cous effects, and dimensional analysis, plus selected readings from the remaining five chapters would constitute a heavy one-semester course which would meet the needs of almost all engineering curricula, both as a terminal course and as a basis for further course work.

Perhaps the most distinguishing feature of this text is the profusion of generally excellent example problems, which are more or less uniformly distributed through the material, plus the large number of well formulated homework problems for each chapter.

Selected Lectures in Modern Physics for School Science Teachers. H. Messel, ed. 328 pp. (MacMillan & Co., London) St Martin's Press, New York, 1960. $5.25. *Reviewed by Norman Feather, University of Edinburgh.*

IN Australia, as elsewhere, the shortage of scientists and technologists has for many years been a matter of growing concern. The lectures reprinted in this book were given at a Summer School held in the University of Sydney in January 1958. Those attending them constituted some ten percent of the school science teachers of the state of New South Wales. The lecturers were drawn more widely than the audience: they came from the Australian universities generally. When, after more than two years, the lectures were published (having been printed in the UK), a free copy of the book was sent to every science teacher in the state. We have here, then, an initial salvo—a heavy broadside—opening the battle for more and better science teaching in the schools of New South Wales, and more physicists for Professor Messel's department in the University of Sydney. To that extent the book is a document of history, though it is not in that aspect that we are concerned with it. It would be interesting to know what positive effects resulted from its distribution, but we are denied that knowledge. We can judge it only as another semi-popular account of the growing points of physics as they stood some four years ago.

There are twenty-three chapters contributed by eighteen lecturers. Broadly classified, there are nine lectures on nuclear physics and five on astrophysics and space travel; the other nine are less homogeneous in subject. Professor Messel writes in the preface, "It is hoped that the provision of a first-class course will not only help to bring the Science Teacher up-to-date, but will also inspire him—and it is hoped he will in turn inspire his students." It is certain that the general effect of the lectures must have been to exhibit the vastness of the subject, and some inspiration is inevitable when that is done, but surely the editor presumes when he implies that the course was "first-class." To this reviewer it appears of rather mixed quality. Some lectures are unexceptionable, but others, regarded as models of pedagogy for pedagogues, are less satisfactory. Logic and precision are sacrificed too often. Two statements concerning binding energy illustrate this point—and many other examples of a

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similar nature might be chosen: "In order to hold a complex of neutrons and protons together to form a tightly packed nucleus there must exist strong attractive forces between the particles. Hence, a nucleus contains a large quantity of potential energy of binding . . ." (p. 28); "Now a neutron or proton in a nucleus has a binding energy of about 8 Mev and it will therefore have a kinetic energy of about this magnitude" (p. 31). The attentive American reader will not be insensitive to such blemishes, but he will still be interested to evaluate this collection of lectures in relation to scope and intention, for the problem of "refresher courses" for school science teachers is his problem equally as it was, and is, the problem of Professor Messel and his colleagues in Sydney.

Low Temperature Physics. Conf. Proc. (U. of Toronto, Aug.–Sept. 1960). G. M. Graham and A. C. Hollis Hallett, eds. 725 pp. U. of Toronto Press, Toronto, 1961, $15. *Reviewed by Eugene Guth, Oak Ridge National Laboratory.*

THIS was one of those periodic, large international conferences where the proceedings get successively more voluminous. It consisted of about twenty invited papers whose authors acted as rapporteurs of a number of selected contributed papers. In the book these invited papers each open a chapter devoted to the field concerned. They are followed by the selected contributed papers in the order in which they were discussed by the reviewer. The non-reviewed contributed papers are grouped into other chapters. Such a procedure has been followed recently in many of the large conferences. They differ in that the published proceedings sometimes contain only the selected contributed papers and abstracts of the other unreviewed contributions; sometimes (as in the present case) they contain all contributions and some discussion to boot.

In general, no striking progress has been reported in the two main fields of low-temperature physics—viz., liquid helium and superconductivity. However, a lot of interesting detailed progress has been discussed. Perhaps an enumeration of the (abbreviated) titles of the invited papers will help to show the scope of the conference: Mössbauer effect, magnetic relaxation, liquid and gaseous hydrogen, magnetism below 1°K, nuclear orientation, Fermi surface, ultrasonic attenuation, resistance minima, superconductivity, specific heat of alloys, liquid and solid He^3 and He^4, thermodynamic properties of solids.

It seems to this reviewer that twenty invited papers are perhaps too many. At the last Union of German Physical Societies (UGP) reported in *Physics Today*, January 1962, p. 98, by Wigner there were only about ten invited review papers for the whole field of physics. The reviews at UGP are usually published separately in a slender volume, while the contributed papers are probably published in more or less specialized national or international journals. Such a procedure seems preferable to the one adopted in this confer-