vations, Concepts. Pp. xii+664. £15.50. (Wiley-Interscience: New York and London, June 1971.)

THE third volume of *The Sea*, edited by Maurice Hill, was published in 1963 and dealt with the Earth beneath the sea. It provided, and still provides, an excellent introduction to the techniques, theory and fundamental results of marine geology and geophysics. However, within a few years of its publication the whole conception of the origin of the deep-sea floor had undergone a complete revolution, and those parts of the third volume that dealt with ocean crust structure and evolution began to look in need of refurbishing. Now we have the fourth volume, dedicated to the memory of Maurice Hill, and entitled *New Concepts of Sea Floor Evolution*, which takes the appropriate parts of the previous volume, and revises and expands them in the light of the new plate tectonics. The expansion is considerable. What was about 500 pages now occupies 1,455, split into three parts and bound as two books. The first book contains part I, "General Observations", which is essentially a revised and expanded version of the material in the third volume, introducing some new topics, such as petrology and seismology, and concentrating on techniques and global summaries of results. The second book is new material. Part II, "Regional Observations", consists of a number of regional syntheses covering different parts, but not all, of the deep ocean floor and continental margins. The articles generally combine results from several geological and geophysical techniques to arrive at statements about the structure and origin of the areas under discussion. Part III, "Concepts", contains two articles, by Vine and Hess, and by J. T. Wilson, which set the general and regional observations into the global framework of plate tectonics.

A volume like this must have two distinct aims, to interest active scientists with new syntheses and ideas, and to build up a fundamental framework, to act as an archival source for the future. The first aim is not well met here, chiefly because of publication delays. Each article is dated, and dates range from April 1968 to July 1969, with most in the range July 1968 to February 1969. Things have moved a bit since then, in particular with the arrival of results from the JOIDES drilling programme in the deep oceans, and with the realization of the importance of triple junction evolution in the geological history of plate margins. Thus only a few of the articles make an impact as original and new, though in this class must come the thoughtful article on the structure of the Pacific basin by Shor, Menard and Raitt (book 2), and that on the benthic boundary layer by Wimbush and Munk (book 1).

The second aim, though of less immediate interest, is particularly important in determining the life of a book, and this aim is much better satisfied. Many of the authors have taken a great deal of trouble in assembling references, in giving accounts of results published in widely scattered papers, and in drawing the results together to make a solid framework. This is particularly successful in the section on regional observations, where such papers as that on the Mediterranean by Ryan, Stanley, Hersey, Fahlquist and Allan, and that on Pacific boundary structure by Hayes and Ewing will be invaluable as sources of assembled basic information. The price of the two books, £30.75, will be a considerable deterrent to the private purchaser. My own advice would be to make sure that your library gets both books, while if you feel that you can afford only one, buy the second book, with parts II and III, rather than the first. On the other hand, if you get a chance to review a copy, do not hesitate, it is certainly time well spent.

J. R. CANN

Cambrian Collection

Cambrian of the New World. Edited by C. H. Holland. Pp. 456. (Wiley-Interscience: London and New York, April 1971.) £10.50.

THIS is the first volume of a series designed to describe the Lower Palaeozoic rocks of the world. As Professor Charles Holland puts it, the intention is to provide an up to date, yet reasonably circumscribed survey illuminated by the authors' own views but retaining some measure of common organization. If the series can maintain the standard of the first volume this aim should be achieved with success.

The book contains six contributions: an account of the Cambrian of the stable interior of the United States by Christina Lochman-Balk; descriptions of the Cambrian of the Great Basin to the west and of the Cambrian of the Appalachians and New England to the east by A. R. Palmer, together with three chapters which summarize the Cambrian of Canada and Alaska, by F. K. North, of the North American Arctic, by J. W. Cowie and of South America, by A. V. Borrello. They are all clearly presented accounts, written by authors of considerable experience. Judging from the bibliography the text seems to have been completed about two years ago, but there is much new and previously undocumented material, particularly on the Cambrian of the west of North America.

An attractive feature is the manner in which the authors hand on unpublished material to their successors and go out of their way to point out the possibilities for future work which might lead to definitive syntheses. It is to be hoped that this approach attracts stratigraphical palaeontologists to the rich fields awaiting them. As Palmer remarks, as many as seven different biostratigraphical entities can be recognized in the Early Cambrian sequences of the Great Basin.

It goes without saying that a central theme in this book is the record of transgressions and regressions of the Cambrian seas over the Americas. At some time or another in the Cambrian, a part of every state in the Union was covered by a marine incursion. There are admirable syntheses of the different assemblages of rock which resulted and discussions of such topics as the possible influence of the underlying geological structures on the extent of these seas and repeated references to the interplay of biological activity and the kind of rock that resulted. Such discussions bring out the necessity to disentangle contemporary faunas which differ because they inhabited different environments from groups of animals which evolved through the passage of time and which might be used to define subdivisions of the Cambrian.

The reader is left with a clear picture of Cambrian events as revealed by present knowledge and with a sense of where progress is being made in current research and what the future might hold in store as investigations continue. Professor Holland and his colleagues can be congratulated on a fascinating book which I can recommend to any geologist interested in the Lower Palaeozoic history of our planet.

J. SUTTON

Physics and God

Proceedings of the International Conference on Thermodynamics held in Cardiff, UK, April 1–4, 1970. Edited by Peter T. Landsberg. (International Union of Pure and Applied Chemistry, in conjunction with the International Union of Pure and Applied Physics, and the Institute of Physics and the Physical Society. *Pure and Applied Chemistry*, Vol. 22, Nos. 3–4, 1970.) Pp. ix+215–555. (Butterworth: London, December 1970.) £9.

LET me say at the outset that I do not think that, purely academically, I am properly qualified to evaluate this book. I propose to review it, all the same, for the sake of interest and amusement: because it seems to me, as a modest but persistent user of commonplace thermodynamic methods in experimental physics, that this conference, which I did not attend, must certainly have been those things—and more. It illustrates the power of a simple macroscopic principle such as thermodynamics to