L'Ordre et le temps. L'anatomie compare et l'histoire des vivants au XIXe siècle* (Paris: Vrin, 1979); E.S. Russell, *Form and Function. A Contribution to the History of Animal Morphology* (London: Murry, 1916); and Adrain Desmond, *The Politics of Evolution. Morphology, Medicine, and Reform in Radical London* (Chicago: University of Chicago Press, 1989).

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