School Mathematics Project, Book 1 (Cambridge University Press, 1965), 281 pp., 18s. 6d.

This is the first of four books which together will make a complete S.M.P. course leading to the Elementary Mathematics Examination at " O " level. The book is intended for pupils at the start of their secondary school career.

*Books T and T*4 (1964), 296 pp., 17s. 6d.; and (1965), 330 pp., 21s.

The purpose of Book T is to break into the complete 5-year " O " level course (S.M.P.) at about the third year stage (at the age of 13); and Book T4 follows Book T to complete the S.M.P. " O " level course.

All three books provide much stimulating reading for both teachers and pupils. Great care has been taken to present the ideas new to school work in simple language and in a way which gives the pupils plenty of opportunity to discover relationships for themselves.

Teacher's Guides to Book 1 *and Book T*4 (1965), 204 pp., 21s.; and 208 pp., 21s.

As well as giving good introductions for the teacher to the topics which are new to the school work, these books also provide helpful comments on the teaching of the material contained in the corresponding pupils' books. W. T. BLACKBURN

HUSAIN, TAQDIR, *The Open Mapping and Closed Graph Theorems in Topological Vector Spaces* (Oxford Mathematical Monographs, Clarendon Press: Oxford University Press, 1965), x+108 pp., 30s.

The author's purpose in this monograph is to collect and present some of the work done in recent years on the general theory of the open mapping and closed graph theorems and various related ideas in the theory of topological vector spaces. It is therefore of a highly specialist nature.

In the first two chapters, a brief account is given of the topology and vector space theory required, with references to proofs, and then of the basic theory of topological vector spaces, where the proofs follow those in the treatise of Bourbaki. Chapter 3 contains Banach's classical open mapping and closed graph theorems, and derived results, proved for *F*-spaces and Baire spaces; these are followed by their extensions to inductive limits of locally convex spaces of these types. Chapters 4 and 5 consist of the contents of papers published by various writers between 1953 and 1958. In these papers *B*-complete (fully complete) spaces were introduced and their connection with the open mapping and closed graph theorems established; also ultrabarrelled spaces, the ew^* topology (the finest coinciding with the weak topology on equicontinuous sets) and hypercomplete spaces were defined and studied. The advantage to the reader in using the book rather than the original papers is one of uniformity o style and notation. In Chapters 6 and 7 the author gives the material in some of his own papers of the past few years. One of these is concerned with a class of spaces, called *S*-spaces by the author, which under certain conditions are *B*-complete, so that a generalisation of the Krein-Smulian theorem holds. He also studies rather general classes of spaces between which the closed graph theorem holds. The monograph concludes with some notes and a bibliography. WENDY ROBERTSON

MORSE, ANTHONY P., *A Theory of Sets* (Academic Press Inc., New York, 1965), xxxi+130 pp., $7.95.

This book gives a sophisticated and highly formal presentation of the author's unified treatment of logic and set theory, and contains many original ideas. Once the author's formalism has been introduced it is used almost exclusively in the main text, with a minimum of background comment in ordinary English. To assist the un-

sophisticated or inexperienced reader, a commentary by Trevor J. McMinn is provided in the Foreword, together with a comparison of the Morse system with other well-known systems of axiomatic set theory. In fact the system is closest to one given by J. L. Kelly in the appendix to his book *General Topology*.

The book is intended for graduate students and professional mathematicians. Because of its formal and unfamiliar approach it is likely to be more successful as a textbook for a formal post-graduate course in set theory than as a book for the general mathematical reader. A. A. TREHERNE

BERBERIAN, STERLING K., *Notes on Spectral Theory* (D. van Nostrand Co. Ltd., 1966), 118 pp., 20s.

This book contains a presentation of spectral theory in which the spectral theorem for normal operators is not significantly more difficult than for the Hermitian case. However the disparity is made up, to some extent, by making the Hermitian case harder. In this approach, once the machinery of positive operator valued measures is set up, the normal case is deduced from the Hermitian case using only elementary manipulation of measures. Some of the basic techniques are developed in settings more general than are needed for the spectral theorem and conditions are imposed only when required. This may worry some readers approaching spectral theory for the first time. Also, although the deeper results of integration theory are not used, the reader needs to have a thorough familiarity with basic measure theory.

The author writes in an entertaining informal style and achieves this without glossing over the more tedious points. In fact most of the proofs are given in full detail. The book deserves a place among the better of the many available treatments of spectral theory. J. ERDOS

RINDLER, W., *Special Relativity* (Second Edition) (University Mathematical Texts Series, Oliver & Boyd, 1966), xii+196 pp., 13s. 6d.

This excellent book has been very carefully revised for the second edition, and the emphasis on the fundamental principles, already noted in the first edition (these Proceedings, **12** (1961), 169), further developed. Apart from changes to take account of modern developments (Mössbauer for Ives and Stilwell, slowing of electrostatic dispersion of charged particles in a fast accelerator beam and so forth), the chapter on particle dynamics has been completely rewritten, and concepts from Newtonian dynamics which are not conveniently transferred to the relativistic theory are omitted or played down. For example, the concept of mass as quantity of matter is no longer useful; the definition of force is postponed until after a thorough discussion of the relations between mass, energy and momentum. One could perhaps wish that this discussion had been so phrased that at the end the term " mass " meant " rest mass ", for that is the way the term is used by research physicists today; the quantity energy-divided-by-c^2 differs from energy only in the same way as the electromagnetic and electrostatic units of charge differ.

The very useful examples which are an integral part of the course and really teach the student what the subject is all about have also been extensively revised. If only one had the time to make one's students (and oneself, too) work through them!

D. J. CANDLIN

LYNDON, R. C., *Notes on Logic* (D. van Nostrand, 1966), 20s.

This book consists of a series of short chapters dealing with various aspects of modern mathematical logic. The approach is algebraic and owes much to the work of Tarski. The book is concise and well written. It would form a useful introduction to the subject for third or fourth year undergraduates. M. T. PARTIS