

the whole the book is well produced, although one unfortunate slip (on p. 4) places the East Indies as part of the great "... archipelagos of the Middle East." There is a slight tendency to stress work associated with the American Museum of Natural History, as though that institution was the primary source of our present knowledge, but this is perhaps understandable since the book is published for the American Museum. Amadon's little volume should serve a real purpose, for it gives a reliable and balanced description of its subject.

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Inorganic Chemistry

When the original edition of Robert Sosman's *The Properties of Silica* was published (1927), the substance silica, SiO_2 , was considered to have seven phases. Since that time methods of attaining and measuring high pressures and temperatures have been greatly improved and methods of determining structures have become precise so that silica is now found in at least 22 phases. The number of phases is so great and their interrelationships so intricate that silica is probably the most complex of the inorganic binary compounds. The present book, Sosman's *The Phases of Silica* (Rutgers University Press, New Brunswick, N.J., ed. 2, 1965. 398 pp., \$10), is a completely revised form of those chapters in the original edition (chapters 1 to 14) which dealt with the phases of silica and their interrelations. Chapters 15 to 17 considered hypotheses of structure because, at that time, little was known of the actual structures of any of the phases except low quartz. These chapters are replaced by chapters 12 to 14 of the present volume, which give the results of structure analyses of the phases by modern methods. Other chapters deal with the composition and leptonic (electronic) constitution of silica, the transitions among the phases, the effects of twinning and of defects, and the amorphous forms and the microforms. Because the presence of water affects so profoundly the phase relations of silica, a short chapter on the system $\text{SiO}_2\text{-H}_2\text{O}$ has been added at the end of the volume.

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Orton Jr. Ceramic Foundation enabled Sosman to devote space to brief discussions of thermodynamic theory and methods of structure determination and graphic portrayal so that the intelligent nonspecialist can understand phase relations and structural descriptions without difficulty.

The book is comprehensive, detailed, and precise. At the same time it is written in such a relaxed and easy style that it is a pleasure to read as well as being highly informative. The binding is good, the paper is of high quality, the print is very easy to read, the illustrations are well reproduced, and the price, relative to that of most modern scientific books, is moderate. Everyone interested in silica will be grateful for this important book and will await impatiently the promised appearance of the second part dealing with the interrelations of the properties of silica.

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Archeology and Prehistory

Prehistoric and Early Wales (Humanities Press, New York; Routledge and Kegan Paul, London, 1965. 256 pp., \$10), edited by I. Ll. Foster and Glyn Daniel, consists of eight chapters based on as many lectures given by leading specialists at the British Summer School of Archaeology in 1959. The introduction, by Glyn Daniel, is a history of antiquarian thought and subsequent archeological research in Wales. It makes humbling reading. The antiquaries of old relied on two basic sources of information, the Bible and the classics. Nowadays we smile at their conclusions. Modern archeologists are daily acquiring more scientific gadgets. But, a couple of centuries hence, will not students of the past smile at our conclusions?

The second chapter deals with Wales in the Pleistocene at a time when Britain was a peninsula of Europe. Although the material left behind by the tiny population of hunter-gatherers is not large, much is done to relate it to the rest of Britain and the Continent. All may not agree with this interpretation, but the views expressed are stimulating, though unhappily without references or bibliography such as accompany the other chapters.

The first farmers appeared in about

the third millennium B.C., but their knowledge of agriculture like their date is inferred from the rest of Britain rather than confirmed by Welsh evidence. The shoreline of their time fluctuated, and was sometimes more than 20 feet below today's shoreline. Hence many of their settlements may have been lost, especially since much of the surviving material is from the best lands along the present coast. But these folk began clearing the Atlantic-sub-Boreal forests in the valleys, and their axes made of igneous rock were widely traded in Britain. Their monumental tombs also attest their connection by sea with the continental shores.

By the beginning of the Bronze Age, about 1800 B.C., the warmer and drier sub-Boreal climate had improved the upland pastures and encouraged the use of higher ground for pastoralism. The maritime routes to the Continent became less important, and Wales became a frontier zone between the diverse cultures of England and Ireland. With the Late Bronze Age, from about 1000 B.C., the usefulness of the uplands was again reduced by the colder and wetter sub-Atlantic climate which encouraged settlement on lower ground, and this situation continued in the Iron Age. By the time of the final stage of the Late Bronze Age, the archeological material falls into four groups that largely correspond to the four tribal areas of the Iron Age, observed by the Romans in the early centuries A.D.

As for the Iron Age itself, the scene is now dominated by quite new fortified towns and "castles," a sharp contrast to the Late Bronze Age denoted by graves and bronze implements. No author commits himself about when the first Celtic settlement took place, although one of them ventures to say, but without further comment, that the Celts came largely by sea. But the builders of the Iron Age fortifications were surely Celts, and the great find of Iron Age treasure evidently sacrificed in a sacred lake in Anglesey suggests a connection with the Druids' sanctuary there, which was destroyed by the Romans.

The final chapters deal with the Roman military occupation, the Celtic co-existence with it, and the Celtic resurgence after its withdrawal.

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