original conspectus of the major phytochoria of the world's floras, while R. Pichi-Sermolli's survey of the work on the pteridophyta is almost a source-book in itself.

It is noticeable that the lack of a long retrospective vista gives a sharpness and verve to the articles dealing largely with modern work: K. A. Bissett (bacteria), E. C. Bate-Smith (biochemistry), D. G. Catcheside (cytology) and F. C. Bawden (viruses). Any of these may well win adherents among student readers. Yet it is not wholly the historical element that has made the long vista unattractive: it is that the authors have seen in the future little but the projection of the same vista. C. R. Metcalfe (A Vista in Plant Anatomy) has made a frank and brave attempt to disperse the museum atmosphere in which his subject has become enshrouded and shows that there is, behind his massive contributions to systematic anatomy, a lively mind aware of the more stimulating future ahead. G. L. Stebbins's essay (Genes, Chromosomes and Evolution) provides a more exciting prospect for taxonomy than does Lam's, though Stebbins deals with only one aspect of necessary taxonomic advance. Two or three authors maintain, or imply, the central authority of the taxonomic position, but it is doubtful if this can be upheld in serious argument. Taxonomists can and must use data from other fields, and any botanist who wholly disregards taxonomy imperils his own work ; but taxonomy is only one avenue by which the study of plant life can be approached.

Articles on bryophyta (P. W. Richards), gymnosperms (W. B. Turrill) and Algae (W. R. Taylor) not only give excellent summaries of recent work in these groups, but emphasise (as does C. T. Ingold's article on Fungi already mentioned) the very great contributions to general botanical thought which their students are making. J. W. Walton gives a brief survey in the rather restricted field of Palaeobotany in Great Britain, illuminating as he does so the personalities of the workers.

J. Braun-Blanquet's contribution, Grundfragen und Aufgaben der Pflanzensoziologie (the only article not in English) reminds one of the gulf between the British and Continental schools of plant ecology; British references are as scarce in his bibliography as are continental ones in Sir Edward Salisbury's essay on Causal Plant Ecology. Much of the emphasis here is thrown not merely on the physico-chemical nature of the soil, but on the soil as the environment in which much of the competition, whose study is the essence of plant ecology, takes place.

B. L. BURTT.

A New Edition of Hutchinson's 'Families' (review)—It is the taxonomist's privilege to handle a great variety of plants: it is Dr. Hutchinson's achievement that he has accepted this privilege with such gusto that his knowledge of the whole group of angiosperms is to-day unrivalled. This new edition of his "Families"* gives a unique panoramic view of the flowering plants. Through it the author imparts that ever-fresh wonder at the great variety of plant form which he certainly roused in those who have worked under him. To say that this is the first value of his book is in no way to detract from the second—its outstanding practical utility.

The artificial keys to the families are unrivalled, and nowhere else has the student access to a succinct description and at least one illustration of each. The author has enhanced the value of this edition by adding keys to the genera of many of the smaller families of dicotyledons, keys similar to those already supplied for most monocotyledons. "Hutchinson" undoubtedly provides the botanist's best chance of running down an unknown plant, and for this reason alone the second edition will be eagerly acquired by those who have long been unable to obtain the first.

* The Families of Flowering Plants, by J. Hutchinson. Second edition. Oxford, The Clarendon Press. 1959. 2 vols. Pp. xv+792, 450 figs. Price: seven guineas.

Hutchinson's own system of classification I place third in importance. First put forward in 1926, his division of the dicotyledons into two great streams, woody and herbaceous, has met with complete acceptance by few. It has been beneficial in throwing emphasis where it was unduly lacking, but if this division is fundamental to evolution amongst the dicotyledons, then it throws too great a strain on the concept of parallel evolution. Can we believe that from stocks such as the Magnoliales and the Ranales evolution has led by quite independent paths to *Bignoniaceae* and *Scrophulariaceae* (incl. *Paulownia*); or to *Verbenales* and the *Boraginales-Lamiales* group where gamopetalous corolla, androecium and 4-nutletted ovary show so great a similarity. Let it be clear that if Dr. Hutchinson's thesis could be substantiated its implications would be of far reaching importance to all students of evolution. Leaving aside this major criticism, however, there is no doubt that his system includes some very shrewd suggestions on the affinities of various families.

In this second edition the volume on Monocotyledons is very little changed, but that on Dicotyledons has grown considerably. The number of families in this group has risen sharply, from 264 to 342, and there is, of course, a corresponding increase in the illustrations. There are 7 new families, 2 of them attributable to Mr. J. E. Dandy. The remaining 71 families accepted now, but not in the first edition, have been proposed by other workers, many of them long ago. Hutchinson is not, however, a rabid splitter: *Degeneriaceae*, *Sphenocleaceae* and others are rejected, *Sambucus* remains in *Caprifoliaceae* and the author's vast experience of *Compositae* leads him to restate its essential unity.

One change is to be deplored: the separation of the follicular-fruited genera of *Ranunculaceae* as *Helleboraceae*. I had thought that every student of this family felt the conflict between vegetative and reproductive characters and suspected that, despite their flowers and fruits, *Aquilegia* and *Thalictrum*, or *Caltha* and *Ranunculus ficaria*, for instance, really were related. This is just what Gregory's* cytological study showed. *Aquilegia* and *Thalictrum* have in common 7 small *Thalictrum*-type chromosomes; *Caltha* and *Ranunculus* agree in having 8 large *Ranunculus*-type chromosomes. To split up *Ranunculaceae* on fruit characters alone is a most retrograde step.

The Clarendon Press have produced two sturdy volumes. The imprint of the text figures is sometimes imperfect but the typography is admirably clear and author and press are to be congratulated on a text remarkably free from error. The paper is strong, and that is as it should be. Dr. Hutchinson may be confident that, whatever the criticisms, his book is going to be greatly used.

B. L. BURTT.

* Gregory, W. C. Phylogenetic and cytological studies in the Ranunculaceae. *Trans. Amer. Phil. Soc.* N.S. xxxi, 443–521 (1941).

Printed in Scotland under the authority of HER MAJESTY'S STATIONERY OFFICE
by J. & J. Gray, Edinburgh Wt. 73554 K4