

REVIEW

The Pre-Cambrian and Lower Palaeozoic rocks of Wales; edited by ALAN WOOD. P. X, 462, 110 figs. Cardiff, 1969 (Univ. of Wales Press, 5 gns.).—To a British geologist Wales is essentially Lower Palaeozoic terrain, despite the extensive Upper Palaeozoic deposits in both north and south. The Principality has been classic geological ground since the days of Sedgwick and Murchison's bitter controversy last century, and although small geographically nevertheless it is there one finds the type areas of the Cambrian, Ordovician, and Silurian systems, while a number of inconspicuous and sometimes unpronounceable places are perpetuated in the names of most of the standard "Series" constituting the Ordovician and Silurian. One hastens to add that even after a century of research the precise interpretation of such "Series" is still marked by disagreement between specialists.

In the present context "Wales" is employed in a broad sense to include certain border areas which, although geographically part of England, belong geologically to the Welsh region. Of the great number of British geologists who have worked there, none has made greater contributions than two Welshmen (the late) Professor O. T. Jones and Sir William Pugh, and this volume is virtually a Festschrift in their honor. O. T. Jones, in particular, made unique contributions to Welsh geology by the breadth of his interests, and his publications cover such diverse topics as regional structures, stratigraphy, Ordovician and Silurian brachiopods, graptolites, sedimentation, and lead-zinc ores. The present volume is in many respects a reflection of this diversity, comprising as it does 20 papers that cover numerous aspects of Welsh Lower Palaeozoic geology. Some of the contents are new, others have appeared, in their essentials, in other journals; nevertheless, it is useful to have them all within one volume.

The longest contribution, by D. A. Bassett, although ostensibly an account of regional structures in Wales, provides an excellent general introduction by virtue of its historical approach. Bassett shows also the proportion of the country that has been covered by both published works and unpublished Ph.D. theses, an aspect of particular interest to North American geologists when they consider that in almost all cases the field-mapping has been carried out at a scale of 6 inches to the mile. In spite of this impressive density of researches and geologists, the difficulties of unravelling such a complex region are underlined by Bassett's assertion that three recent, differing interpretations of the structure of Snowdonia are based on the same sets of published data.

Pre-Cambrian and Cambrian rocks receive relatively small-scale treatment, which presumably indicates a certain lack of interest at the present time. The Ordovician rocks fare rather better, and Alwyn Williams's contribution makes particularly interesting reading. The Scots-Irish affinities of the Appalachian shelly faunas and the Anglo-Welsh affinities of those in eastern Newfoundland and parts of the eastern seaboard have long been known, and Williams's work is an ingenious, though possibly

oversimplified, attempt to relate these facts to a pattern of ocean currents. Silurian rocks are well catered for, and in all the papers the treatment is sedimentological, reflecting the interest taken by British geologists in this aspect of Welsh geology. Several papers are devoted to igneous rocks, of which Wales possesses a great number and variety. N. Rast gives a useful general account of Ordovician volcanicity in relation to structure, while other papers cover plutonic rocks and ignimbrites, the latter a phenomenon recognized in North Wales only during recent years.

The discussions that followed the reading of the papers are printed in full; of varied length, some are not only informative but serve also to emphasize the lack of agreement among kindred research workers. This is particularly true of the paper on isotopic dating which contains many interesting and useful data, although some apparent discrepancies worried certain members of the audience. The volume is well produced at a reasonable price and should have a wide appeal to geologists far beyond the confines of Wales.

W. T. DEAN