

THURSDAY, JANUARY 9, 1913.

SCIENCE AND TECHNOLOGY.

Treatise on General and Industrial Inorganic Chemistry. By Dr. Ettore Molinari. Third revised and amplified Italian edition. Translated by Dr. Ernest Feilmann. Pp. xvi+704. (London: J. and A. Churchill, 1912.) Price 21s. net.

THIS treatise, which is a translation of the third and amplified Italian edition, is divided into three parts, devoted respectively to general, non-metallic, and metallic chemistry. So far as English readers are concerned, it is open to doubt whether the general part (pp. 1-125) represents, in any sense, an improvement on the treatment of the subject to be found in standard works on historical and physical chemistry. In some cases, the views of the author are not such as would meet with unqualified acceptance by all chemists, and in these cases the translator has added emendatory notes, many of which occur in this general section (*e.g.* pp. 25, 49, 50). In the paragraphs devoted to the history of chemistry the author discusses, in some detail, the development of chemical arts among the ancient civilisations of the world. He holds that the Chinese in particular were adepts in these matters, and had actually anticipated Priestley and Lavoisier in arriving at a knowledge of oxygen and the composition of water.

The space allotted, in this section of the book, to various historical topics is not, however, proportional to their chemical interest and importance. A long footnote, occupying two-thirds of a page, refers to certain particulars in the life of Lavoisier which are of dubious import in a scientific treatise. Biographical criticism leaves us with so few illusions that we might have been spared a reference to the accusation brought against Lavoisier that he amassed, in a few years, 48,000*l.* as a *fermier-général*. This and similar items might with advantage have been replaced by such genuinely chemical matters as Rey's work on the calcination of metals, and Graham's researches on the diffusion of gases. The former of these investigators is not mentioned in connection with the anti-phlogistic theory, and the latter's experiments are dismissed in half a sentence (p. 39). A statement regarding the liquefaction of helium (p. 29) is contradicted by the facts cited on p. 312.

The descriptive portions (Parts 2 and 3) contain those distinctive features of the work which justify its translation into English. Here the

author has indicated the industrial processes involved in the preparation of the more common elements and compounds, and in those cases where the manufacture has assumed considerable proportions, full details are given in order to emphasise the commercial importance of the subject. The manufacture of ordinary and fuming sulphuric acid, the utilisation of atmospheric nitrogen, and the production of hydrogen on a large scale are examples of these topics. A new departure consists in giving the commercial price of each substance, as well as a complete summary of its industrial applications. Statistics are employed to compare the past and present importance of the commoner chemicals.

In the case of manufactures carried on to a considerable extent in Italy, such as the production of sulphur and calcium carbide, the author gives interesting details on the influence of local conditions on the development of the industry. The section devoted to metals includes full accounts of the industrially important compounds of the alkali metals, the production of superphosphate fertilisers, the modern smelting of copper, and the manufacture of Portland cement. Even the less common elements are briefly mentioned, and their industrial applications indicated. The micrography of iron and steel is described in some detail, and illustrated by two phototype plates.

There are a number of minor typographical errors scattered through the book (*e.g.* pp. 110, 112, 153, 192, 265, 287, 317), some of which are not devoid of unconscious humour. Rutherford's name is effectively Germanised to Rutherford by the simple expedient of transposing two letters. Sulphur is said to be used in the wine-growing industry against a cryptogram (*sic*) which attacks the young bunches of grapes.

G. T. M.

THE PRODUCTION OF CANE SUGAR.

The World's Cane Sugar Industry, Past and Present. By H. C. Prinsen Geerligs. Pp. xvi + 399 + maps. (Altrincham: Norman Rodger, 1912.) Price 12s. net.

ABOUT the middle of the nineteenth century nine-tenths of the world's sugar was obtained from the sugar cane. At the close of the century the proportion had fallen to about one-half, and the industry was considered by many to be dying out. Then there came a revival; the quantity began to increase, and has since grown continuously. The proportion, however, remains much about the same as before, for there has been