formation from living species to infer the foraging behaviors of extinct species. Janis investigates gross molar wear patterns of three species of *Colobus* and correlates these patterns with differences in diet. She then uses the analysis to predict the diet of three species of Eocene *Pelycodus*, providing probably one of the best examples of such a study. Grine, from a study of microwear of australopithecine molars, concludes that deciduous teeth (as well as adult molars) of robust australopithecines were used more for crushing and grinding activity than were the teeth of *Australopithecus africanus*.

In the third section of the book, there are several scenarios for various aspects of primate evolution. Andrews and Aiello propose a model for the evolution of cercopithecoids in tropical to subtropical savanna. They describe African vegetation types, cladistically develop probable vegetation types for fossil taxa, and suggest that the earliest African monkeys were terrestrial leaf-eaters. Rose, in a very thoughtful paper, discusses the evolution of bipedalism and suggests (*contra* Lovejoy) that it did not take place abruptly; rather, it is seen as a process involving changing positional repertoires, probably associated with changing patterns of food acquisition, and during the transition non-bipedal activities must have formed a part of the positional repertoire, with bipedalism having different purposes at different stages. Rose suggests that the most important changing factor is body size, since increase in body size is generally accompanied by morphological specialization.

A number of papers do not deal directly with diet or feeding. Smith attempts to correlate craniofacial measurements with maximum gape in a large series of primates. Papers by Maier, Janis, and Boyde and Martin deal with dental morphology; papers by Demes *et al.* and Wolff deal with the shape of the mandibular symphysis in hominoids; Demes presents a stress-coat analysis of the human cranial base; and Sakka describes the relation of the temporalis muscle to the sagittal crest in a gorilla.

It is surprising that no one mentions the Rosenberger-Kinzey hypothesis (1976) that critical function, rather than food type most often eaten, selects for dental morphology. This concept was nicely demonstrated, for example, by Terborgh (1983) in his study of five New World primates. Two chapters allude to the possibility, however, in australopithecines. Andrews and Aiello suggest that thick enamel in *Sivapithecus* and *Australopithecus* may relate to foods eaten when fruit (presumably the main food source for these genera) was not available. Grine also suggests that thick enamel, especially in the robust australopithecines, may have been important specifically during the dry season for reducing hard dietary items when most plant foods were comparatively tough. Thus, the premolars and molars of these genera may have evolved in response to this critical function, rather than to food items eaten most frequently throughout the year. This line of inquiry warrants further pursuit.

This is one of several recent books and symposia that have dealt with the diet of primates. Why yet another one? Perhaps it is because we are still groping for a synthesis, for some magic method to predict what a given primate will eat and why. This volume moves a little closer, following a similar volume edited by Rodman and Cant (1984), along an asymptotic approach to that goal. The concluding discussion (chapter 25) attempts to provide a unifying theme relating ecology, diet, foraging, and morphology. In fact, one gains an excellent summary of the book and of the conference that produced it by reading this short final chapter. But, despite the optimism of the participants, full understanding of these relationships is still far in the future.

WARREN G. KINZEY
Department of Anthropology,
City College of New York,
New York 10031

Elsie Clews Parsons

A Woman's Quest for Science. Portrait of Anthropologist Elsie Clews Parsons. PETER H. HARE. Prometheus, Buffalo, N.Y., 1985. 192 pp., illus. $22.95.

Peter Hare has a wonderful subject and excellent sources. The subject is Elsie Clews Parsons, and *A Woman's Quest for Science* is a particular kind of portrait. "What I have attempted is a straightforward presentation of Elsie as a personality. Such a presentation requires extensive use of quotations from her correspondence and other writings so that she can speak for herself" (p. 8). Hare's sources were a family legacy, a "treasure trove of personal papers" (*ibid.*) his great aunt Elsie had not deposited with the American Philosophical Society.

The book is a mixed success. Elsie Clews Parsons is fascinating, speaking for herself. As biographer, Hare primarily maintains chronology, with a minimum of interpretation. He does isolate themes—anti-conventionalism, feminism, pacifism, romanticism—but he does not develop the relationship of these to Parsons's anthropology.

Born in 1874 into a wealthy New York banking family, Elsie Clews fought to go to college and went uptown to Barnard. In 1900 (sociology Ph.D. in hand) she married Herbert Parsons, a lawyer and U.S. congressman. She raised four children, while publishing at an incredible rate (p. 139). She died in 1941.

Elsie Clews Parsons is best known for her voluminous compendia of southwestern ethnography and Negro folklore. A series of intellectual convictions shaped these contributions: an anti-conventionalism that became a critical sociology; a qualified feminism and an ironic pacifism; a romantic absorption in "primitive" societies. Throughout, Hare notes, she was a "quiet iconoclast" (p. 20). She couched her attacks on American society in descriptions of "exotic" cultures—"propaganda by the ethnographic method," she said (p. 135)—and published her controversial sociology under a pseudonym. Quotations from letters show she also disguised her personal feelings.

Travel led Parsons into fieldwork. On trips with Herbert Parsons or (before and after Parsons's death in 1925) with other male companions, she collected stories, artifacts, and informants. Hare downplays the significance of her encounter with Franz Boas, father of American anthropology, partly to prove her independence in anthropology and partly to stress other collegial relationships (for example with Pliny Goddard, Alfred L. Kroeber, and Robert Lowie).

