

Guided Missiles in War and Peace

By Nels A. Parson, jun. Pp. xii+161. (Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1956.) 28s. net.

THIS introductory study, by a member of the United States Army Ordnance Corps, attempts to show the impact of guided missiles on military operations and to describe the technical characteristics of the main classes of missile. The subject is treated at a technical level suitable for non-specialists; nevertheless the book gives a useful account of the basic principles of missile propulsion, aerodynamics and guidance, with clear diagrammatic illustrations. There is a strong tendency to advance the guided missile as the solution to almost every military problem of the future, although the need for specially trained man-power to operate and maintain the associated complex equipment is emphasized. Great importance is attached to the use of submarine-launched atomic missiles and to the provision of medium-range ballistic missiles for use by army commanders. Although, at the time the book was written, the speculations it contains on satellites and space travel may have seemed naïve, the last chapter on 'missiles of peace' has a topical ring in the light of recent events.

In general the book is typical of the spate of publications on missiles which have emanated from the United States in the past few years. For the inquiring layman, as for the soldier, sailor or airman, it gives a readable introduction to the subject, with a number of interesting photographs of American missiles and a summary review of the likely tactical and strategic uses of guided missiles.

Non-Stable Stars

Edited by George H. Herbig. (Symposium No. 3 of the International Astronomical Union.) Pp. viii+200. (Cambridge: At the University Press, 1957.) 30s. net.

THIS volume contains the talks given at a symposium of the General Assembly of the International Astronomical Union held in 1955 at Dublin. It is concerned mainly with stars which for one reason or another are thought to be unstable, or near instability, especially T Tauri stars, flare stars, novae, Wolf-Rayet stars, and eclipsing binaries.

Among the more interesting contributions are those on T Tauri stars, peculiar objects to which A. H. Joy first directed attention in 1945. They are dwarf stars, irregularly variable, with late-type spectra but showing emission lines, and associated closely with interstellar matter. At first their peculiarities were attributed solely to collision with gas clouds, but the association between stars and gas is now thought to be more than fortuitous. The general opinion is that these stars are young and, indeed, that we may be witnessing some stage in their formation. Another important paper is that by M. F. Walker, giving evidence for extremely rapid light variations in old novae, especially DQ Her, better known perhaps as Nova Herculis 1934. A. McKellar and R. M. Petrie give some valuable measures of spectrum line changes during ingress and egress in 31 Cyg, where a B5 star is eclipsed by a super-giant K star. The results show irregular structure and movement in the K star's atmosphere, giving us a decidedly more complicated picture than is usually contemplated in theory.

Much attention is given to ejection of matter by one component of an eclipsing binary and interception by the other. The opinion appears to be growing that some such mechanism is often operative, with a significant and possibly rapid effect on the evolution of the component stars. Z. Kopal reports some computations, based on a very simple model, to deduce the actual trajectories for gas particles from one star to the other. One may hope to see more work of this kind.

But valuable and interesting though these and other papers in this book may be, I have been left with a rather depressing suspicion that in this subject we have too many complications and too few significant facts, too much hopeful speculation and perhaps not enough hard thinking. We need new measurement techniques, deliberately designed to answer specific questions, and not merely for the purposeless collection of more data with which to confuse ourselves; and we need fresh theoretical ideas, rigorously worked out. If this symposium stimulates such developments it will have justified itself.

R. O. REDMAN

The Origins of Modern Science, 1300-1800

By Prof. H. Butterfield. New edition, revised and enlarged. Pp. x+242. (London: G. Bell and Sons, Ltd., 1957.) 16s. net.

IN view of its intrinsic value and the many appreciative reviews of the first edition, including that in *Nature* (165, 333; 1950), it is very fitting that "The Origins of Modern Science", published in 1949 and reprinted in 1950 and 1951, should now appear in a revised and enlarged form. Referring to the lectures which he delivered for the History of Science Committee in Cambridge in 1948, Prof. H. Butterfield writes, "In this revised edition they appear now with some of their original errors removed, some judgments altered, and some changes which reflect the advance of knowledge in the intervening years".

Thus, although this book retains its general plan, its value is enhanced by the author's considered judgment, which finds expression in revision and expansion, here and there, of the various chapters. A summary of the importance of the 'theory of impetus'; an appreciation of the contribution to modern science of fifteenth-century art; a discussion of the notion, brought to a climax in the eighteenth century, of 'the Great Chain of Being', are examples. Not least in value are the suggestions for further reading, which have also been brought up to date.

This new edition is specially welcome in a world which is still in need of the historian's as well as the scientist's point of view.

H. D. ANTHONY

Pioneer of Sociology

The Life and Letters of Patrick Geddes. By Philip Mairet. Pp. xx+226. (London: Lund Humphries and Co., Ltd., 1957.) 21s. net.

TO convey a vivid and accurate impression of a personality so dynamic and many-sided as that of Patrick Geddes is no easy task, and though the thirty-odd letters Mr. Mairet allows himself in his two hundred or so pages appear to be well chosen and representative, they are scanty measure for the task. None the less, the book is well balanced and gives a clearer and more continuous picture of Geddes' whole life and work than Mr. Broadman's earlier book. In his final chapter Mr. Mairet attempts a brief but admirable appreciation of the significance of Geddes' work, and it is here in its exposition of the