

thousand species, no selection within reasonable limits can hope to satisfy everybody everywhere. Nevertheless this attractive little book has courageously attempted the task, and the result is both creditable and useful. Within the limits of no more than 124 pages, 364 species are briefly described, and small, simple, clear illustrations of 120 of them are fitted in, four to a page. In addition there are a glossary and an ingenious numerical key, which the user after some practice should find helpful. A word of warning to the user to read *all* the choices in each column on pages 108 and 109, before deciding which one fits his plant best, is, I think, desirable. Hitherto there has been no pocket-book of West African flowers for the beginner. Now, for as little as five shillings, there is, and I hope that this book will start to perform its most valuable function of arousing interest and intelligent observation of what is growing round them among those people previously daunted by the learned and weighty scientific works, from which alone hitherto the name of the commonest West African roadside weed might be laboriously extracted.

J. P. M. BRENNAN

#### Miocene Floras of the Columbia Plateau

Part 1: Composition and Interpretation. By Ralph W. Chaney. Part 2: Systematic Considerations. By Ralph W. Chaney and Daniel I. Axelrod. Pp. viii + 237 + 44 plates. (Publication No. 617.) (Washington, D.C.: Carnegie Institution of Washington, 1959.) 4.25 dollars; Cloth bound 4.75 dollars.

**T**HIS excellent and comprehensive review of the Middle to Late Tertiary floras of the Western United States is for the most part a revision and synthesis of the research work carried out in the University of California by Emeritus Prof. Ralph Chaney and Dr. D. I. Axelrod, who have contributed many papers on this subject covering a period of more than forty years. The results of their research and that of earlier workers on the composition of the floras is brought together and from the result of this synthesis deductions are made as to the ecological and climatic features under which the floras existed. As an example, they find evidence that as a result of the increasing altitude of the Cascade Range during the Pliocene the conditions became drier and hotter and many constituent types of plant disappeared; whereas on the eastern sides of Asia and North America where the climates have remained moister these types still persist as constituents of the floras.

The second part of the review consists of what is in essence a catalogue raisonné of the fossils. These are well illustrated in the plates and there are also photographs of present-day vegetation in the United States for comparison with that of the Tertiary.

J. WALTON

Memoirs of the Geological Survey of Great Britain Palaeontology, Vol. 4, Part 2: Fossil Plants of the Carboniferous Rocks of Great Britain. By Dr. Robert Crookall. Second edition. Pp. iv + 85 + 216 + plates 25-58. (London: H.M. Stationery Office, 1959.) 110s. net.

**T**HE Geological Survey of Great Britain is publishing a complete account of the Coal-measure plants of Great Britain. This work represents the second part of the series on palaeontology of which the first (pages 1-84) appeared in 1955. Like its predecessors it gives references exhaustively;

descriptions are full and amply illustrated by photographs. The photographs indeed repay study with a fairly strong hand lens; structures 0.1 mm. apart can just be resolved. It is very like the memoirs being produced elsewhere on the same subject; as far as I can judge, the work is of equal completeness and quality, though the paper and margins may be less sumptuous. Like them, it seems written mainly for the geologist who has to correlate a rock by means of its fossil plants, and what is more, does it by the well-tried hand-lens methods. In the course of being complete, the present volume mentions microscopic work done by others, but does not add to it. If the botanically minded fossil botanist wants such information, he can determine his plant here, but then do all his own work. The treatment is conservative; the several subgenera used by some are rejected and though new species are made, their numbers are moderate. The only really adverse criticism to be made is at the very slow production. Kidston's Volume 1 of the series is dated 1923-25.

T. M. HARRIS

#### Strahlenbiologie

Grundlagen und Ergebnisse. Von Prof. Dr. Hedi Fritz-Niggli. Pp. xvi + 379. (Stuttgart: Georg Thieme Verlag, 1959.) 65 D.M.

**P**ROF. FRITZ-NIGGLI deserves congratulation for a masterly review, with 28 pages of references, of a subject that is difficult to make into a logically coherent whole. Though the reader is left feeling that the core of the subject, the cause of radiobiological damage, is as mysterious as ever, that is not the fault of the author. A further feeling, surprising and depressing, results from the author's painstaking historical research; this is that many of the facts that became familiar during the post-bomb wave of radiobiological research were just as familiar during the post-X-ray-radium wave at the beginning of the century. Good examples are the effects on blood cells and embryos, which were studied in amazing detail between 1903 and 1908.

A commendable feature of the book is that each branch of the subject is introduced with a short sketch of the basic knowledge needed to follow it; but the reader's education is rather peculiar. He is told that the atoms in a gram of hydrogen if placed end-to-end would stretch 76 times round the Earth's solar orbit, that proteins have large molecular weights and that nucleic acids are biologically important; but it is assumed that he knows how to distinguish a gynogenetic from an androgenetic haploid habrobracon. Fortunately his knowledge of histology is assumed to be imperfect; he is shown normal pictures for comparison with the abnormal. The book is attractively written and printed, with good illustrations and plenty of tables and ingenious but rather brain-twisting diagrams.

#### Die Aktivierte Essigsäure

Das Coenzym A und seine Acylderivate im Stoffwechsel der Zelle. Von Dr. Karl Decker. (Sammlung Chemischer und Chemisch-technischer Beiträge, Neue Folge, Nr. 57.) Pp. viii + 300. (Stuttgart: Ferdinand Enke Verlag, 1959.) Ganzleinen 74.80 D.M.

**T**HE index of this monograph might almost be that of a general text-book of biochemistry; so wide-spread are the functions of coenzyme A. It is difficult to realize that this coenzyme was discovered