

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (M.M. Woolfson, Physics Department, University of York, Heslington, York YO1 5DD, England). As far as practicable books will be reviewed in a country different from that of publication.

Liquid crystals. Proceedings of the International Conference on Liquid Crystals held at Kent State University, August 16–20, 1965. Coordinated by GLENN H. BROWN, G. J. DIENES and M. M. LABES. Pp. viii + 486. New York: Gordon & Breach, 1967. Price £15.5s.

In the years following the publication of *Molecular Structure and the Properties of Liquid Crystals* (G. W. Gray, 1962, Academic Press), much important work has been done in this field. There has been a need for an up-to-date, coherent presentation of the properties of liquid crystals, and it was to be hoped that the book under review would do something to meet this need. Although this book does indeed give a wealth of information, it does not give the coherent and evaluative presentation that is required. The book is a collection of 30 papers presented at a conference on liquid crystals in 1965, which were subsequently published as articles in the journal *Molecular Crystals*, mainly reporting on original research. Any individual or library subscribing to this journal would therefore have virtually the entire contents of this book already available. There is a lot of good material scattered throughout this book, but it is difficult to extract, as the articles vary considerably in level of detail, and often employ different terminologies. The arrangement of articles is apparently random, with no evident grouping according to topic, technique or viewpoint. Most of the articles are highly specialized and unrelated to the other articles. It is all the more necessary, therefore, to have a reliable index but there is, unfortunately, no index whatever. And since there is no editorial guidance either, it is difficult to understand why it was thought valuable to publish these articles in book form for, in their present form, they clearly remain more suitable as journal articles than as chapters in a book. Furthermore, editorial attention to some articles would have been welcome.

The articles report the following types of investigation into the properties of certain liquid crystal systems: optical analysis of texture, colour, polarization, dichroism, and of the effects of varying electric fields; nuclear magnetic resonance; dielectric relaxation; infrared spectroscopy; heat capacity and enthalpy; surface tension; ultrasonic absorption and dispersion; X-ray diffraction; effects of chemical variation on phase diagrams.

This is no book for the novice wanting to find out what liquid crystals and their general properties are. It is also unsuitable for use in finding out about the structures of liquid crystals in general. Though structure underlies all of the properties investigated, the basic problem of how the long-range order can co-exist with the short-range disorder is not tackled. The field of the structure of liquid crystals is still in its infancy, in what Rutherford may have called the 'stamp collecting' phase. In the four years since the conference in 1965 much research on liquid crystals has been done, but there has been no fundamental advance in the understanding of their structures. Thus, from the point of view of structure, this book suffers little from age. The clues to structure are liberally spread throughout the book, but

the general reader without previous reading in the field would have considerable difficulty in interpreting them. The novice can learn more readily from Gray's book (see above). For the structures of lipid liquid crystals, where much recent activity has taken place, Luzzati's review (Chapter 3 in *Biological Membranes*, edited by D. Chapman, 1968, Academic Press) is to be preferred.

In conclusion, it may be said that this book can be recommended only to those who are already well-read in the field and conversant with the varying terminologies. For those to whom the journal *Molecular Crystals* is readily available, this book will be a luxury for browsing convenience only, and a considerable luxury at £15.5s.

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The monthly American journal of geology and natural science. Conducted by G. W. FEATHERSTONHAUGH. Vol. I (Facsimile of the 1831-1832 edition). New York, London: Hafner Publishing Co., 1969. Price \$ 25.00.

An increasing world interest in the history of geology has been marked in recent years by the decision taken at the 22nd Session of the International Geological Congress, held at Delhi in 1964, to form an International Committee on the History of Geological Sciences. This Committee met in 1967 at Erevan, Armenia, USSR and was attended by about 150 geologists from 15 countries. Arrangements were then made to hold a session at the 23rd Congress at Prague in 1968, a session which was not held owing to the premature closure of the Congress.

The recent publication of a number of reprints or translations of early geological works also reflects this interest by geologists and historians in the history of the earth sciences. Among the reprints is the series *Contributions to the History of Geology* edited by Professor George White of Illinois and published by the Hafner Publishing Company of New York, of which the volume now reviewed is No. 3.

The *Monthly American Journal of Geology and Natural Science*, edited by G.W Featherstonhaugh, was a short lived publication which lasted only twelve months. The first number appeared in July 1831 and the last in June 1832. In that brief period the editor succeeded in including a large amount of interesting material. Featherstonhaugh, born in London in 1780, had travelled in Europe before settling in the United States in 1807. In 1827 he returned to England for a business visit, and on December 7 was elected a Fellow of the Geological Society. From 1827 onwards he corresponded regularly with such leading geologists as Buckland, Murchison