

Stratigraphy

The Boreal Lower Cretaceous. Edited by R. Casey and P. F. Rawson. Pp. 448. (Proceedings of a symposium organised by Queen Mary College, London, and the Institute of Geological Sciences, September 1972; *Geological Journal* Special issues no. 5) (Seel House: Liverpool, 1973.) £9.75.

THIS book has been published with the commendable speed and in the attractive form that one has come to expect from the Seel House Press. Owing to its rather specialised nature it will, however, appeal to a more limited audience than the previous geological volumes in this series. The work is basically a well organised and presented compilation of stratigraphic and palaeontological data for a substantial sector of the northern hemisphere by thirty-two authors, mostly English but with a good representation of leading authorities from North America, France, Germany, Denmark, Poland and the Soviet Union. All the articles are in English, with brief summaries in French and German.

It would be both pointless and beyond the scope of a brief review to comment much on individual articles, which range from syntheses of reconnaissance work in large, relatively unexplored territories to reassessments of classic European localities, but I should perhaps single out Casey's substantial contribution on Jurassic-Cretaceous boundary beds in Europe as being especially welcome, because at last he has been persuaded to publish fully, with good illustrations of ammonites, the data on which are based his interesting conclusions on regional correlation. His views on the position of the Jurassic-Cretaceous boundary are well argued, but he has not managed to convince what one might term the Russian school of workers. A consensus on the subject seems as far away as ever. The overall tone of the articles is one of caution and sobriety, so that one greets with raised eyebrows the bold palaeogeographic reconstructions of H. G. Owen, based on the concept of an Earth expanding rapidly at least from the early Mesozoic to the present day. To paraphrase the molecular biologists, he has thereby offended against the 'central dogma' of current earth science, namely plate tectonics. For those with neither the time nor the inclination to plough through the detail, the editors provide a lucid summary of the proceedings in the concluding article.

The outstanding scientific problem concerning the boreal Lower Cretaceous is the cause of the differentiation of the ammonite, belemnite and to a lesser extent other invertebrate faunas from those of the more extensive

Tethyan Realm. It is welcome to have many pertinent distributional data brought together in one volume, but disappointing that very few authors have properly got to grips with the problem. All too many seem content to present conventional stratigraphic descriptions and discuss matters of correlation, all very necessary as a framework for environmental interpretation but decidedly unstimulating. Those who do try to account for faunal provinces have little new to offer. Most favour some sort of temperature control, while varying salinity and palaeogeographic configurations are proposed as subordinate factors. What I missed is an awareness of the great strides recently made in ecological understanding, with the introduction of new concepts such as environmental stability which may be highly relevant to the matter in question. Furthermore, nobody has made much progress in gathering quantitative data for particular fossil groups on density, diversity and distributional changes in relation to sedimentary facies, palaeolatitude and so on to test particular hypotheses. I sensed that many of the workers in the field are quite satisfied if they can describe and correlate their strata more accurately than before, and that they regard penetrating enquiries into cause and meaning as somewhat beyond their scope. Where problems of environmental interpretation are dealt with it is often in a somewhat token manner, as though they were of secondary importance. I hope that they are deterred by modesty rather than complacency or unimaginativeness. Perhaps the term used to describe their discipline is unduly inhibiting. In the wake of the dramatic advances being made in other branches of earth science there could be today rather less stratigraphy and more stratology.

A. HALLAM

Thin layer chromatography

Inorganic Chromatographic Analysis. By Jan Michal. Translation Editor: Julian F. Tyson. Pp. x+217. (Van Nostrand Reinhold Series in Analytical Chemistry.) (Van Nostrand: London and New York, March 1974.) £9.

THE original Czechoslovak edition of this book appeared in 1970 and the present English translation is therefore some four or five years out of date. With the dramatic advances in high performance column chromatography which have occurred since 1969 a book dealing almost exclusively with paper and thin-layer techniques (PC and TLC), and making no mention of high performance liquid chromatography or gas chromatography is now rather dated. This would not necessarily be

too serious if the author had given an authoritative account of the principles and current equipment, and if he had followed this by a critical appraisal of the application of the techniques in inorganic chemistry. But the treatment of principles is far from adequate: the newcomer would gain little or no insight into the key mechanisms of retention and dispersion of spots or bands in chromatography. He would have to look elsewhere to obtain up-to-date information on equipment; and he would have great difficulty in assimilating the mass of analytical information presented uncritically in the form of a long series of recipes for particular separations, and analyses.

This book cannot be recommended with any enthusiasm, but it may prove useful as a starting point for anyone who wishes to review PC and TLC methods before about 1968, say as a preliminary to devising high performance column methods for some specific separation; but even here its value is prejudiced by the poor subject index and the entire absence of an author index.

J. H. KNOX

Latin American physics

Reaction Dynamics. By F. S. Levin and H. Feshbach. Pp. viii+216. (Documents on Modern Physics.) (Gordon and Breach. New York, London and Paris, July 1973.) £6.65 cloth; £3.50 paper.

I WAS rather disappointed on opening this book to find that it was based on notes taken in some of the lectures of the Latin American School of Physics in 1968. Is it really worthwhile publishing a book in a field of research as rapidly changing as nuclear physics some five years after the event? After reading it I am still not completely convinced.

Levin, whose contribution takes up over three quarters of the book, has helped somewhat by giving a list of supplementary references up to 1972. He makes a survey of many of the "recent" developments in direct nuclear reaction theory, mainly in the description of low energy single particle transfer reactions, such as deuteron stripping. It reads rather like a good review article, with its thorough comparison of theoretical predictions with experiment in over a hundred figures. Most of these predictions were obtained using the distorted wave Born approximation (DWBA), which is the standard way of analysing experimental data, and some space is given to a discussion of the reliability of this as a tool for the extraction of spectroscopic factors. There are ample results on polarisation calculations and the extension of the