

ally speaking, the universities do not know biology as a subject and maintain a rigid distinction between its several divisions. This has influenced the work of grammar schools and in general has rendered general science courses in schools an unsafe preparation for the university award and entrance examinations.

Prof. Green is an enthusiastic and efficient photographer, and this is reflected in his book. Every useful method of producing visual material, including models and their use in the work of teaching, is dealt with in a thorough and practical manner.

The author has examined the whole field, and while he makes a plea for a wider public attention to the problems of human biology, particularly in relation to population changes and family life, he is prepared to show how the best can be got from the more formal botany and zoology. There are chapters on museums and gardens, agricultural and economic botany, silviculture, ecology, dissection, evolution, physiology and sex education.

The recent British Association report, "Biological Sciences in British Schools", is an important and realistic but rather depressing document. It stresses "the alarming deterioration in Biology teaching in schools". There are difficulties due to large classes, lack of laboratory assistance and teachers inadequate both in numbers and qualifications. There is also the widespread neglect of field-work at all levels in many schools. The teacher must have an interest in, and knowledge of, natural history and an ecological approach to the subject. Good biology teaching and, indeed, good science teaching in all its branches, are more than ever necessary at the present time; and the pressing problems concerning the provision of adequate human and material facilities for this work must be a first priority in national schemes, not only in education but in the field of economics also.

The book is not only a safe guide for the young teacher but will, in addition, stimulate and encourage the practised worker. It is a very valuable contribution to a subject of primary importance.

W. L. SUMNER

## THE GREAT BARRIER REEF

The Romance of the Great Barrier Reef

By Frank Reid. Pp. xiii + 191. (Sydney and London: Angus and Robertson, Ltd., 1954.) 18s.

ANYONE interested in Australia will be glad to have this book, especially if, like the reviewer, he knows the Barrier Reef waters. It is not in any sense a scientific work—and for that reason may be somewhat out of the ordinary run of books noted in *Nature*. It consists of twenty-six chapters of murder, piracy, cannibalism, escapes, 'blackbirding', wrecks, storms, and everything that goes to make the successful adventure book. The difference is that all these incidents are vouched for, and the sum total of frightfulness is far worse than any ordinary tale. It is, indeed, an example of fact being stranger than fiction.

Frank Reid is well known in Australia and he has collected the material in this book very largely from people who took part in the adventures, or were at any rate very closely concerned with them. The earlier events are based on historical records, and A. W. L. Russell, who was for some years honorary secretary of the Queensland Royal Geographical Society, states in his foreword, and the author in his

preface, that all the events related, fantastic though some of them may be, are entirely factual. Many of them relate to the islands in Torres Straits—one of the most dangerous pieces of water in the world. Several others are based on the Palm Islands—now a large native reserve.

Apart from man's brutality, the book does bring out very clearly indeed the dangers of navigation in reef waters. Great care is always necessary, and it is difficult now to appreciate the dangers that Cook and his successors overcame in vessels which were entirely dependent upon wind and current. Anyone who has been to Lizard Island and seen the line of the outer barrier, the passes, the breakers, and the innumerable inner reefs gains a far greater respect for those who sailed the sea before the advent of power than can possibly be obtained from reading, however vivid the accounts may be.

To all who now travel in these waters, and especially to those who visit them in good weather for a holiday, I would recommend this book. Those who sail regularly in these waters, and those who have worked there scientifically and otherwise, will want to read it. I think one or two chapters might be added to a further edition to include the scientific 'romance' of the reefs. While it may be commended to all, I cannot but think its title should have been "The Tragedy of the Great Barrier Reef".

J. A. STEERS

## MECHANICAL PROPERTIES OF METALS

Strength and Resistance of Metals

By Prof. John M. Lessells. Pp. xiv + 450. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1954.) 80s. net.

THIS book, which is primarily directed to engineers, covers that field, within the purlieus of engineering and metallurgy, concerned with the resistance of metals to deformation and fracture. Here, the theory of elasticity, which frequently masquerades under the misnomer 'strength of materials', has a limited application, and considerations of plasticity and fracture are essential for a complete description of the behaviour which is observed in practice. The tenuous understanding of these factors at the turn of the century precipitated an experimental approach in which such properties as hardness and notched-bar value were measured to assess the suitability of a metal for a particular engineering application. In this development little regard was paid to the real meaning of the tests; but the metallurgical engineer to-day feels that information of fundamental significance is implicit in the copious legacy of these mechanical test results which have been handed down to him. This suspicion receives support from recent progress in the understanding of plastic flow and fracture, and the time is now ripe to incorporate some of these ideas in text-books on 'mechanical testing', which too often concern themselves almost exclusively with standardized testing procedure and results. Although the efforts of the author of the book under review are a welcome step in this direction, it must be admitted that he could have availed himself more fully of the opportunity to fill this palpable gap in the literature.