authors' expectation of producing a "synthetic, personal evaluation of the state of our knowledge."

There is little to temper enthusiasm for the sheer competence that has gone into the preparation of this work. Of course there are a few places where one could wish for a bit more information or explanation. In some respects it is not an "easy reading" book. Sometimes a sentence requires repeated reading before its meaning is clear—for example (from the summary, p. 1434), "The brain is large, but the optic lobes together and sometimes each one of them are even larger; species differences have been correlated with habit of life." Occasionally subordinate clauses get in the way of understanding as in the following example (p. 338), "Mutual exclusion is, of course, a necessary facet of behavior which includes push-button responses, like giant fiber startle reflexes—a necessary facet, that is, if frequent jams and stalls from coincidence of stimuli are to be avoided." But these examples are trivia, and on the whole the quality of writing is high.

The contributions of the publisher should not go unnoted, for no work of this comprehensive nature could be produced without a remarkable degree of understanding between author and publisher. The Freeman Company must share credit for a job well done. To the contributing authors, Howard A. Bern and Irvine A. Hagadorn for their fine treatment of neurosecretion and J. E. Smith for his handling of the Echinodermata, commendation is also due. Their chapters fit nicely into the spirit and philosophy of the entire work, with no jarring divergence in style or approach.

Bullock and Horridge are research scientists of great competence. That they should take time from their own interests and particular areas of investigation to produce these volumes is a special kind of service to science. The cost must have been high. So too, the purchase price may seem extravagant. But no student of nervous systems could, by the expenditure of many times $75, duplicate what is here presented in coherent fashion. For as long as men investigate nervous systems and try to understand their perplexing ways, so long will Bullock and Horridge be remembered with gratitude.

DIXY LEE RAY

Department of Zoology, University of Washington and Pacific Science Center, Seattle

International Series of Monographs on Analytical Chemistry

Nuclear Techniques in Analytical Chemistry. Alfred J. Moses. Pergamon, New York, 1965. viii + 142 pp. Illus. $6.50.

This book will give the analytical chemist a bird's-eye view of the applications of radiochemical methods to a wide variety of problems. It is not really a book that stresses techniques. For detailed discussions of such classical topics as self-absorption, Feather analysis, absolute beta counting, and back-scattered radiation, the reader is referred to other sources. There is no discussion of the chemical niceties of exchange reactions, and the statistical problems encountered as the counting rate approaches background are deemed outside the scope of this monograph. There is, however, an adequate introduction to such topics as instrumentation, the measurement of natural radioactivity, activation analysis by neutrons, positive ions and gamma rays, the application of radiochemistry or tracer methods to the study of surface-exchange reactions, gas adsorption, geo- and cosmochronology, and the detection of tracer impurities in semiconductors.

A section devoted to the analysis of biological materials presents detailed procedures for the determination of phosphorus, cobalt, molybdenum, gold, arsenic, and manganese in beetle wings, tissue, plant material, biological materials, and marine organisms. No consideration is given to the problems that would arise if the chemist were faced with other combinations of these elements and sources. It is this recipe-like quality, admittedly unavoidable in a book this size, that will strike the discerning chemist as a limitation to the book's usefulness.

In the appendix, the General Electric KAPL Chart of the Nuclides is reproduced at less than half the original size, thereby rendering it essentially illegible. Except for this defect, the typography and composition of the book are excellent. I noted only a few trivial errors, and the bibliographies at the end of each chapter provide ample sources to help the reader to extend his knowledge. I feel that perusal of the book by the uninitiated will provoke as many questions as it will answer. But that is all that a bird's-eye view should be asked to do.

ROBERT P. EPPLE

Division of Research, U.S. Atomic Energy Commission

"Loadstones, Onyons and Garlick," and Magnetic Theory

The Theory of Magnetism. An introduction to the study of cooperative phenomena. Daniel C. Mattis. Harper and Row, New York, 1965. xvi + 302 pp. Illus. $11.50.

This thoroughly delightful book is a highly personalized essay, neither pretending completeness nor claiming representation of any but its author's unique and individual interest. Mattis is concerned strictly with fundamental issues, and in discussing the central core of magnetic theory his insight is incisive and his style is lively and lucid.

The first chapter of the book is a charming account of the history of magnetism, written jointly by the author and his wife. This history ranges from Pliny's account of the discovery of the magnet stone by the shepherd Magnes, "the nails of whose shoes and the tip of whose staff stuck fast in the magnetick field while he pastured his flock," through the 16th century account by Porta of his disproof of the popular superstition that "if a loadstone be annointed with garlic, it does not attract iron. . . . but when I tried all these things, I found them to be false: for . . . breathing and belching upon the Loadstone after eating of Garlick, did not stop its virtues. . . . And again, When I enquired of the Mariners, Whether it was so they were forbid to eat onyons and Garlick for that reason; they said, They were old Wives fables and seemed ridiculous; and that Seamen would sooner lose their lives, than abstain from Onyons and Garlick." No professor who teaches a course in magnetism should henceforth venture into class unarmed with this ready supply of anecdotes and vignettes.

The author's choice of topics through the remainder of the book is dictated by his formal leanings. Given a physical problem, and a qualitative physical explanation, Mattis much prefers a rigorous solution of a clean model (even though it may be only vaguely related to the physical system) to an