the suspicion would be quite unfounded, and the author is merely putting an easily avoidable obstacle in the way of a general acceptance of his treatise by responsible engineers.

Mendelism. By Prof. R. C. Punnett. Third edition. Pp. xiv+176. (London: Macmillan and Co., Ltd., 1911.) Price 5*s.* net.

ALL who knew Prof. Punnett's little book entitled "Mendelism" in its original form will welcome the greatly amplified edition of it which he has now published. This edition has been entirely re-written, and is illustrated by five coloured plates. Prof. Punnett's book, in its original form, did so much to familiarise the public with Mendelian phenomena and hypotheses that the present work requires no recommendation from "the old shuffling bribed sots, called Reviewers," to use the words of William Cobbett.

The book is especially valuable because it is, in the words of the author, "in some measure a record of the work accomplished by the Cambridge School of Genetics." If the book were a complete record (which, of course, it is not), the work of that school would be an achievement of which a larger group of investigators working over a longer period of time might well be proud. The theories which have been put forward to explain the new facts may or may not survive the test of future experiment and criticism; they may be nearer the truth than the more cautious of us dare to hope. But whether they survive these tests or not, the new facts discovered constitute a solid advance in human knowledge which the carpings of those who criticise the theories put forward to explain these new facts cannot rob of one iota of its value.

The attempt to answer the question how far the Mendelian theory as held by Prof. Punnett approximates to the true explanation (if we may make the extravagant assumption that there can be such a thing) is a fascinating exercise for those who are more interested in the relation between the human mind and the so-called objective world than in the objective world itself. But this is neither the time nor the place to discuss the truth of the Mendelian hypothesis. It is enough, for the present, that the Cambridge School of Genetics has contributed handsomely to the capital of our knowledge of hereditary phenomena, and that the book before us is an admirable presentation of these contributions.

Boiler Draught. By H. Keay Pratt. Pp. vii+138. (London: Constable and Co., Ltd., 1911.) Price 4*s.* net.

IN this little book the author has endeavoured to assist those to whom the efficient working of steam plant is of importance by explanations of methods of determining whether existing arrangements are satisfactory. The book opens with a number of elementary calculations regarding the pressure, volume, weight, and temperature of air, and the resistance to flow. Calculations in relation to chimney, forced, and induced draught follow. There are also sections dealing with the construction of chimneys, the applications of mechanical draught for land and marine purposes, and the chemistry of combustion. The treatment of the subject is designed to suit those practical men whose knowledge of mathematics and science may be scanty. Indeed, the author states in his preface that while mathematical investigation is well appreciated, the results are likely to be greatly misleading if relied on too completely to the exclusion of practical experience. "It is for this reason that men of high scientific attainments are sometimes at fault when they have to tackle a problem in practical work."

That there may be another side to this question is also rendered very clear in the book. Thus in chapter vi. are given methods of calculating the approximate over-all dimensions of a fan. The methods employed can give rough results only, yet we find data stated to five significant figures and worked into the calculations, including one case of the weight of a cubic foot of water taken as 62·418 lb. While many valuable results and suggestions occur here and there, obtained from the author's practical experience, there is very little reference to recent experimental work, such as that conducted at the Manchester School of Technology and elsewhere.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Burdon Sanderson and Vitalism.

IN his interesting and sympathetic notice, in NATURE of March 21, of the Memoir of Burdon Sanderson, your reviewer discusses Burdon Sanderson's attitude towards "vitalism," and thinks that the editors of the Memoir (my sister and myself) have scarcely represented this attitude satisfactorily. Our task in this connection was a somewhat difficult one, and we may have failed in it; but the grounds of the difficulty are of so much general scientific interest that it may perhaps be worth while to refer to them more fully. We quoted in the Memoir from the following letter, written by Burdon Sanderson from Algiers in 1904 to Miss Florence Buchanan, D.Sc. (who was then assisting him), with reference to a general paper which he was endeavouring, in the face of ill-health, to prepare on the general results of his electro-physiological work.

"From your pencil notes on my MS. I take it that you regard as the *result* of an investigation of the excitatory process the complex of data relating to localisation, time-relations, and intensity of electrical change—all of these being measurements. To me it appears that when you have got by measurement a complete knowledge of what happens electrically (intensity, localisation, and time-relations), this knowledge, however exact it may be, is of no value unless it enables you to conjecture the nature of the *excitatory process* of which these phenomena are the concomitants.

"The excitatory process can best be defined as a sudden transition from less functional activity (the