METALLOGRAPHY APPLIED TO SIDERURGIC PRODUCTS

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HUMBERT SAVOIA

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Trieste

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SIDERURGIC PRODUCTS

(AWARDED A PRIZE BY THE ROYAL LOMBARD INSTITUTE OF SCIENCE AND LITERATURE)

BY

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TRANSLATED BY

R. G. CORBET

WITH 94 ILLUSTRATIONS

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1910

TO

PROFESSOR LOUIS GABBA

WITH

GRATEFUL AFFECTION

TRANSLATOR'S PREFACE

In several connections, notably when compiling for the Board of Trade a French-English glossary of designations of workpeople, I have found that literal renderings of a foreign term, or even the equivalents given by technological dictionaries, are often quite different from the expressions used in this country; experts, themselves, sometimes disagree as to these, for a word current in one town is often unknown in another. A result not unfamiliar to those in the trades involved may be obtained by consulting persons connected with them; and the present translation has accordingly been revised in the light of information they have furnished, and of that gathered by reading papers and discussions by specialists.

Besides the difficulties inherent in the highly technical character of this work, there were others caused by peculiarities in the style, which necessitated occasional alterations, to make the author's meaning clearer to the reader. This has been done as little as possible, the aim throughout being faithful repro-

duction rather than elegance. Some changes in idiom have, of course, been unavoidable, and careful attention has been given to free the text from anomalies. Some may have escaped me, and for these, as for any other shortcomings, I crave the reader's indulgence.

I need add little as to the merits of the work; but what has struck me, on comparing it with other writings on the subject, is that it is more up to date than most of those available, and is rendered especially useful by its detailed practical directions.

R. G. CORBET.

January 1910.

PREFACE

ITALIAN chemists and technical men, when attempting to carry out metallographic processes, have hitherto been obliged to read a large number of works in order to glean from them the few fundamental notions of which the practical worker stands in need. This undertaking is not always feasible in the limited time at the disposal of those engaged in manufacture.

Whilst numberless methods are alluded to, moreover, in the many publications, chiefly foreign, that deal with the subject, the particulars given are comparatively meagre, as too minute explanations concerning the manual part of operations would scarcely be called for in a theoretical treatise.

Many have, therefore, been obliged to forego metallography for want of leisure, others were baffled by the extent of the subject and the number of methods; others, again, after going so far as to attempt experiments, have been discouraged by the uselessness of these trials, for which they lacked the practical knowledge not given them by books.

Being convinced of this, Signor CHARLES VANZETTI, C.E., who had long before bought a perfect

metallographic microscope, suggested to Professor LOUIS GABBA, in 1906, the sending of a technical man to Paris, the centre of metallographic investigation, on purpose to familiarise himself with it and with its applications.

Prof. Gabba put the Author in communication with Signor Vanzetti, who commissioned him to go to Paris and begin his researches under the guidance of M. POURCEL, C.E., the famous metallurgist of Terrenoire, the first, moreover, to prepare products containing manganese in a blast-furnace, and to introduce and explain their use in steel foundries.*

The authoritative support of M. Pourcel rendered possible an extremely profitable course of study in the laboratories of HENRY LE CHATELIER † at the Collège de France and the Ecole Supérieure des Mines. The Author received, at the same time, valuable theoretico-practical lessons from CHARLES FRÉMONT, the great authority on mechanical tests of resistance and the inventor of the most perfect modern machines for gauging it.

Afterwards, through the courtesy of M. GUILLET, C.E.,‡ Director of Laboratories at the De Dion-Bouton

* The London *Iron and Steel Institute* has recently awarded M. Pourcel the Bessemer Medal, the highest award of merit in metallurgical science.

† Member of the Institute of France since 1907, and Moissan's successor at the Sorbonne in the Chair of General Chemistry.

‡ Now Professor of Metallurgy at the Conservatoire National d'Arts et Métiers.