

and arithmetic, but it provides no real substitutes for them. On the whole, therefore, I must confess that I found the economic chapters of the work somewhat disappointing, though in many ways highly suggestive and interesting. One hopes that the author will go on to develop these chapters into a major systematic work.

In spite of some very real defects, this is a remarkable book, just as Georgescu-Roegen is an extraordinary man. I know of no one in the intellectual community who achieves his level of competence and creativity in both the physical and the social sciences. One could almost found a sect with the sole purpose of producing a Talmud on him, of criticism and expansion. This is not a book that may appeal to a very wide circle of readers. If, however, the right 500 people were to read it, science perhaps would never be quite the same again.

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A Study of Intellectual Change

Freud and the Americans. The Beginnings of Psychoanalysis in the United States, 1876-1917. NATHAN G. HALE, JR. Oxford University Press, New York, 1971. xvi, 574 pp. \$15. Freud in America, vol. 1.

Thomas S. Kuhn's "paradigm" model of scientific innovation has been applied mostly to the physical sciences, within which systems and ideas have been relatively well defined. Now Nathan G. Hale, Jr., a historian, would like to apply Kuhn's model to the historical process by which psychoanalysis penetrated into American culture. Hale, however, wants to use, instead of cognitive systems, "styles," in the sense of life-style now familiar in personality theory. Freud's teachings came in, Hale suggests, just when a completely somatic view of human behavior and personality was at the height of a crisis, the Kuhnian stage preliminary to a scientific revolution. Freud, according to Hale, provided the model by which medical psychologists and other intellectuals could reintegrate their conceptualizations. Present-day scholars who have been uncomfortable with what they perceive as looseness of definition of Kuhnian paradigms will hardly welcome the use of an even vaguer and slipperier concept, style, even though Hale's extension may be entirely

in keeping with the psychological-sociological level of discourse appropriate for discussing paradigms.

Nor would Hale reassure anti-Kuhnians by associating with his first theme a second, that Freud was taken up by the vanguard of another revolution, that of "the repeal of reticence" about sexual matters. Although, Hale maintains, reticence and the somatic style were subtly interconnected in the minds of turn-of-the-century Americans, changes in sexual attitudes stray far from the neat models of scientific ideas with which Kuhnians are familiar. Yet Hale's application is in the spirit of the paradigm theory, and style is functional in the same way that crucial problem solving is.

Hale raises these interesting questions as general themes and chapter headings in a very detailed narrative history of a limited subject. With exhaustive coverage of sources he recounts the ways in which Americans came to know and understand the work of Freud and his followers up to about 1920. World War I as a special topic and the 1920's are to be covered in a subsequent volume. The bulk of Hale's exposition is devoted to explaining carefully what was in the European psychoanalytic literature and how American physicians and other literate Americans came to conceptualize it. Freud's American audience often saw his work in terms already familiar, especially philosophical idealism and popularized Darwinism and reductionism. Indeed, Hale suggests that virtually no current of contemporary thinking was irrelevant to Americans' understanding of psychoanalysis. Much of the text is background, consisting of social-intellectual history and Hale's popularization of psychoanalytic ideas.

Two books, at least three doctoral dissertations, and innumerable articles, biographies, and institutional histories have already elucidated much of the early history of psychoanalysis in America. Hale nevertheless chose to start over from the beginning and recapitulate details, especially how the congeries of ideas associated with Freud gained a unique place in both medical and popular writings because of the aggressive crusade carried out by such proponents as the sensitive and idealistic puritan James J. Putnam of Boston and the dedicated immigrant A. A. Brill of New York. Hale does offer many incidental insights as he explores the interplay of idea, personality, and historical change, and a leisurely reader will find these

byways rewarding. But in the mass of specifics Hale's chief themes, somaticism and sexual liberation, do not come through with the clarity and consistency they deserve. They remain tantalizing suggestions that Kuhn's model of change may be more broadly applicable to history than most thoughtful students of intellectual change have seen clearly heretofore.

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Cultural Ecology

Amazonia. Man and Culture in a Counterfeit Paradise. BETTY J. MEGGERS. Aldine-Atherton, Chicago, 1971. x, 182 pp., illus. Cloth, \$7.50; paper, \$2.95. Worlds of Man series.

Betty J. Meggers, who has undertaken the only extensive archeological research in northeastern Amazonia, has for many years been concerned with the relationship of tropical forest environments and human societies in South America. More particularly, she has advocated the view that the South American tropical rain forest is an unsuitable environment for the development and persistence of societies characterized by internal complexity, high population density, and intense agricultural exploitation. Her latest book, *Amazonia*, can in fact be considered an attempt to demonstrate why this is so.

In general, however, the aims of the book are to specify variables influencing cultural adaptation in the Amazon basin and to present a set of general principles constituting a theory of cultural evolution. Meggers has countered the usual dearth of environmental detail characteristic of cultural ecological theory concerning the Amazon basin with extensive descriptions and provocative hypotheses about the constraints and requirements imposed upon human society by particular features of the habitat. For this reason, the book should be read by all who wish to understand, modify, or preserve the tropical forest environment.

The premise of *Amazonia* is that of cultural ecology in general, namely, that "the similarity in the behavior of biological and cultural phenomena indicates that the same processes underlie both cultural and organic evolution" (p. 161). Culture is an adaptation (but also determined by adaptation) guided