address questions about the medicalization of conditions, the institutional structures of medicine, or current changes in those structures. They do not address disease concepts. In short, theirs is a very particular treatment of medicine as a social activity. Nonetheless, *The Golem* and *The Golem at Large* have proven themselves useful books for introducing pictures of science and technology as complex and uncertain human activities, and *Dr. Golem* does the same for medicine, in a way that recognizes medicine's importance to almost everybody.

SERGIO SISMONDO

Kim Cuddington; Beatrix E. Beisner (Editors). *Ecological Paradigms Lost: Routes of Theory Change*. (Theoretical Ecology.) xxxiv + 435 pp., figs., apps., index. Burlington, Mass.: Elsevier Academic Press, 2005. $79.95 (cloth).

There is a worrying tendency among young students of ecology to ignore the historical and theoretical work on which their research is based, Kim Cuddington and Beatrix Beisner note at the beginning of this anthology (p. xxi). As a remedy, they arranged a symposium about these issues at the Theoretical Section of the annual meeting of the Ecological Society of America in 2002. The result is a collection of papers addressing the history of theory changes in the field.

The anthology has two principal focuses. The first agenda is to provide an overview of the history and theory of various subfields of ecology. This is carried out through a series of reviews written by ecologists, including articles by Alan Hastings on population ecology, Hans Heesterbeek on epidemiological ecology, Anthony R. Ives on community ecology, and Robert D. Hold on evolutionary ecology. The second focus is addressed by essays discussing whether recent shifts in ecological theories represent paradigm shifts (in Thomas Kuhn's sense) or, rather, a more gradual historical buildup from simple ideas to complex theories. This part of the book includes discussions by both ecologists and philosophers of science; they address issues such as the past, present, and future use of models in population ecology, mass-action mixing in epidemiological ecology, the diversity and stability of ecological communities, and problems of uncertainty in ecological management.

None of the articles in *Ecological Paradigms Lost* contains serious historical research, and they will thus probably disappoint most historians of ecology. There are no attempts to include the growing body of literature that readers of *Isis* may associate with the history of ecology and related disciplines. There are only a couple of references to Sharon Kingsland's key book *Modeling Nature* (Chicago, 1985). This lack of appreciation for historical research into the background of ecology among its practitioners and philosophers is puzzling. It is not a result of the "science wars" or the recent tensions between, say, internal versus social historians. Scholars engaged in these debates have at least been vaguely aware of each other's point of view. Instead, one could perhaps understand the scientists' historical awareness in terms of what the ecologist Robert D. Holt calls "Capsule History" (p. 242). Methodologically, he places fragments from the history of ecology in text boxes and then discusses their relevance for his own research. This discussion from the point of view of a "capsule" is a telling image of how ecologists proceed when reflecting on their discipline's history.

The contributions from the philosophers of ecology should be closer to home for historians of science. Jay Odenbaugh has written a fine discussion of unstructured and structured models of population ecology. David Castle guides the reader through various theoretical changes with respect to diversity and stability in community ecology. Kim Sterelny argues that researchers who believe in the agency of ecological ensembles (holism) may struggle in bringing together ecological and evolutionary theories. Finally, Kevin de Laplante questions whether ecosystem management should be understood as a postmodern (or postnormal) science and concludes that one may so understand it without committing "to the global antirealist philosophies" he associates with this line of reasoning (p. 414).

In conclusion, Cuddington and Beisner argue that theoretical developments in ecology are best understood in view of a gradual historical evolution and that Kuhn's concept of a paradigm shift is not reflected either in the essays presented in the anthology or in their own findings. This is an unsurprising and probably correct conclusion, as Kuhn was concerned with the historical structure and revolution of scientific conceptual schemes that cannot be compared in scale with recent theoretical changes in the field of ecology.

PEDER ANKER

Susan Haack. *Defending Science—Within Reason: Between Science and Cynicism*. 411 pp.,