SYNTHESIS OF APPLIED PALÆONTOLOGY

Paléontologie Stratigraphique

Par Prof. H. Termier et G. Termier. Pp. ix+515. (3,425 figures). (Paris : Masson et Cie., 1960.) 148 N.F.

Atlas de Paléogéographie

Par Prof. Henri Termier et Geneviève Termier. Pp. 100, avec 36 figures en couleurs et 8 figures. (London : Masson et Cie., 1960.) 16 N.F.

THERE is in geology a great need for the publication of comprehensive works which draw together and synthesize the vast quantities of observational detail which have been rapidly accumulating in the past decades all over the world. Similarly there is a need for the critical comparison and co-ordination of the innumerable ideas and speculations that have been published in original papers in a great many different fields. We ought to be truly grateful to those who are prepared to step out of the fray (where glory is won), survey the field and report on the state of the battle. The task they perform is seldom rewarding to themselves, while the works they write involve a great deal of labour. Unfortunately the need for such works and their rarity make us very critical, for so often when they are published we are disappointed to find they are not those for which we were waiting.

Thus we ought to be delighted with these two excellently produced volumes by the indefatigable team of Prof. and Mme. Termier. However, there is no doubt that in spite of the really excellent drawings of the "Paléontologie Stratigraphique" and the equally beautifully executed maps of the "Atlas de Paléogéographie" a feeling of disappointment is not to be avoided.

The "Paléontologie Stratigraphique" is neither palæontology nor stratigraphy. It consists chiefly of a collection of figures of fossils arranged chronologically, and it attempts to survey the whole faunas and floras of each System, the larger Systems being broken down into Lower and Upper, or Lower, Middle and Upper. The matter is to some extent further organized by an introductory article on each System, or division of a System, dealing with the faunas or floras characterizing particular major facies developments. Tables of zones are provided at the end of each section. It is of course not possible to be truly comprehensive even in 515 pages and with 3,425 figures. The choice of genera for treatment is eclectic. Some are important zoologically, others as zone fossils, and many are merely abundant. In consequence neither the evolutional nor the purely stratigraphical account is as complete as it could have been if it alone had been the object of the book. This is in fact a museum in a book, and for the student who has not access to a really good palæontological collection it can be a really valuable reference book (though he will not be able to afford to buy it for himself). For an encyclopædic work of this kind it is exceptionally accurate and up to date. A weakness, however, is the lack of any indication of the magnification of a large number of figures which differ greatly in size from the originals.

The "Atlas de Paléogéographie" consists of 36 maps—each a Mercator projection of the whole world—which originally appeared in the first volume of the authors' "Traité de Géologie". These maps differentiate, at successive stratigraphical horizons, subsiding and non-subsiding seas (in two tones of blue) and show by means of pictographs the distribution of vulcanicity, mountain ranges, coral reefs, forests and other geographical features as well as particular fossils. Arrows show the direction of migration of faunas and floras. Had the maps merely summarized the broad distribution of the regions of thick sedimentary accumulation in the past, and the known distribution at particular times of other sedimentary phenomena and of particularly significant fossils, they might have had some value. But the maps purport to do much more than this ; and to the extent that the reader accepts them as established geographical reconstructions and interpretations of migration routes, so is he misled. Moreover, on account of the small scale of the maps compared with the size of the symbols, together with the fact that the maps do not represent true instants of time, an altogether false impression is presented of the extent of the available data. In the hands of an undergraduate, or of a layman, this can be a dangerous book. The experienced stratigrapher will prefer his own speculations.

S. SIMPSON

METALS IN SURGERY

Metals and Engineering in Bone and Joint Surgery

By Prof. Charles Orville Bechtol, Prof. Albert Barnett Ferguson and Prof. Patrick Gowans Laing. Pp. vii+186. (London : Baillière, Tindall and Cox, Ltd., 1959.) 64*s*.

SINCE the earliest times the surgeon has been in need of some inert material which he can introduce into the body to unite damaged tissues, or to replace structures that are beyond repair. Over the years, however, implantation of a wide variety of metals gave disappointing results, owing either to the mechanical failure of the implant or to its inflammatory effect on the surrounding tissues. Not until shortly before the Second World War was it realized that this lack of success was due to metallic corrosion, and even later before the part played by such factors as fatigue and fretting was really appreciated. It then became apparent that the orthopædic surgeon had to be not only a master of his own art, but also conversant with the crafts of the physical chemist and the engineer.

It is this extra knowledge, in concise and palatable form, that the authors of this book set out to give him. Starting with a brief survey of the historical aspects of the subject, with adequate references, they pass on to consider the theory of metallic corrosion, at first in general terms, and then as applied to the various metals that have found application in surgery, indicating how such corrosion may be exacerbated by the incorrect choice or treatment of the metal to be implanted. Next they consider the structure and mechanical properties of bone, and show that a thorough understanding of such properties is necessary for the correct design and use of metallic implants. Finally, they discuss the healing process as applied to fractures, and describe in detail the various ways in which metals may be used for the internal fixation of broken bones.