

as to the habit of the fungus abound, and while it is, of course, impossible in such a work to define species or even genera, there are excellent explanatory notes here and there for the use of the critical systematist.

The volume, which is neatly printed, is, in spite of rather too many misprints, indispensable to every professional mycologist, and will, of course, be the basis for all other fungus floras of Yorkshire and other counties.

The work affords a very good example of the excellent services to science which may be contributed by the collaboration of individual workers who are experts in different departments and will join their forces loyally for the benefit of the rest.

Of course, it is not claimed that all the fungi of the large area covered are recorded, and much remains for other workers, especially in the domain of the smaller and lower fungi; but, as has already been pointed out, we have a firm basis for the benefit of further workers, and shall hope to see the records gradually rendered more and more complete.

OUR BOOK SHELF.

The Principles and Practice of Iron and Steel Manufacture. By Walter Macfarlane. Pp. xi+266; 96 figures. (London: Longmans, Green and Co.) Price 3s. 6d. net.

THIS is a difficult book to review so as adequately to represent the nature of its contents to the "technical students, metallurgists, engineers," and others for whom it is intended. The somewhat florid style of the introduction, "Machinery ponderous and powerful or nimbly delicate and deft . . ." would lead one to expect a kind of poetic phantasy woven to give joy to the general reader, and the expectation is supported by the last sentence, about iron being the Master Metal because it has so many good qualities in well-balanced proportion. Really it is quite human, however, in that it has many wicked ways also, well known to the aforesaid engineers.

Later in the work there is a compound of the general and the technical, as is evidenced by the type of illustrations, numbering about a hundred, of which a considerable proportion are reproductions from photographs; thus, "Fig. 6, Charging a puddling furnace"; "Fig. 44, Siemens casting pit with ladle in the distance," evidently taken with a short-focus lens, for the ladle seems about half a mile away; "Fig. 54, Shovelling lime into a steel melting furnace"; while "Fig. 52, Empty steel ladle," may be introduced to finish with a little humorous touch. Taking at random the working of an acid open-hearth charge, the author says that after melting (p. 117) "Oxidation steadily proceeds. In the first two stages the oxidation is effected by the excess air which enters the furnace along with the producer gas. The oxidised products SiO_2 , MnO , and some FeO and Fe_2O_3 go into the slag. In the third stage oxidation is largely due to the oxygen in the ore which is fed in." On p. 122 the author distinctly says, "During the third or boiling stage . . . when this stage is reached ore is cautiously fed into the furnace. . . ." How long it would take an ordinary charge to come on the boil without ore one could hardly guess, but to bring it on in a reasonable time requires very considerable additions of ore to get the slag into proper condition. This is a grave error for an author who has been fourteen years in iron and

steel works, and is also very misleading to a student of the subject. The matter has been dealt with in recent and ancient literature.

To sum up, the work may be of considerable interest to the general reader, but can hardly be recommended as a guide to the technical man engaged in such work as the manufacture of steel.

On Models of Cubic Surfaces. By W. H. Blythe. Pp. xii+106. (Cambridge: University Press, 1905.) Price 4s. net.

MR. BLYTHE has attempted a difficult task, to give an account of methods of constructing models of a cubic surface without either assuming all the theory of the surface as known or recapitulating it; the result, so far as the introductory portions of the book are concerned, is an unsatisfying mixture of rudiments and quotations and references to difficult theorems. As regards the latter portion Mr. Blythe may best speak for himself. "About ten years ago my attention was drawn to arranging the twenty-seven straight lines. . . . After constructing several models, I did not continue the series, for I subsequently found that a complete set had been made in Germany. . . . Copies of these models can be purchased. Still the models described in this book are sufficient to give an idea of the shape of a cubic surface."

We think Mr. Blythe is too modest, and that this little book of a hundred pages will be of interest to those who are studying the surface and desire actually to make models; but it must be confessed that in our opinion the writer would have been better advised either to make the theoretical portions more systematic or to have omitted them, and given a fuller account of the models with many more figures. Perhaps it is fair to say that Mr. Blythe's book is a good example of what may in cases be the bad effects of a too rigid and uniform examination system; it happens that cubic surfaces are outside what is regarded as the normal course of geometry for a student for the mathematical tripos; under a free and stimulating system, when Mr. Blythe first began to take an interest in models of cubic surfaces he would have been encouraged by his environment to go on and make a complete set, and other students would have helped him, and there would have been formed a fresh rootlet for the mathematical school to grow from; as it is, the environment requires either that he should invent a completely novel theory of the surfaces or models, or pay the penalty of being regarded as off the track, except by those few who value mathematics as they find it interests them.

A Synonymic Catalogue of Homoptera. Part i. Cicadidæ. By W. L. Distant. Pp. 207. (London: Printed by Order of the Trustees of the British Museum, 1906.)

MR. W. L. DISTANT has for many years made a study of the Rhynchota, and has paid particular attention to the Cicadidæ. The catalogue of this family, together with a synopsis of the subfamilies and genera now published, was, we learn from Prof. E. Ray Lankester's preface, generously placed at the disposal of the Trustees of the British Museum by Mr. Distant. This work should be of great assistance to students of this group of insects.

Iona. By Elizabeth A. McHardy (Mrs. Raymond Smith). Pp. 48. (Glasgow: R. Gibson and Sons, Ltd., n.d.) Price 1s. net.

THIS attractive booklet provides brightly written and well illustrated accounts of Iona—"the Blessed Isle"—and of Staffa with its wonderful Fingal's Cave, together with an appreciation of St. Columba. It should not be long before the little publication secures a wide popularity among visitors to the west of Scotland.