On her most significant anthropological contribution, the southwestern fieldwork, Hare lets Parsons "speak for herself." Neither quoted passages nor Hare's commentary, however, reveal the impact the difficulties of working in Pueblo cultures had on Parsons's ethnography. The reader does not learn whether qualms about probing into "secretive" cultures determined her dry, descriptive style. Nor does the reader learn the extent to which Parsons's approach to Pueblo cultures changed over time.

Hare's portrayal of the woman's personality provides a tool for assessing her anthropology. He himself suggests that "personal values" guided her research (p. 141), but the reader must relate the themes raised in earlier chapters to the terms of her ethnographic approach. A

search for alternative ways of accommodating self-expression to social convention attracted Parsons to the orderly Pueblo cultures. Believing that individuals and societies should stand up for themselves, Parsons did her job of gathering, reporting, and publishing material and expected her informants to do their job of protecting secrets and, if necessary, arguing against her interpretation (p. 147). Eventually, obeying the canons of contemporary anthropology, Parsons relinquished generalization in favor of "fact" (p. 135). The result was a crude positivism that relegated her writings to the status of source material. Yet she did not give up her "romanticism" about "primitive" societies, a tension left unsettled.

Elsie Parsons did not seek positions in anthropology (she did accept the presidency of the American Anthropological Association in 1941), but she contributed to the "professionalization" of anthropology through support of students and colleagues. In the end, anthropology for Parsons was less a career than a basis for "propaganda by the ethnographic method."

The weaknesses of *A Woman's Quest for Science* result from the biographer's reluctance to stray into unfamiliar domains. The strengths lie in the absorbing narrative he has created through an interweaving of quotations, paraphrases, and biographical commentary. *A Woman's Quest for Science* should reawaken interest in Elsie Clews Parsons through its portrayal of the interaction between a determined personality and the amorphous beginnings of American anthropology.

JUDITH MODELL
Department of Social Sciences, Carnegie-Mellon University, Pittsburgh, Pennsylvania 15213

Elsie Clews Parsons around 1913. [From *A Woman's Quest for Science*; American Philosophical Society]

Mathematical Physics

Renormalization. An Introduction to Renormalization, the Renormalization Group, and the Operator-Product Expansion. JOHN C. COLLINS. Cambridge University Press, New York, 1984. x, 380 pp., illus. $49.50. Cambridge Monographs on Mathematical Physics.

Quantum field theory, which describes the local interactions of fields in accordance with the basic principles of quantum mechanics and relativity, is the conceptual context within which today's physicists are trying to understand the fundamental constituents of matter and their interactions. The electromagnetic, weak, and strong forces have all been formulated in the language of quantum field theory, in the so-called "standard model," and many physicists are confident that quantum field theoretic models will continue to provide an accurate description of the subatomic realm for all length scales larger than about 10^{-33} centimeter, where it is generally acknowledged that the quantum manifestations of gravity will probably require a drastic revision of the general theory.

If the frontiers of quantum field theory are indeed going to be pushed 16 orders of magnitude beyond the reach of the present generation of high-energy experiments, then undoubtedly a key role will be played by the mathematical machinery of renormalization, which governs the scaling properties of interaction strengths as one probes successively more minute distances. Often complicated and full of traps for the unwary, renormalization theory remains a particularly difficult discipline for the uninitiated to master. Even after a course in introductory quantum field theory, students are typically quite hesitant to enter the forest of mathematical subtleties encountered in most of the published literature on renormalization. For such students, and for a great many more experienced theorists as well, *Renormalization* provides a particularly useful and concise introduction to the subject.

To limit his treatment to a manageable length without sacrificing pedagogical clarity, Collins has made a careful selection of topics. Avoiding complicated phenomenology, he concentrates on some of the central themes of the standard model, such as gauge theory, the renormalization group, and deep inelastic scattering. Wisely, he has not tried to present a compendium of numerous equivalent renormalization schemes but has relied mainly on one method, minimally subtracted dimensional renormalization, which is most efficient for his purposes.

A particularly satisfying aspect of the book is the way in which Collins deals with some of the more difficult and subtle issues of renormalization theory. A good example is his discussion in chapter 13 of chiral symmetry, axial anomalies, and the Adler-Bardeen theorem. Rather than papering over the difficulties, Collins presents a thorough yet uncluttered analysis that leaves one with a firm grasp of the important points. In so doing, he transmits to the reader an important message. Renormalization theory indeed requires clear thinking and mathematically precise language if it is to succeed. Nevertheless, it need not be so abstruse that it is accessible only to a handful of experts. Rather it can, and should, be an essential part of the education of every serious particle physicist.

J. H. LOWENSTEIN
Department of Physics, New York University, New York 10003

Coral Reefs

Perspectives on Coral Reefs. D. J. BARNES, Ed. Published for the Australian Institute of Marine Science by Clouston, Manuka, Australia, 1983. x, 277 pp., illus. A$19.95.

In 1979 a workshop on coral reefs was held at the Australian Institute of Marine Science in Townsville. "By the conclusion of the workshop," writes the editor of this book, "there was a general feeling that a combined meeting of (mainly) geologists and biologists had provided each with fresh views. . . . It was proposed that a series of fairly basic reviews would provide a straightforward means by which a specialist in one field could discover what was going on in other fields. Following from this, a number of workshop participants agreed to provide reviews. . . . This volume is the collection of those reviews."

The goal of summarizing the state of geologic and biologic knowledge of coral