the book is something of a disappointment. Too frequently only an approximate result is given, even when an exact result is known, and sometimes the approximate nature of the result is not even noted. For example, the discussions of the static response functions and collective mode frequencies in the B-phase are all flawed in this way. I also have the sense that the authors occasionally have sacrificed both excitement and clarity in the interest of diplomacy. In particular, the hydrodynamics of ^{3}He-A has generated heated controversy and, eventually, important and elegant new insights. While Vollhardt and Wölfle note that the topic has been controversial and give many references, they do not tell us what the controversies were about or which of the references finally got things right, in their opinion. This is a shame, for it drains the subject of much of its motivation and vigor. In summary, this is a valuable book but not as lively or definitive a book as its subject deserves.

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Squid as Experimental Animals. DANIEL L. GILBERT, WILLIAM J. ADELMAN, JR., and JOHN M. ARNOLD, Eds. Plenum, New York, 1990. xxxii, 516 pp., illus. $75.

Many readers will be aware that research on the squid giant axon provided the foundation for our current understanding of many roles played by ion channels in regulating activities of living cells. Few life scientists, including squid specialists, however, are likely to appreciate the range and number of basic discoveries that also have stemmed from research on squid and its cephalopod cousins, the octopus and the cuttlefish. Much of this work has utilized the giant axon system to provide insights into active transport of ions and metabolites across cell membranes, microtubule-based organelle transport, and synaptic transmission, but there have been numerous contributions in other areas as well, such as hemocyanin-based oxygen transport.

This broad body of work is emphasized in a unique way in the 22 papers that constitute *Squid as Experimental Animals*, the long-overdue follow-up to *Guide to Laboratory Use of the Squid* published in 1974 by the Marine Biological Laboratory at Woods Hole. Each chapter is written with two goals: to review the scientific results in a particular area of research and to provide a concise, practical summary of the relevant experimental techniques. Thus, this book is intended to serve both as an up-to-date information source about cephalopod biology and as a sophisticated laboratory guide. In both of these capacities, *Squid* is a success.

Divided into six major sections, the new book covers a broad spectrum of squid biology, with major emphasis on neuro- and cell-biological aspects of the giant axon and sensory systems. Most of the chapters hit the intended mark and are well written, comprehensive, and richly documented with references. As in any collection there are, of course, both highlights and disappointments.

In Evolution, History and Maintenance (part 1; four chapters), a fine chapter on maintenance, rearing, and culture discusses important problems involved in ensuring a supply of healthy animals and the advantages of alternative cephalopod species for particular research needs. The two chapters that make up Mating Behavior and Embryology (part 2) add little information beyond that appearing in the 1974 guide. Neural Membranes (part 3; five chapters) includes a wealth of detailed technical information for those interested in pursuing classical approaches (internal perfusion/dialysis and voltage clamp) to giant axon and synapse physiology. One chapter introduces the "cut-open axon" to modern patch clamp techniques in an elegant way. Cell Biology (part 4; five chapters) features some solid chapters devoted to the cytoskeleton and axoplasmic transport, lipid metabolism in the nervous system, and isolation of synaptosomes from the brain. Sensory Systems (part 5; three chapters) provides a nicely balanced treatment of structural, functional, and developmental aspects of the visual and statocyst systems. Finally, Integrated Systems (part 6; three chapters) sports the chapter "Squid as elite athletes: locomotory, respiratory, and circulatory integration," an intriguing account of the squid's high-speed, jet-propelled life style and the challenges it imposes.

The only real problem with *Squid* is the seemingly arbitrary choice of topics. Obviously, all areas of squid experimental biology could not be covered, and the editors excuse the omissions with "lack of space." Judicious editing could have generated a good bit of space, however. For example, some experimental methods are described in unnecessary detail and some appear redundantly—there are no fewer than four treatments (15 pages total) of how to remove the giant axon from *Loligo pealei*. More significantly, several chapters do not seem appropriate for a work of this sort. While it may be amusing to learn the details involved in the naming of *L. pealei*, this information could have been profitably replaced by material designed to increase the utility of the volume to new students of the squid, such as a good basic description of internal anatomy. One must also question the inclusion of a chapter (on tissue culture) based entirely on unpublished work when rich areas like learning in cephalopods are excluded.

Despite its shortcomings, this book is an important contribution. These chapters go a long way toward putting what we know about squid and their use as experimental animals into one accessible volume for the researcher or advanced student. This is a valuable accomplishment, not only because it will stimulate new work on many aspects of squid biology, which is of intrinsic importance, but also because it will point the way to additional possibilities of using these animals as model systems for problems in vertebrate physiology. In today's biomedical research world, where studies on mammalian systems are predominant, it is important to remember what squid, and other invertebrates, have taught us and to retain vision enough to sense what secrets they still hide.

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Books Received

Acute Myelogenous Leukemia. Progress and Controversies. Robert Peter Gale, Ed. Wiley-Liss, New York, 1990. xxvi, 500 pp., illus. $85. UCLA Symposia on Molecular and Cellular Biology, new series, vol. 134. From a workshop, Lake Lanier, GA, Nov. 1989.

Advances in Neural Regeneration Research. Fredrick J. Seil, Ed. Wiley-Liss, New York, 1990. xviii, 422 pp., illus. $85. Neurology and Neurobiology, 60. From a symposium, Pacific Grove, CA, Dec. 1989.

African Nemesis. War and Revolution in Southern Africa (1945–2010). Paul L. Moorcraft. Brassey's (Pergamon), Riverside, NJ, 1990. xxx, 519 pp., illus. $58.

Ahead of His Time. Wilhelm Pfeffer. Early Advances in Plant Biology. Erwin Bünning. Carleton University Press, Ottawa, Canada, 1989. xii, 199 pp., illus. $26.95; paper, $16.95. Carleton Science Series. Translated from the German edition (Stuggart, 1975) by Helmut William Pfeffer.

The Biology of Large African Mammals in Their Environment. P. A. Jewell and G. M. O. Maloiy, Eds. Published for the Zoological Society of London by Clarendon (Oxford University Press), New York, 1989. xxviii, 304 pp., illus. $87. Symposia of the Zoological Society of London, vol. 61. From a symposium, London, U.K., May 1988.

C*-Algebras and Operator Theory. Gerard J. Murphy. Academic Press, San Diego, CA, 1990. x, 286 pp. $44.50.

Drug Discovery. A Casebook and Analysis. Robert A. Maxwell and Shohreh B. Eckhardt. Humana, Clifton, NJ, 1990. xxvi, 438 pp., illus. $79.50.

Écologie Opérationelle Assistée par Ordinateur. Marcel Bouché. Masson, Paris, 1990. vi, 572 pp., illus. 530F.

Forms of Explanation. Rethinking the Questions in Social Theory. Alan Garfinkel. Yale University Press, New Haven, CT, 1990. xii, 186 pp. $30; paper, $10.95. Reprint, 1981 ed.

Living Arctic. Hunters of the Canadian North. Hugh Brody. Douglas and McIntyre, Vancouver, Canada, and University of Washington Press, Seattle, WA 1990. xviii, 254 pp., illus. Paper, $14.95. Reprint, 1987 ed.

Polarimetric Remote Sensing. Jin Au Kong, Ed. Elsevier, New York, 1990. xiv, 520 pp., illus., + plates. $78. Progress in Electromagnetics Research, 3.