Huxley as Scientist

T. H. Huxley's Place in Natural Science. MARIO A. DI GREGORIO. Yale University Press, New Haven, Conn., 1984. xxii, 253 pp. $25.

The literature relating to Victorian Britain's most visible scientist is now vast. And justifiably so, considering Huxley's largely successful excursions from a base in zoology, paleontology, and science popularization into territories as diverse as politics, religion, anthropology, and educational reform. The work under review includes in its bibliography more than 200 items on Huxley, a list that is not exhaustive. Perhaps it is because Huxley was a controversialist on such a variety of topics that sustained efforts to assess his actual contributions to science have been so rare. *T. H. Huxley's Place in Natural Science* attempts this assessment by examining Huxley's writings, both published and manuscript, on zoology, paleontology, and anthropology. The result is an able synthesis that, though it will not revolutionize our picture of the man, clearly contains some valuable insights.

Huxley's early zoological research focused on the morphology of marine invertebrates. Di Gregorio sees this work as dominated by the outlook of German embryologists like K. E. von Baer and their version of the "type" concept (though shorn of any Platonic or *naturphilosophisch* implications) and by a desire always to pass quickly from narrow details to general conclusions in a relentless quest to confirm nature's order and harmony (one of Huxley's few concessions to apriorism). Unfortunately Di Gregorio's analysis of Huxley's invertebrate morphology and taxonomy is burdened by a degree of technical detail that unnecessarily obscures his leading points. Some details seem to have been included for no other reason that that Huxley stated them. Illustrations from Huxley's work are included (for example, six pages of medusae), but they are not keyed directly to the text and sometimes are not satisfactorily captioned, leaving the reader uncertain as to their purpose. And efforts to show the degree to which Huxley "got it right" seem overly positivistic.

Huxley's propensity for establishing nature's order contributed to his enthusiasm for Darwinism, which in turn carried him from the static "type" concept to the theory of descent (though without clear rejection of the former). But his support of Darwin was always moderated by a dissatisfaction over natural selection's lack of experimental demonstrability and by his political desire to keep all options open. As a result, Huxley did not deploy Darwinism in his scientific memoirs until 1868, nearly a decade after his public defense of the *Origin of Species*. (In the interim he was won over to what he regarded as the more successful evolutionary approach of Darwin's German bulldog, Ernst Haeckel, who stressed the construction of phylogenies and the search for missing links, while sidestepping the question of natural selection's efficacy.) In 1868, a year in Huxley's life which for its productivity and diversity deserves a monograph in itself, he began applying evolutionary arguments to the study of extinct fossil vertebrates, principally to illuminate the relationship between dinosaurs and birds. He remained skeptical of evolution among the invertebrates for another decade. Di Gregorio documents this sequence well.

From zoology and paleontology the author turns to the study of man, the realm of greatest delicacy, and hence greatest curiosity for Victorians. He finds Huxley siding with Linnaeus in stressing the close affinities of humans with the rest of the zoological world. *Man's Place in Nature*, probably Huxley's single most influential work, is the centerpiece of this analysis. In its own time *Man's Place* was little appreciated, but its popularity has increased substantially during the 20th century. The author concludes that the apathy of the 19th century was the more appropriate response, for the essay promised more than it delivered. On the question of the taxonomic status of the races, or "persistent modifications," of mankind, Huxley insisted upon zoology, not philology—the study of anatomical affinities, not linguistic similarities—as the proper approach. From alleged zoological considerations Huxley constructed a classification of the races, but in placing his *Xanthochroi* and *Melanochroi* (northern and southern Europeans respectively) at the top and native Australians at the bottom he introduced the common but non-zoological notions of "higher" and "lower" into his scheme. Di Gregorio emphasizes that Huxley was not immune from the bias of European cultural superiority that dominated his era, but he finds Huxley much less dogmatic on the subject than most of his contemporaries.

Huxley's Place grows increasingly engaging in these later chapters. The conclusion confirms this trend by viewing Huxley's career holistically, seeking its inconsistencies and its motivations. Di Gregorio recognizes correctly that Huxley's theoretical stands were not always consistent; static Baerian "types" are not obviously compatible with a theory of descent, for example. To explain such inconsistencies, Di Gregorio recognizes that one must turn from the ideals of data and theory to the practical, political considerations of achieving stature in the Victorian scientific world. Especially fascinating is the opportunism evidenced in the tabular summary the author provides of the four media Huxley employed for scientific communication—popular works, textbooks, and "liberal" and "conservative" scientific papers—and the individualized theoretical stances he took for each medium. To appreciate the richness and complexity of these "externalities" in Huxley's life, however, the reader should supplement the present work with Adrian Desmond's *Archetypes and Ancestors* (1983).

By a rather fragile line of reasoning, Di Gregorio finds Calvinism to be the primary energizer of Huxley's workaholism. A simpler argument, stressing Huxley's rigorous mechanistic materialism, religious skepticism, preference for order over process in nature, and desire for the diffusion of scientific knowledge throughout society, would demonstrate his attachment to the program of the Enlightenment *philosophes*. Aren't Huxley's roots perhaps as much French as German?

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A Brazilian Biologist

A Permanência de Rodolpho von Ihering. Livro Jubilar pela Passagem do Primeiro Centenário do Sue Nascimento (1883–1983). MELQUÍADES PINTO PAIVA, Ed. Fundação Brasileira para a Conservação de Natureza, Rio de Janeiro, Brazil, 1984. 212 pp., illus. Paper, $8.

This slim volume is presented as a tribute to the Brazilian biologist Rodolpho von Ihering on the centenary of his birth in 1883. It contains brief outlines of his life and the importance of his scientific work presented (in Portuguese) by some 20 Brazilian scientists, many of whom knew him and worked with him before his death in 1939.

To understand von Ihering's importance in the history of Brazilian biology, one must recognize the breadth of his educational background and the limita-