

later flowering plants are simple ones". But, unfortunately, he stops there and does not explain what these simple modifications would be, or what evidence he has to show that they have actually occurred. Much of what he says about the Caytoniales appears to be based on a misapprehension. He speaks of Thomas finding the greatest difficulty in demonstrating how the Caytoniales could be the ancestors of the flowering plants, and this, like statements of other recent authors, appears to suggest that the writer of this review advocates the derivation of the flowering plants from the Caytoniales, although he has repudiated it in four different publications since it was ascribed to him. As this misapprehension is finding its way into current teaching, attention must be directed to the statement made in 1930 (paper read at the Fifth International Botanical Congress 1930 ;

Annals of Botany, 45, 670 ; 1931) and since maintained as a working hypothesis. Thomas wrote : "The flowering plants are considered to be derived from one or more groups of pteridosperms intermediate between those which gave rise to the Bennettiales and Caytoniales".

Of course, it is far easier to criticize a book of this character than to write one, and the ungracious remarks that have just been made refer mainly to the volume as a manual for students. Plant morphologists and those engaged in the study of systematic botany will find information and interest in this work as giving a modern view of the fossil evidence for plant evolution. It shows how much more we need to know and how wide is the gap still to be bridged between the lower and the higher groups of the vascular plants.
H. HAMSHAW THOMAS.

THE SCIENCE OF COLOUR

Colour in Theory and Practice

Vol. 1. General Theory. By H. D. Murray and Dr. D. A. Spencer. Pp. xvi + 176 + 3 pl. (London : Chapman and Hall, Ltd., 1939.) 25s. net.

NATURAL colour phenomena have been to a large extent accepted, rather than investigated, until fairly recent times, but our knowledge of what the dictionaries call 'chromatics' is now growing rapidly, and the word may soon lose its unfamiliar and faintly ambiguous savour. Such commercial activities as colour photography and an ever-expanding dye industry are largely responsible for the increasing colour-consciousness of to-day, and the chief stimulus to the study of colour comes from technical, rather than academic scientific, sources. The authors of "Colour in Theory and Practice" have travelled from the particular field of colour reproduction to the general consideration of colour.

But although the present volume is primarily intended as a preliminary to a survey of the applied aspects of colour, it is none the less welcome for its own sake, as a presentation of the basic facts and theories concerning the visible spectrum and its relationships with matter and mind. The authors waste no space on a historical approach to the subject, but begin with a brief résumé of present views as to the origin and nature of light, and from this pass on to an account of the ways in which a coloured or "unbalanced" visible radiation may be produced. The next short chapter, concerning the chemistry of colour, might well have been combined with the review of coloured substances which concludes the book.

The consideration of the possible transformations of absorbed light energy would then follow on with uninterrupted continuity of theme. Similarly, the reviewer would have been inclined to put the relatively long chapter on practical light sources (if included in this volume of general theory at all), and the notes on light filters, before, rather than after, the account of spectrometers and spectrophotometers, and follow the latter directly with the important discussion of colour measurement and specification.

With the exception of this chapter ("The Measurement of Colour") the text is not too technical to be intelligible to the layman, and much of it, including the descriptions of the human eye, colour vision and its physiology, and the all too brief notes on colour in Nature, is very pleasantly readable. The authors are careful in their use of terms, and rightly at pains to stress the distinctions between objective and subjective concepts. The diagrams are helpful, although some indication in the graphs of the colours corresponding to various wave-lengths would be a convenience to non-physicists less familiar with the angstrom unit.

References to publications are scattered throughout the pages. The value of the work as a much-needed introduction to colour science would have been greatly augmented by a bibliography.

The book is handsomely produced, with excellent illustrations, including seven pages in colour to hearten the general reader into overcoming his fear of mathematical symbols ; but its price is regrettably high.
SAMPSON CLAY.