

(2) These papers form valuable contributions to the technology of iron enamelling, for particular problems or aspects of the industry are considered; but, so far as the technology of tinning is concerned, there are only three papers: one historical, another on the grey allotropic modification of tin, and the third giving short accounts of processes for the recovery of tin from tinned waste.

The papers which deal with the composition of various enamels and their mode of manufacture are the most important, and much information, gained by actual experience, is given. As very few works in the enamelling industry employ chemists, a paper showing how the chemical composition of an enamel may be determined by calculation has very wisely been included in the series. The paper with the title "The Examination of Cast-iron Enamels" has not been happily named. The translator is to be commended on the satisfactory manner in which he has carried out his work. Managers of enamel works and all those concerned with the problems of the enamelling industry will find much valuable information in these papers.

(3) This work deals chiefly with iron-founding, and gives a general description of the materials used, the methods adopted, and the appliances employed. The influences of the various elements usually present in cast-iron are discussed, and several analyses of pig-iron are given. The cupola and other foundry furnaces are briefly but clearly described, and an exceedingly good and concise description is given of moulding-sands and moulding. It would have been an advantage to have placed the sections on moulding-sand and openers later in the book, so as they would precede "Moulding." The book should prove very useful to technical students and to engineers who wish to gain a general idea of foundry practice.

OUR BOOKSHELF.

Die sanitär-pathologische Bedeutung der Insekten und verwandten Gliedertiere, namentlich als Krankheits-Erreger und Krankheits-Ueberträger. By Prof. Emil A. Göldi. Pp. 155. (Berlin: R. Friedländer und Sohn, 1913.) Price 9 marks.

HERE we have a clear and compendious account of the Arthropods concerned in the causation of disease, particularly of tropical diseases. It will, perhaps, be more useful in the class-room than in the laboratory, since, though the author is very sound in his appreciation of the entomological factor in pathological research, he treats his Arthropods by a sort of criminatory standard peculiarly profitable to the novice.

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In the first section the Arthropods that bite and sting in their several ways are dealt with, the structure of the organ of offence and the nature and effects of the injury being described in every case. Here is included a multitude of figures of urticating caterpillars from South America. It will surprise those who know only the scorpions of the Old World to learn from the author that from 200 to 250 children are killed annually in Mexico alone by scorpions.

A second section is concerned with Arthropods as parasites of man. These are differentiated as occasional bloodsuckers so far as man is concerned, such as mosquitoes, gadflies, &c.; professional bloodsuckers, such as *Stomoxeinæ*, bed-bugs, &c.; and thoroughgoing parasites, such as lice, fleas, bots, ticks, &c. The means and methods of offence and the effects of the parasitism are discussed; and the various kinds of parasites are described and figured, so as to make clear not only their general appearance, life-history, and metamorphoses, but also many necessary and contingent anatomical details.

The third section treats of Arthropods as carriers of specific pathogenic micro-organisms. Here the text is plentifully illustrated with figures of notorious micro-parasites in their various phases, of the infected tissues and organs of the specific Arthropod carrier, and of the disastrous effects upon the ultimate victims—men and domestic animals.

The book is written in a crisp and (if the adjective may be allowed in this connection) attractive style, and is well printed.

Grundzüge der allgemeinen Phytopathologie.

By Dr. H. Klebahn. Pp. 147. (Berlin: Gebrüder Borntraeger, 1912.) Price 4.80 marks.

PROF. KLEBAHN's high reputation as a research worker in mycology leads one to expect in a book from his pen exactly what one finds in this volume: an admirable combination of clearness and terseness, the essentials of the subject being presented in a striking manner and the details of minor importance lightly touched upon or omitted. It is safe to assert that never has such an accurate, interesting, and philosophical account of the various diseases which afflict cultivated plants been compressed into fewer than 150 pages, and that this is probably the best general introduction to the study of phytopathology that has yet been published.

The book is characterised by its scientific rather than technical treatment of the subject, the author laying stress upon the necessity for a thorough understanding of the symptoms and causes of plant disease as a preliminary to the application of therapeutic and prophylactic measures, and he has deliberately limited his scope to pure pathology. Before proceeding to consider the diseases induced by fungi, insects, and other organisms, he discusses chemical and physical conditions of the soil, climatic conditions, wounds, smoke, and chemical fumes as causes of disease in plants;