structure-solving by direct methods at atomic resolution. Yet it is not irrelevant to observe that most of what we know about the feasible regular conformations of polypeptide chains derives from the long-continuing studies on fibrous proteins and their simpler analogs, the synthetic polypeptides. It is also likely that the important next phase of elucidating the effect of environmental parameters (temperature, *p*H, ionic strength, and so on) on secondary structure will progress more readily through the study of such fibrous systems than through the study of globular proteins. It is therefore important and timely that we assess critically our knowledge of fibrous protein structure. The authors of the present volume have undertaken to do this, and have in large measure succeeded.

Since x-ray diffraction methods are still the most powerful tools for defining molecular structure, the authors have (properly) concentrated on this approach. The first chapter of the first section of the book, devoted to Methods of Determining Conformation, summarizes the x-ray approach nicely. Diffraction by helical structures is dealt with carefully, and the effects of disorder receive an emphasis appropriate to the imperfect nature of fibrous diffractors. Of the remaining seven chapters in this section, only two—on infrared spectrophotometry and the analysis and prediction of conformation—match the first in utility. The remainder cover a potpourri of techniques superficially, and will mainly serve as a repository of references for the uninitiated.

The second section of the book reviews the work on Synthetic Polypeptides as Models of Fibrous Proteins. Separate chapters deal with the alpha helix, the beta conformation, and the polyglycine II type of conformation. These chapters provide useful summaries of our knowledge of these structures. They are marred mainly by discrepant discussions of some of the infrared work: the amide I modes of the alpha helix are treated with a confidence that hardly accords with the skepticism expressed in an earlier chapter concerning the detailed predictions of the perturbation theory; and the published spectroscopic arguments for possible C–H . . . O bonds in polyglycine II are garbled effectively enough that the authors' conclusion that such bonding is "not proven" follows convincingly from their discussion.

The final section of the book, Conformation in Fibrous Proteins, contains major chapters on silks, collagens, myofibrillar proteins, and keratins (the latter being a subject on which the authors have contributed significantly). These constitute almost half of the descriptive material in the book, are relatively detailed, and probably will be the most useful to the reader. They reveal effectively the richness of structural information that can be obtained from systems of intermediate order by the combined use of several physical methods of structure determination.

S. KRIMM

Department of Physics,
University of Michigan,
Ann Arbor

Sensory Psychology

Surface Color Perception. JACOB BECK. Cornell University Press, Ithaca, N.Y., 1972. xvi, 206 pp., illus. $11.50.

The questions with which Jacob Beck is concerned in this monograph are the fundamental ones about how we achieve an internal representation of "the world out there" through the mediation of our senses. To what extent is the representation determined by the stimulus array impinging on our receptor systems, by the characteristic organization and response properties of a particular sensory system, by prior experience, memory, judgment, interpretation, expectancy, and so on? Beck explores these questions with reference to the visual perception of surface color, placing them in the context of such historically important issues in psychology as nativism versus empiricism, structuralism versus Gestalt. He reviews an extensive body of experiments concerned with various aspects of surface color perception: modes of appearance, constancy, contrast, adaptation, and so on. Particular emphasis is given to experiments designed to measure the influence of different variables (such as background, depth cues, shape) on the extent to which we perceive as constant surfaces whose reflectance characteristics do not change but whose light images on the retina vary widely accordingly to the level, spectral quality, and uniformity of the illumination on the object.

Assessment of the results of experiments of this sort places a special burden on an author whose hope is, as Beck states in his preface, that there will emerge from his review "an understanding of the essential processes that underlie the perception of a surface color." It hardly needs saying that what we see under normal circumstances is sometimes, at least, subject to alternative, and possibly contradictory, interpretations. Who, for example, has never mistaken a shadow for a spot, or vice versa? It is unfortunately true that many of the findings of perceptual experiments are subject to even greater uncertainty of interpretation than are the percepts whose essential determinants the experiments are intended to discover or establish. It is thus almost inevitable that the informed reader will disagree with some of Beck's assessments in particular instances, and this reviewer wishes that he had included explicit notice of the difficulty of interpretation in other instances.

In an era of overspecialization and proliferation of research reports, Beck has rendered a real service by reviewing together a variety of different experimental approaches that are congenial to the readership of one specialized journal or another (12 different journals are cited in the first two pages of the bibliography) but that are all relevant to some aspect of the ever-intriguing problem of surface color perception.

DOROTHEA JAMESON

Department of Psychology,
University of Pennsylvania,
Philadelphia

Books Received

Advances in Aerosol Physics. No. 7. V. A. Fedoseev, Ed. Translated from the Russian edition (Kiev, 1972). Halsted (Wiley), New York, and Israel Program for Scientific Translations, Jerusalem, 1974. viii, 168 pp., illus. $17.50.

Advances in Chemical Engineering. Vol. 9. Thomas B. Drew, Giles R. Cokelet, John W. Hoopes, Jr., and Theodore Vermeulen, Eds. Academic Press, New York, 1974. xiv, 312 pp., illus. $29.50.

Advances in Heterocyclic Chemistry. Vol. 16. A. R. Katritzky and A. J. Boulton, Eds. Academic Press, New York, 1974. x, 350 pp., illus. $35.

Agricultural Geography. John R. Tarrant. Halsted (Wiley), New York, 1974. 280 pp., illus. $12.50. Problems in Modern Geography.

The Amateur Navigator's Handbook. Sallie Townsend and Virginia Ericson. Crowell, New York, 1974. xiv, 226 pp., illus. $7.95.

Anger. Leo Madow. Scribner, New York, 1974. x, 132 pp. Paper, $2.45. Reprint of the 1972 edition.

Annual Review of Fluid Mechanics. Vol. 6. Milton Van Dyke, Walter G. Vincenti, and J. V. Wehausen, Eds. Annual