

*Determination of Radicles in Carbon Compounds.*

By Dr. H. Meyer. Translated by J. Bishop Tingle, Ph.D. Pp. xii+162. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1903.) Price 4s. 6d. net.

DR. MEYER has brought out a book of considerable value to chemists engaged in research work; it is hardly a book for students, unless working along research lines. Such a work as this is very difficult to criticise, because it is really a small dictionary of methods; such dictionaries are naturally very useful, provided they are carefully drawn up, which we consider to be the case in the book before us. Take, for example, the first chapter, which consists of 37 pp., and includes practically all the methods which may be used for determining the hydroxy-groups. One might be inclined to think this rather an unnecessary amount of space to devote to such an apparently simple matter as the determination of the -OH radicle, but as there is very little padding, it really points out that in organic chemistry conditions govern everything; that a method which, under certain conditions, may be applied with success is quite useless when these conditions are altered or modified.

In the next chapter we have the determination of the methoxy- and ethoxy-groups by means of Zeisel's method. Three diagrams of complicated pieces of apparatus are given for the carrying out of this important determination. It is a pity, considering both the author and translator have evidently taken considerable trouble to bring the book up to date, and the importance of the method, that they missed Hewitt's simple modification described in the *Journal of the Chemical Society* for 1902; this is probably an oversight, because at another place they give a reference from the same journal.

Under the determination of the carboxyl groups, the method by means of the electrolytic conductivity of the sodium salts is described. It is doubtful, however, whether the description will be of much value to anyone who has not previously carried out such a determination. Not that this matters very much, because in a foot-note a reference to Ostwald's work is given, where a description of the parts of the apparatus may be found.

Dr. Meyer has evidently taken great pains in preparing this book, and has considerably added to its value by the copious references to original literature which he has added. For the rest the translator and publisher have carried out their part of the work with discretion and care.

F. M. P.

*A Laboratory Guide for Beginners in Zoology.* By Clarence Moores Weed, D.Sc., and Ralph Wallace Crossman, B.A., M.Sc. Pp. xxiv + 105. (London: D. C. Heath and Co., 1903.) Price 2s. 6d.

THIS handy and very moderately priced laboratory guide will be useful in those courses of elementary instruction in zoology which aim at a fairly wide survey of the types of animal life without going into great detail in regard to any. Thus there are instructions in regard to six Protozoa, two sponges, three Hydrozoa, a rotifer, three Echinoderms, the earthworm and Nereis, Cyclops, the wood-louse, the lobster, the crab, the centipede, three insects and a spider, three molluscs and three vertebrates, altogether thirty-two types. The directions for study are for the most part really directions, and not little paragraphs of condensed information; many of them take the form of questions. The student is not supplied with ready-made diagrams; he is asked precisely to draw certain things. There is a directness and business-like clearness about the whole book that we like, and its partiality is frankly admitted, supplementary text-books being indicated. It would

have been well if the authors had always stated what particular species they had in view, e.g. what Tubularian and Campanularian hydroid or hydroids. In some cases the headings do not read very happily, if the book is to be used in Britain, e.g. "The simple Marine Sponge (*Grantia* sp.). This sponge is a marine animal, found commonly along the Atlantic coast of the United States." But we can recommend the little book as a terse, unpretentious, and clear guide to introductory studies of the structure of animals.

*A Manual of Drawing.* By C. E. Coolidge. Pp. iv+200 (alternate pages blank). (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1902.) Price 1 dollar.

THE drawings and designs made by the professional draughtsman in a good manufacturing workshop are characterised by a style and completeness which easily distinguishes them from the amateur productions commonly met with in the technical school and college. The object of the author in this book is to give to students precise and minute instructions relating to the numerous small details of manipulation and drafting that must be followed if drawings are to be such as would command respect in a commercial establishment.

Thus we find information about drawing and tracing papers, black and coloured inks, printing processes, drawing boards and squares, compasses, scales and protractors, indiarubber, drawing pens and pencils, and, in fact, about drawing tools and implements in general. Instruction is given as to the proper way of arranging the several views in a drawing, of inserting the dimensions, printing the titles, &c. Various types of drawing are described, including detail sheets fully dimensioned, with the machining and materials specified; general views, with only leading features exhibited; patent office drawings made in conformity with the United States' regulations, and suitable for photographic reproduction, &c.

The student is assumed to have obtained elsewhere a practical knowledge of workshop processes, of machine construction, and of the forms and proportions of machine parts. The author gives that kind of information which would be gradually acquired, almost unconsciously, by any one working alongside an expert in a commercial drawing office. The book contains a useful index and a number of plates in illustration of the text. Alternate pages are left blank in order to induce and enable the student to collect and record additional notes and observations of his own, or which his instructor may impart.

*Zoologische Wandtafeln.* Gezeichnet und herausgegeben von Prof. Dr. Paul Pfurtscheller, Wien. (Wien und Leipzig: A. Pichler's Witwe und Sohn.)

THIS is a new series of large wall diagrams for lecture-rooms, similar to those which we owe to Leuckart and Nitsche. The two samples we have seen—of the sea-urchin and the snail—command our admiration, especially the former. They are boldly and clearly drawn, with more shading than colour, and they stand out admirably from a distance. Two of those on the sea-urchin sheet are even beautiful. Our only criticism is that it seems a mistake to mix up mere diagrams, e.g. two simple figures on the snail sheet, with the chief picture, which shows things more or less as they are. The mere diagram can be drawn on the blackboard in a minute, and should not be put on the same plane as the elaborate drawing of the half-opened sea-urchin, which the teacher requires as a permanent part of his illustration equipment.