

confusion. The chapter on senile dementia is distinctly good and very instructive.

Under "psychoses without a well-determined etiology, which are apparently based upon a morbid predisposition," are found manic-depressive insanity, paranoia, and constitutional psychopathic conditions, such as mental instability, sexual perversions and inversions and obsessions. Paranoia is very briefly described under the title of "Reasoning Insanity." We strongly disagree with the author in his use of this term; it is by no means a good one, and is, in addition, confusing, since other writers have used it as designating the maniacal stage of manic-depressive insanity.

Epilepsy and hysteria are described under the heading of "Psychoses Based on Neuroses," and the concluding chapter is devoted to the consideration of the arrest of mental development.

The book is well translated, and the index is carefully compiled. This manual undoubtedly has its merits, but, as we have already stated, it will scarcely appeal to the practitioner, as the description of treatment is somewhat meagre, and the student will find the subject-matter almost too condensed. In any future edition the author will do well to correct these defects, for by so doing he will render his book a useful manual on psychiatry.

#### OUR BOOK SHELF.

*Experiments with Plants.* By Dr. W. J. V. Osterhout. Pp. x+492; illustrated. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1905.) Price 5s. net.

THE author defines his aims in the following words (p. 7):—"The numerous questions which young people ask about plants are best answered by themselves. . . . To put them in the way of doing this so far as possible is the object of this book." In accordance with this plan, the apparatus used is of a rough and home-made description, constructed of fruit jars, lamp chimneys, clothes' pegs, india-rubber bands, and sealing-wax. Much ingenuity is shown in the design of apparatus so put together. Whether a sufficient degree of stability is always obtainable may perhaps be questioned, but from the author's point of view the advantages of his method certainly outweigh any such shortcomings. One great merit in the book is the insistence on the necessity of control experiments, which are especially needful with rough methods. The book is divided into chapters headed "The Work of Roots"—of leaves, of stems, &c.—ending up with a chapter on "Making New Kinds of Plants," which is a statement of what breeders and experimenters on variability have done rather than instructions for the making of such experiments.

The author very properly recommends common plants for use; but why students of botany should be confined to such names as "Kentucky Coffee Tree," "Dusty Miller," "Live Forever," "Switch Plant," it is difficult to say. Occasionally we find the scientific name, and in this way we learn that a "Wandering Jew" is a *Tradescantia*.

Most of the experiments are clearly described, but we have been puzzled over some of them. For instance (p. 191), the method of answering the question, "Does the leaf decompose carbon dioxide?" seems to us to involve passing a lighted candle under

water into a jar of air. Here and elsewhere in the book the author neglects simple and striking methods. It is important that the student should be convinced that oxygen is given off by green leaves in light. The above-mentioned experiment is not satisfactory, whereas Engelmann's blood method is both simple and convincing. Again, the well-known plan of counting the bubbles given off by submerged plants in light, though not free from errors, gives useful comparative data for the study of assimilation. In the same way we think that more fundamental experiments should have been given under the heading of "Stomata." Stahl's cobalt method, which is merely mentioned in a note, can be used by the most elementary of students to demonstrate important facts.

In spite of some faults, the book will be found of value to anyone compelled to give a course of physiological botany under conditions which preclude the use of ordinary laboratory fittings.

*Conversations on Chemistry.* Part i. General Chemistry. By W. Ostwald. Authorised translation by Elizabeth Catherine Ramsay. Pp. v+250. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1905.) Price 6s. 6d. net.

THE German original of this book has already received sympathetic notice in *NATURE*, and in connection with the translation now before us it is necessary to add little more than that Miss Ramsay has done her work with much skill, and has made the dialogue not less natural and vivacious than it is in the original. It is impossible to read the book without a feeling of refreshment and amusement, or without admiration of the ingenuity and resource of its philosophical author. It seems hardly fair to say that we have here a revival of Dr. Brewer or Mrs. Marcet. There are two striking differences between the old and the new dialogues. In the first place neither master nor pupil in Prof. Ostwald's book is endowed with that austere and depressing piety of mind which, to the unregenerate, provided perhaps the most afflicting feature of the older works. In the second place Prof. Ostwald's book shows a masterly treatment not only of the real difficulties of chemistry in itself, but a perfect appreciation of the pitfalls that beset the pupil in the early stages of learning. It is difficult to suppose that any teacher will fail to find something useful or to gain some valuable hints from reading the book, and on this ground it must be warmly recommended.

It would, however, be a misfortune if a teacher constrained his teaching to the exact course of the dialogue, and, of course, it would be worse still if he set so many pages as a lesson to be learned by the pupil. The real usefulness of the book will probably lie in the example it affords of the life that may be imparted to teaching when, on the one hand, the pupil is allowed a fair chance of thinking out things for himself and a full opportunity of frankly saying what he thinks, and when, on the other hand, the teacher takes the part of a guide, philosopher, and friend who has a soul above dictionaries and examination papers.

A. S.

*Mathematical Recreations and Essays.* By W. W. Rouse Ball. Fourth edition. Pp. xvi+402. (London: Macmillan and Co., Ltd., 1905.) Price 7s. net.

THIS edition differs from the third by containing chapters on the history of the mathematical tripos at Cambridge, Mersenne's numbers, and cryptography and ciphers, besides descriptions of some mathematical recreations previously omitted. The book has thus become more miscellaneous in character, but the additions fit in very well, and are all entertaining. Mr. Ball writes with enjoyment of his subject, and