

France, 9 to the United States, and only 3 per cent. to the United Kingdom.—(*U.S. Com. Rep.*, June 21, 1921.)

Aniseed Oil in the Far East.—*Finance and Commerce* (Shanghai) has recently published an article on the aniseed-oil industry in the Far East, in which it is stated that in China the oil is not extracted from the seed by pressing but by distillation, mainly at Hongkong but also in southern China, in Nanning and in Canton. The yield of oil is about 3 catties from 20–30 catties of dried seed, corresponding to one picul of fresh aniseed (catty = 1.33 lb., picul = 133.33 lb.). Aniseed oil from Hongkong is always packed in small lead cannisters, each containing 15 lb. of oil, and four cannisters are packed in each wooden case. Owing to its high price, aniseed is always liable to be adulterated, but there is little risk of this at present as samples of the sealed packages have to be drawn and analysed by the Hongkong Government Analyst prior to shipment. Great Britain, the United States, and France are the chief importing countries, but Italy is said to be an intending large purchaser. In addition to its use in medicine, aniseed oil is used in the preparation of liqueurs.—(*Ch. of Comm. J.*, July 8, 1921.)

REVIEWS.

A FRENCH-ENGLISH DICTIONARY FOR CHEMISTS. By AUSTIN M. PATTERSON. Pp. xvii.+384. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1921.) Price 18s. net.

Every technical man who wishes to acquaint himself with the progress made outside of his own country in his particular subject, a need which is to-day practically universal, is generally faced with the difficulty of correctly interpreting the foreign technical terms that he meets with. For this purpose an ordinary dictionary is very nearly useless and may indeed prove misleading. An example in point is the case of the well-known English astronomer, who, wishing to render one of his papers into French, painstakingly translated "the Eastern hemisphere" as "*le demi-monde oriental*"; he no doubt looked up the words and found them quite correctly in his dictionary, but he certainly failed to convey his meaning to a French audience. For ordinary purposes it is essential to remember that transliteration is not translation, and that the essence of good translation in the ordinary literary sense is to translate meanings and not words. In technical translation the case is different because technical words admit of being precisely translated into practically any modern language, but only on condition that the strict equivalents are known, and that the translator knows when he is dealing with a word used in a technical sense and when with a word used colloquially. For such purposes the use of a technical dictionary is almost indispensable, and fortunately there are a number of such works in existence. The real difficulty that faces the compiler of such a dictionary lies in the determination of what to omit and what to include. On the one hand, he ought to exclude all colloquial words that have not a special technical signification and which may be found in a general dictionary of the language; on the other hand, he ought to include terms used in allied branches of technology. For example, the chemist requires to understand not purely chemical words only, but also the terms used by electricians, engineers, masons, carpenters, etc.; in

fact, it is difficult to say what technical terms he may not on occasion require to interpret. There is, however, the advantage, as already pointed out, which the compiler of the technical dictionary possesses over the author of a general dictionary—namely, that he is dealing with words that admit of exact and complete translation inasmuch as they do possess precise equivalents.

The little work before us is intended primarily for chemists, and appears to have fulfilled its purpose very well indeed as far as the main object is concerned. It departs from the principles above enunciated, inasmuch as it gives a large number of colloquial French words which are to be found quite readily and correctly in any French dictionary. The man who needs to have these words translated for him could probably not dispense with the use of the latter dictionary and the object of inserting them is by no means obvious. Again, Mr. Patterson's work is decidedly weak on the engineering side. It is difficult to understand what class of reader is likely to benefit by the seven or eight pages devoted to the conjugation of French verbs; there is far too little here for the man ignorant of French grammar, whilst the information is superfluous for the man who has had an elementary grammatical training. Apart from these points, which after all are matters of opinion, the work that the author has set himself to do is well done; there are but few omissions, and perhaps still fewer actual mistakes, and the little work ought to be decidedly useful and acceptable to a wide circle of readers who may have a fair general knowledge of the French language, but are not familiar with the phraseology employed by French chemists.

HENRY LOUIS.

ELECTROCHEMISCHES PRAKTIKUM. By DR. ERICH MÜLLER. Third revised and enlarged edition. Pp. xvi.+254. (Dresden and Leipzig: Th. Steinkopff. 1920.) Price, paper, 20 marks.

DIE ELEKTROMETRISCHE MASSANALYSE. By DR. ERICH MÜLLER. Pp. vi.+110. (Dresden and Leipzig: Th. Steinkopff. 1921.) Price, paper, 8s. 3d. net.

Prof. Müller's "Elektrochemisches Praktikum" has gone through three editions since 1912, and is one of the best small text-books on practical electrochemistry. The underlying theory is in all cases clearly and concisely presented, the instructions for preparing the apparatus and carrying out the experiments are adequate, and the methods of calculation of the results are, in more difficult cases, explained by examples. The experimental work covers a wide field and includes practically all the technical processes in use. The fundamental laws of electrochemistry are illustrated by experiments, including measurements of conductivity, transport numbers, electromotive force, electrode potentials, concentration cells, oxidation and reduction, decomposition voltage, electrolytic and electrometric analysis, deposition of metals, and an excellent series of electrochemical preparations, including electrothermal processes. Although intended as a laboratory guide for students, the book should be interesting to all chemists concerned with electrochemical processes, whether actual or potential.

