

catalyst. The last chapter (and the longest) is devoted to the diverse applications of organic titanium compounds, and includes 219 references.

The most attractive feature of this book is its comprehensive treatment of the subject. It does not disappoint the reader by omitting what he is after. In order to make things still easier for the reader, the authors have included an unusually complete index and nearly a thousand references. They have done an exceptionally good job, and their book can be recommended to all those who have to do with inorganic chemistry or polymers or addition compounds or organic chemistry—in short, to nearly everyone who has to do with chemistry.

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## Zoological Society Symposium

The results of the important symposium on the Cnidaria and their evolution, held by the Zoological Society of London and organized by W. J. Rees of the British Museum (Natural History), have now been made available in book form. The world's foremost experts on the systematics and biology of the cnidarians were among the 32 zoologists who presented and discussed the 18 papers published in **The Cnidaria and Their Evolution** (W. J. Rees, Ed. Academic Press, New York, 1966. 467 pp., illus. \$17.50). These contributions deal with many aspects of the "coelenterate" animals. Some of them are addressed directly to the question of evolution, whereas others expand upon more remote topics such as physiology, symbiosis, behavior, pharmacology, and morphology. Consequently, the volume contains material of interest to every zoologist working with the cnidarians, whether or not from the evolutionary viewpoint, and its general implications are so broad that it concerns all zoologists.

It is beyond the scope of this review to criticize the results and viewpoints presented in *The Cnidaria and Their Evolution*. Certainly there are views that will not be accepted universally, and there are points about which argument is inevitable. It is always a good thing to have these matters brought into focus. At this juncture, I merely wish to call the atten-

tion of all zoologists to the volume, and for this purpose a brief review of its contents will suffice.

The volume opens with an essay on homology, analogy, and chemical identity in the Cnidaria, by C. F. A. Pantin, which brings out the evolutionary significance of the "archetype" in relation to homology and analogy. This is followed by a timely review of research on nematocysts, by L. E. R. Picken and R. J. Skaer, which contains a brief summary of the significance of these structures in classification and phylogeny. Chapters dealing directly with problems of evolution in the Cnidaria are those by D. M. Chapman on the scyphistoma of the Scyphozoa; H. J. Thiel on the Scyphozoa in general; Swedmark and Teissier on the remarkable hydroids of the order Actinulida, which are a component of the marine interstitial fauna; C. Hand on the Actiniaria; W. J. Rees on the Hydrozoa; and J. W. Wells on the coral family Fungiidae. W. Vervoort discusses the taxonomic position of the peculiar hydroid family Solanderiidae, and the value of nematocysts in evolutionary and taxonomic studies in general. G. Chapman describes the structure and function of the mesoglea; Braverman and Schrandt attempt to simulate the development of a hydroid colony as a mathematical model, using an electronic computer; G. O. Mackie presents new findings on the growth of *Tubularia* in culture; G. A. Horridge discusses coordination in Ctenophora; and D. M. Ross reviews some aspects of sensory functions in sessile cnidarians. Yves Bouligand summarizes recent work on the Lamippidae, copepods widely associated with coelenterates, and D. Davenport emphasizes the desirability of the wider use of symbiotic relationships to investigate basic physiological and behavioral problems in the coelenterates. Elaine Robson describes the behavior of certain actinians that are capable of swimming and sheds some light on the origin of this behavior. Finally, J. H. Barnes reviews the important and practical subject of the highly toxic—even fatally so—Cubomedusae of Australian waters.

W. J. Rees merits the highest commendation for his skillful organization of the symposium and for the attractive and valuable book that has resulted from his editorship.

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## Reactor Physics

M. M. R. Williams came to the United States, saw at first hand the technical work in his field, and, as his book clearly shows, was conquered. Although he did not contribute to the "brain drain" but rather returned to England after only one year, his book nevertheless strongly reflects his contact with the active group of reactor physicists at the Brookhaven National Laboratory.

The material covered by **The Slowing Down and Thermalization of Neutrons** [North-Holland, Amsterdam; Interscience (Wiley), New York, 1966. 598 pp., illus. \$19.50] is narrower in scope than the title implies. The effects of chemical and crystal binding on thermal neutron interactions and the resonance escape problem at slightly higher energies receive most attention.

The obvious motivation is supplied by thermal neutron reactor technology, but the book emphasizes the underlying physics rather than the practical consequences of the physical phenomena and their numerical calculation. Beyond this chosen emphasis there appears a lack of confrontation of theory with experiment and a lack of dealing with realistic cases. The result of these lacks is that the book emphasizes the formalism and does not yield a quantitative feeling for most of the physical phenomena involved.

The usefulness of the bibliographical work is impaired by frequent informal references such as simply "Corngold's work" (the leader of the Brookhaven reactor physics group) and by such omissions as the lack of a proper reference to the work of Purohit (another member of the Brookhaven group) on the moments of the crystal kernel. Williams has produced nearly 600 pages covering diverse areas in a coherent fashion. For the reader with a mastery of classical mathematical analysis the book should read very easily; for a reader with less than this mastery the book should still be readable but will be tough going in places.

The book can be recommended to those wanting to have in one place much of the physics and formalism of neutron thermalization as the subject stood in 1964.

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