

called the design of ammonia stills in relation to steam economy and the utilisation of potential heat. The fundamental principles underlying the design of stills, preheaters, condensers, dephlegmators and coolers all receive thorough consideration in this connexion. The opinions put forward are those of a successful works' chemist who writes more particularly for the benefit of other gas chemists and engineers rather than for the guidance of the chemical student.

A note of criticism might be made on the general use of chemical formulæ in a somewhat loose manner, while the chemical equations given are not always correct.

In conclusion, it should be stated that the financial aspect of the subject of ammonia distillation also receives detailed treatment, and the author makes every effort to indicate the economic soundness of processes under particular conditions.

JOS. REILLY.

The Subject Index to Periodicals, 1921. Issued by the Library Association. *B-E: Historical, Political and Economic Sciences*. Pp. 106. 21s. net. *F: Education and Child Welfare*. Pp. 28. 4s. net. (London: Grafton and Co., 1924.)

WE welcome these two sections of the Subject Index to Periodicals published by the Library Association. They maintain the high standard attained in previous sections of this catalogue. These sections index papers published in 1921, so that the Association is now allowing a little less time to elapse between the date of publication of the original papers and that on which the Subject Index is issued. It would, of course, be more useful to those engaged in scientific work if it were found possible to shorten the interval to somewhat less than three years, and the Library Association will, no doubt, when it has overcome all the difficulties connected with a work of this kind, find it possible to issue its Indexes within a period of two years from the date of publication of the periodicals indexed.

Among those subjects in the section on historical, political and economic science to which particular attention has been paid we notice agriculture, banks and banking, bolshevism, chemical manufacturers, coal trade, co-operation, the Eastern question, employees and employment, ethnology, the European War, fisheries, forestry, international law, labour, mines, railways, shipping and wages.

The section on education and child welfare will be of great value to those who are devoting themselves to the study of these subjects. An examination of the 54 columns of titles of papers in this section will show the direction in which the thoughts of those advocating reforms have been chiefly turned. We note especially educational psychology and mental tests, and papers on the position of teachers. Papers on the teaching of citizenship are grouped together, as are also those on abnormal and backward children. The question of classical education has, of course, a heading to itself. Papers coming under the general head of education occupy nine columns of the Index, but these are subdivided under various subheadings which make reference easy. There are also headings for science study and for technical education.

Thysanoures, Dermaptères et Orthoptères de France et de la faune européenne. Par Prof. C. Houlbert. (Encyclopédie scientifique: Bibliothèque de Zoologie.) Tome 1. Pp. xii + 382. (Paris: Gaston Doin, 1924.) 16 francs.

THIS clearly written and well-arranged little volume forms a handy and up-to-date work of reference to the orders of insects concerned. The longest section (Part I.) is devoted to the Apterygota or, as Prof. Houlbert prefers to term them, the Thysanura. These he divides into the two sub-orders Collembola and Monomorpha (Thysanura of most authorities). It is prefaced by a general account of their structure (based largely upon the work of Willem), and there follows an exceedingly useful series of family and generic keys, along with descriptions of the various species. This section of the volume should appeal to many entomologists since it provides a readily accessible guide to the insects of those two orders. The work of Lubbock has long been out-of-date, and the student has hitherto had to rely upon various scattered memoirs (some not easily procurable) for the identification of his material. Part II. deals in a similar manner with the Dermaptera, and Part III. is devoted to the general structure and habits of the Orthoptera, descriptions of the species of the latter order being reserved for a second volume. The book is fully illustrated and has ample bibliographical references.

A. D. I.

A Comprehensive Treatise on Inorganic and Theoretical Chemistry. By Dr. J. W. Mellor. Vol. 5: *B, Al, Ga, In, Tl, Sc, Ce, and Rare Earth Metals, C*, (Part 1). Pp. x + 1004. (London: Longmans, Green and Co., 1924.) 63s. net.

THE new volume of Dr. Mellor's Treatise includes boron, aluminium, and the rare earth metals, together with a considerable part of the section on carbon. The style and general method of treatment are similar to those used in the earlier volumes and do not call for any comment. Perhaps the most striking feature of this volume is the treatment of the complex compounds of boric acid. Some of these can only be expressed by formulæ such as $\text{KMg}_2\text{B}_{11}\text{O}_{19} \cdot 9\text{H}_2\text{O}$, $\text{Mg}_7\text{B}_{16}\text{O}_{30}\text{Cl}_2$, or $\text{Cd}_5\{\text{H}_4[\text{B}(\text{W}_2\text{O}_7)_6]\}_2 \cdot 51\text{H}_2\text{O}$, and would certainly be omitted from any elementary text-book; but they all find a place in the comprehensive treatise of the author, just as readily as if their compositions could be expressed by formulæ of the simplest kind.

The "Chemical Age" Chemical Dictionary: Chemical Terms. Pp. 158. (London: Ernest Benn, Ltd., 1924.) 16s. net.

THE dictionary gives the definitions and in many cases short descriptions of a large number of terms used in chemistry. Practically all branches are covered, and the book is up-to-date. A few sections, taken at random, were: deanimation, hæmacytometer, isomerism, oligodynamic action, quinocarbonium, thermodynamics, ultramicroscope, and X-ray analysis, and in each case a clear and accurate account of the topic was presented. The book should prove useful to technical journalists and for general reference, as well as to chemists.