Electrolytic quantitative analysis is now fairly well known and is considered in most books on quantitative analysis which profess to be abreast of the times. Electrometric quantitative analysis, although familiar to "academic" chemists, is comparatively new in its technical applications, and Prof. Müller's monograph gives a concise and clear account of the progress made up to date in this field. The principle of the method is the application as an indicator of the E.M.F. of a cell composed of a normal electrode and an electrode in a

solution of an ion which is to be estimated. When the solution is titrated with a reagent which diminishes the ion concentration, the E.M.F. undergoes a sharp change at the "end-point." The theory of the method is not so simple as that of electrolytic analysis, and some knowledge of the principles of physical chemistry is required in the application of the method. An outline of the theory is given, and although the degree of accuracy at present attained is not very high, the method may often be useful and should be known to chemists.

J. R. PARTINGTON.

INTERNATIONAL HANDBOOK. THE WORLD'S CHEMICAL INDUSTRY AND TRADE, 1913-14 TO 1919-20. By DR. W. A. DYES. Vol. I. Pp. xx.+752. (Wittenberg: Hopf'sche Verlagsbuchdruckerei (Gedr. Jenne, G.m.b.H. 1921.) Subscription Price to Volumes I. and II.: 650 paper marks.

This work of reference is intended primarily to benefit those engaged in the chemical industries, who by reason of and during the war were isolated from the records of progress in other countries. To this end the author has collected, obviously at enormous pains, extracts of an informing or polemical character from the scientific, technical, trade, daily and weekly press of the period in question and arranged these under some two hundred and fifty subject-headings. The matter is in different languages, chiefly English and German; some of the extracts from English and American sources are given in German translations, others are left in English, but the comparatively few extracts from German sources are all in the original language. From this and other internal evidence, it is apparent that the work renders its greatest service to the German reader who was cut off from the literature of countries at war with his own. Extracts from German reviews, which are enclosed with the book, indicate that the service thus rendered is fully appreciated.

As typical of the matter we may take that under the heading "Dyestuffs." The section opens with statistics regarding the value and quantities of the dyestuffs exported by Germany before the war and the consumption of dyes in England and the U.S.A. A table (from an American source) gives particulars of the capital of the companies included in the German Interessengemeinschaft, but there is no further information regarding the progress or condition of the colour industry in Germany. The remainder of the section describes the attempts which have been made in England, America, and Japan to wrest a share of this industry from Germany, and quotes articles and speeches bearing upon the advisability of such efforts and their probable failure or success.

The section on "Gas Warfare" consists of quotations from English, French, and American writers all pointing out that whoever may have introduced this form of warfare, it has certainly "come to stay."

The present volume is described as "Volume I"; it would therefore be unreasonable to point out omissions, but the hope may be expressed that progress made in many directions—such, for instance, as the electrolytic production of hydrogen peroxide, which is not mentioned in this—will be recorded in subsequent volumes. The book contains also a list of chemical manufacturers, which is so incomplete that its object is hardly ascertainable—the English section bristles with misprints and misspellings.

Whilst congratulating the author whole-heartedly on the onerous task he has performed and on the interesting and valuable nature of much of the material which he has collected, one can hardly

ascribe to his work that "international" value to which his title and preface lay claim. Though we sympathise fully with his ideal that scientific and technical knowledge should know no national frontiers, we feel that the relatively small proportion of information from German sources contained in the volume, to whatever cause this is due, renders it impossible to accept it without reservation as an impartial work of reference.

REGINALD BROWN.

THE CLAYWORKER'S HANDBOOK. By A. B. SEARLE. Third edition, revised, enlarged, and largely rewritten. Pp. viii + 381. (London: Charles Griffin and Co., Ltd. 1921.) Price 21s. net.

The fact that this book has reached a third edition may be taken as an indication that it has supplied a want. Since (according to the preface) it has been practically rewritten, it becomes in a sense a new book, but as it has been presumably put together much on the same lines as the preceding editions, the chief concern of a reviewer should perhaps be to examine its reliability and to see if it has been brought up to date. It may at once be stated that the book should be useful to those for whom it is chiefly intended, namely, clayworkers. The chapters deal with materials, preparation of the clay, machinery, transport, drying, glazing, kilns, firing, defects, waste, tests, etc. An appendix of about 40 pages contains information relating to British and metric weights and measures, specifications (for firebricks, silica bricks, etc.), tables, etc., together with a lengthy list of books and journals dealing with clay working. There are helpful illustrations, and there is also a comprehensive index which adds much to the value of the work.

Numerous cross references appear throughout the book, not only to other parts of the volume, but to other publications of the author. The book would have been more useful if fuller references had been given to the sources of information respecting the more important investigations of other authors. This may possibly have been intentional, having regard to the kind of people for whom the book was avowedly written, but one cannot help thinking that additional particulars to complete the references would have been well worth inserting. Another matter which deserved more attention than it apparently received is that of proof-reading. Misprints are decidedly more numerous than is desirable in a work of this character, and although it fortunately happens that most of them are trivial—such as the reference to "the earlier stages of firing continuous films" on p. 169—others occur which might mystify (temporarily, at any rate) the class of reader for whom the book is mainly intended. An example is to be found on p. 123 ("If the heat is not allowed to leave the dryer until it is saturated," etc.). Occasionally positive mis-statements are encountered, as the reference on p. 180 to "a black calcium sulphide," and on p. 231 the assertion that "the potassium [in 'orthoclase'] may be partially, or entirely, replaced by one of several other metals such as sodium, calcium, etc., and in each case the new mineral retains its family name of felspar."

There is no great harm done—to the reader, at all events—if an author persists in using such expressions as "between each article" (p. 211), because, whatever view may be held as to the grammatical construction, the meaning can scarcely be in doubt. But such a statement as that "1 gramme of water measures 1 c.c." (p. 314) should surely not be made without qualification, and the tables on pp. 322-324 are marred by quite a number of