

tentative sixth condition they demand much more attention and examination in the light of a conception of consultation as a continuous relationship between groups of people which requires expression in appropriate forms.

In this study, however, the main emphasis is on the task of education. The most serious omission in the present arrangements in the nationalized industries, it is urged, is the general failure to provide any machinery for passing information about the work of the committees to the men they represent. As in the study initiated for the Committee on Industrial Productivity, emphasis is laid on the need for skilled leadership in the development of harmoniously working group or committee; but the main challenge of both these inquiries is to the task of education. Fresh constructive thinking about joint consultation both as a technique and as a philosophy of management is needed; but the most urgent need is to secure a widespread and clear understanding of what joint consultation really is, its limitations and its possibilities. For that task the report in particular supplies much useful material, but the Acton Society Trust paper is equally designed to stimulate the interpretation and exposition on which must be based an educational campaign as it desiderates.

## BOTANY FOR THE DEGREE STUDENT

### Textbook of Theoretical Botany

By Dr. R. C. McLean and Dr. W. R. Ivimey-Cook. Vol. 1. Pp. xv+1069. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1951.) 70s. net.

THE attempt to write a textbook of Botany is an audacity which admits of no excuse but success." Few would disagree with this prefatory remark in the first volume of the new text-book of theoretical botany; all will admire the audacity, even if excuses are not sought, and may, indeed, ask if it is not audacity for a reviewer to attempt to criticize over so wide a field.

The authors have made no attempt at specialist treatment, but have tried to bridge the gap between the specialist books and those designed for first-year study. Realizing that the complete work will be both costly and bulky, they have sought to arrange their text so that it will serve for a beginner as well as for a more mature general botanical student. The aim, moreover, is to place factual material in the hands of the student and thus to free his teachers from the need to use their precious lecture time for presenting material of this sort.

It is on this basis, therefore, that the first volume of the new text-book must be judged, and the first essentials are that it shall be accurate, and lucid enough not to mislead. Mistakes could scarcely be avoided in a work of this magnitude; but fundamental errors, or vague and misleading statements, are not to be expected. It is on this count that the work falls short of perfection. A few examples may be given, though others might have been selected: p. 30, in the metaphase of meiosis, "the homologous pairs of chromosomes unite, then come on to the equatorial

plane and separate, so that one whole chromosome of each pair goes to one pole and one to the other"; p. 31, reference is made to the heterotypic and homotypic divisions; and p. 32, Fig. 16 illustrates "formation of chiasmata in unsplit homologous chromosomes".

In an account of the algæ, which, the algologist might perhaps complain, have been afforded less generous treatment than the fungi, matters are little better: the definition of heterogamy on p. 51 is difficult to harmonize with that on p. 59; and on p. 104 the life-cycle diagram of *Cladophora* includes reference to an antheridium and an oogonium and to an antherozoid and an oosphere, while in that of *Dictyota* (p. 127) the implication that oogonia and antheridia occur on the same plant is, at best, misleading.

Equally unhappy are statements in other sections of the book: Fig. 697 is not likely to convince even the less sceptical students that there is much difference in the pitting of the araucarian tracheid and that of other conifers; the terms alburnum and duramen (p. 897) and autumn wood (p. 903) are surely a little out of date; does hæmatoxylin oxidize to logwood (p. 898)?; the account of tension and compression wood (pp. 904-7), if correct, is not remarkable for its lucidity, while the statement that, in trees grown in an equatorial climate, growth (of the wood) is continuous, is not as cautious as one might wish.

The book contains more than a thousand illustrations, and the authors are to be congratulated on the large number which are new. Many are from original photographs; but with some, and not a few, the reader may well not feel inclined to agree that the "naturalistic quality of photographs needs no emphasis": if examples are desired, reference may be made to Fig. 30, of *Chlamydomonas*, Fig. 88 of a *Gunnera* rhizome with *Nostoc* colonies, Fig. 269 of yeast, while it is doubtful if Fig. 857 would be recognized as collenchyma. The plain fact would seem to be that a good drawing is often greatly to be preferred to a photograph, and some of these illustrations appear to furnish ample confirmation of this contention.

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## ENZYMES

### The Enzymes

Chemistry and Mechanism of Action. Edited by James B. Sumner and Karl Myrbäck. Vol. 1, Part 1; pp. xvii+724; 13.50 dollars. Vol. 1, Part 2; pp. x+725-1361; 12.80 dollars. Vol. 2, Part 1; pp. xi+790; 14.80 dollars. Vol. 2, Part 2; pp. xi+791-1440; 14 dollars. (New York: Academic Press, Inc., 1950-52.)

THE publishers of these four books, two parts to each of two volumes, have printed at the front and top of the jacket the words "A new encyclopædic work". The stunned reviewer might be forgiven for doing no more than feebly murmur "Agreed, agreed"; but to do so might suggest discourtesy to editors, authors, publishers and potential readers. Despite the obvious fact, therefore, that such a treatise can scarcely more easily be reviewed than it could have been written by one person, an attempt should at least be made to indicate the scope of the work, of which the first part was published no less recently than December 1950. During the subsequent eighteen