

Liquid and solid helium

The Physics of Liquid and Solid Helium. Part 1. (Interscience Monographs and Texts in Physics and Astronomy, Vol. 29.) by K. H. Bennemann and J. B. Ketterson, Pp. 589. (Wiley-Interscience: New York and London, June 1976.) \$35.35; £21.

SOME books are to be read as a whole; others may to greater advantage be dipped into with discretion. This book, consisting of six chapters each of which amounts to a relatively self-contained review article on a specialised topic, clearly belongs to the latter class.

The first chapter, by Khalatnikov on the phenomenological theory of superfluid ^4He has much in common with his frequently cited monograph *An Introduction to the Theory of Superfluidity* (Benjamin, New York, 1965). There follow five detailed and carefully constructed reviews: by Ahlers on experiments near the superfluid transition; by Fetter on ions and vortices; by Stephen on light scattering; by Woo on microscopic calculations; and by Varma and Werthamer on solid helium. Each of these chapters has its own bibliography which, in most cases, is extensive enough to be really useful to anybody working in or wishing to enter the field in question. Fetter, for example, includes more than 500 separate citations.

It is not a book for beginners. Khalatnikov's chapter, although admirable in itself, is too succinct, and too limited in scope, to constitute an adequate introduction to the material which follows. Graduate students will therefore be well advised to read an introductory text, such as the excellent little book by Tilley and Tilley (*Superfluidity and Superconductivity*, van Nostrand Reinhold, London, 1974), before embarking on the sections of the present volume relevant to their research.

Apart from the first, all the topics covered are ones in which there has been considerable progress in recent years. These substantial review articles will thus be of value to research workers in assessing the current position and deciding where further investigations are still required. The absence of a chapter dealing with the rapidly developing field of superfluid ^3He is naturally disappointing, but a certain loss of topicality and impact was inevitable in view of the four years' delay between completion of writing and publication. In most cases the authors have done what they can at the proof stage, through incorporation of

addenda and additional references, to update their original material to 1974 or so. Although the book is clearly a must for libraries, the extent of individual sales is likely, on account of the price, to be somewhat limited. This is rather a pity, because there will undoubtedly be many who would appreciate personal copies of particular chapters, but who will be disinclined, or unable, to pay for all the others which may be of less interest to them.

Part II which, it is promised, will include a couple of chapters on superfluid ^3He will be awaited with eager anticipation. **P. V. E. McClintock**

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Flavour of gene expression

Control of Gene Expression. By Norman Maclean. Pp. xi+348. (Academic: London and New York, May 1976.) £7.80; \$19.75.

POSSIBLY because this book arrived on my desk around holiday time I viewed it as a sort of tourist menu attempting to offer a wide array of characteristic foods as an introduction to the culinary arts of a new country. The broad title is perhaps a little misleading for the bulk of the book presents a series of concise introductions to the numerous and diverse systems which have been used to study particular aspects of gene expression in eukaryotes. These systems are catalogued under three headings: systems involving control of a single type of protein; systems described as being of limited complexity; and systems classified as "not well understood in molecular terms". These three chapters constitute the meat of the book, the merits of which must rest on the strength of these three chapters.

In describing the systems involving one type of protein the author has clearly set himself a difficult task. The result is an acceptable précis, brief enough to be read by the enthusiastic undergraduate; barely detailed enough for that undergraduate's teacher, but dotted with key references for further reading. Moreover the author has commented in each case on some of the uses to which each system has been, or might be, put.

There is obviously a continuum between systems of limited complexity and systems described as "not well understood in molecular terms". The point at which the author draws the line between these two categories must be arbitrary. It is in these two chapters

that I think the book will come into its own as an introductory text for biochemistry and molecular biology undergraduates. The wide range of fascinating systems are dealt with briefly but interestingly. If any of these accounts serves to lead students trained in the molecular sciences into the study of one of these fascinating systems then the author will be able to congratulate himself.

The book leads off with a chapter on control of gene expression and its level of action, followed by a brief account of gene expression in prokaryotes. At the end there are chapters on RNA involvement in gene expression and general concepts of gene regulation. Each of these chapters is well laid out and might be taken as a separate reading, although read together some parts are a little repetitious.

As a tourist menu of the area of gene expression in eukaryotes the book succeeds in giving a taste of many systems, some fashionable and some less so, and in a number of instances it manages to convey authentic flavour.

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