

familiarity with his work is essential for any one who undertakes the employment of the serum test for human blood.

Not the least valuable and laborious feature of the volume is the very complete critical summary of the literature of the precipitins, for the preparation of which the thanks of all students of the subject are due. J. EWING.

*Praktikum für morphologische und systematische Botanik*, Hilfsbuch bei praktischen Übungen und Anleitung zu selbständigen Studien in der Morphologie und Systematik der Pflanzenwelt. By KARL SCHUMANN, late curator of the Royal Botanical Museum at Berlin. Jena, G. Fischer. 1904.

Professor Karl Schumann's posthumous text-book of morphological and systematic botany is a stout imperial octavo of six hundred pages. The work was largely in type at the time of Professor Schumann's death, and in accordance with his wish it has been brought to completion under the editorial supervision of his able colleague, Professor Max Gürke. The plan of the volume is to illustrate the facts of the morphology and classification of the flowering plants by describing in considerable detail seventy-nine species, selected to typify the most important families and arranged in the general sequence of their flowering seasons. The work is the result of wide experience and intensive study in the fields covered. By its wealth of carefully recorded facts, its conscientious detail and perfect lucidity it must at once command respect. As a laboratory guide, however, it will scarcely prove successful, at least in America. Of the plants treated, the majority are European species not generally familiar, even in cultivation, on this side of the Atlantic. It is true, the descriptions would in many instances apply with a fair degree of accuracy to nearly related American species of the same genera, yet the correspondence would be imperfect and perhaps misleading. Furthermore, students of one nationality doubtless differ somewhat in their psychological traits from those of another. It may well be, therefore, that a type of text-book suited to one nation may not be equally

adapted to another. In fact, it is the general experience in America that a laboratory guide in order to be effective in holding the attention of the student and stimulating his interest should present its subject not by long and full descriptions, but rather by indicating methods of observation and leading the student to examine and discover for himself.

One of the chief defects of the book under discussion is that, dealing as it does with an arbitrary number of unrelated species, it would leave the student with but a vague idea of the relative systematic importance of the morphological features examined, since in general he would be unable to distinguish the traits characteristic of and restricted to the particular species from the more general features common to other plants of the same genera and families. There is, in fact, little effort to correlate and draw together by any form of systematizing or generalization the morphological characteristics, which are described separately for each of the seventy-nine species.

The introductory matter is very brief, dealing chiefly with the simple microscope and the ordinary methods of plant dissection. The closing pages are, however, devoted to some excellent hints to students entering upon monographic and floristic work. There is also a list of the chief floras of different lands. This seems to have been prepared with some haste, since it contains a number of clerical or typographical errors. Surely a work which urges (p. 578) the careful verification of all citations should not set the poor example of mangling names of well-known authors, as, for instance, 'J. W. Hooker' (p. 599), 'Nathaniel Britten' (p. 600), or 'N. B. Hemsley' (p. 602). It is fair to say, however, that many such trifling slips should be pardoned in a large and posthumous work.

The volume is copiously illustrated from drawings on granulated paper executed by the author's daughter. The figures are exceedingly clear and bear ample evidence of fidelity to nature. It is a pleasure to notice that they are all fresh and original, none having been borrowed from any other work.

B. L. R.