triumphs of neurophysiology since Sherrington and instead will leave it to the interested reader to explore them from this biography.

What makes genius will continue to haunt us. Sherrington's accomplishments were evident early in life and were sustained throughout decades of scientific achievement. Philosophical and historical writings occupied much of his later—but not declining—years in matters of mind. Granit's warm and sensitive biography of a great scientist and great man should prove rewarding to anyone fascinated by the history and progress of neurophysiology.

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Hydrozoans

The Cell Biology of Hydra. THOMAS L. LENTZ. North-Holland, Amsterdam; Interscience (Wiley), New York, 1967. 211 pp., illus. $12.95.

This book will be welcomed by readers looking for a thoughtful and stimulating discussion of hydra. There is sufficient coverage of the general biology of hydra (including notes on its discovery and subsequent cultivation) to ease even the nonspecialist into the quite detailed presentation. About half the book deals with the structure, ultrastructure, and histochemical composition of hydra. This anatomical picture is then correlated with their physiology and development, particularly as related to cell permeability, the control of nematocyst discharge, and the influence of the nervous system on regeneration. Lentz's theme is that we must narrow the gap between form and function at the cellular and subcellular level.

Hydra specialists will be most grateful for the chapters on the nervous system, which provide the most comprehensive available discussion of this lively subject. Three types of nerve cells (ganglion, sensory, and neurosecretory) are catalogued, although there is an unfortunate lack of light-microscopic characterization. Also discussed are many biochemical and physiological characteristics attributed to the nervous system.

The Cell Biology of Hydra is not a critical review of any general or particular aspect of hydra, and it goes well beyond the cell in scope. As a review it is rather saltatory in treatment and has undue emphasis on Lentz's own work (although good literature references are included at the beginning of each chapter). As a research monograph (as the author terms it) it lacks precision in statement, especially in the presentation of experimental data (one is not even told with which species [pl.?] the book deals, and many statements are not applicable to all hydras). Also, observations are treated in a very speculative fashion. This volume might be best described as a record of Lentz's experiments with, observations on, and thoughts about hydra. As such it imparts a sense of direction and excitement to current research on hydra and covers in depth a wide spectrum of topics.

This book is generally attractive, although I did find the abundant illustrations to be disappointingly poor and errors in the text annoying. Nevertheless, many diverse types of readers will find this a modern and informing discussion.

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Magnetic Processes

Hyperfine Interactions. ARTHUR J. FREEMAN and RICHARD R. FRANKEL, Eds. Academic Press, New York, 1967. 774 pp., illus. $16.

The hyperfine interaction, or magnetic interaction of the electrons in ions, atoms, and molecules with the magnetism of the internal or neighboring nuclei, is weak and plays no significant role in basic structural perturbation compared with the more important spin-orbit or exchange interactions. Nevertheless, and perhaps even because of this, the hyperfine interaction is an important indirect tool for the determination of structure and in influencing magnetic processes. It is probably only a slight exaggeration to say that there are more physicists and physical chemists whose research interests have some important specialized contact with the hyperfine interaction than with any other single interaction per se. Nuclear physicists and others concerned with nuclear magnetism, and most optical and radio-frequency spectroscopists, find many effects and complications arising from this interaction. Whether it is more effective to deal with the subject inclusively, as is done in this book, or to introduce it in review books devoted to particular fields of research in which it plays a role depends on the sophistication of the reader.

Starting with a general introduction, by B. Bleaney, to the hyperfine interaction and its role in paramagnetic resonance, this collection of papers continues with a discussion of the Hartree-Fock determination of electron density at the nucleus, methods of calculating the interaction, and general articles on the most important methods of studying the interaction—namely, atomic-beam resonance, high-resolution optical spectroscopy, and paramagnetic-resonance techniques. The remainder of the articles are rather unique discussions of special topics in which the hyperfine interaction plays a role. There are papers on nuclear and paramagnetic resonance in metals and magnetic solids, nuclear relaxation and polarization phenomenon, effects involving the conduction electrons in metals, nuclear specific heats, Mössbauer absorption, angular-correlation experiments, low-temperature orientation, rotational cooling, and additional topics in nuclear resonance. Of these special articles, several on perturbed angular correlation and Coulomb-excited Mössbauer effects seemed to this reviewer to be unique and difficult otherwise to find in the review literature.

With an often uneasy blend of textbook style and concise, review-article style, this is clearly a reference book for specialists and research students. It is probable that the most interested readers will appreciate the book for individual contributions, and in this respect the editors are to be thanked for selecting predominantly young and currently active contributors. If an attempt to find weak points were really to be called for, it could include the comments that some of the subjects have been more completely, informatively, and naturally covered in well-known textbooks concerned with atomic and molecular beams, nuclear magnetism, or paramagnetic-resonance spectroscopy, and that the bibliography in many articles is rather restricted. A collection with this title might well have included a discussion of the role the hyperfine interaction plays in experiments for the precision determination of physical constants such as the g factor of the electron, the Lambe shift, and the fine-structure constant, or the