

to advertisements have also their interesting features, and the numerous illustrations and process plates scattered here and there add an additional attraction to the volume. The success of this present edition will be gathered from the fact that it has already been sold right out, as is stated by the *British Journal of Photography*.

Encyclopédie Scientifique des Aide-Mémoire. Le Vin. Par Henri Astruc. Pp. 208. (Paris : Gauthier-Villars, 1901.) Price 3'0 F.

THIS little treatise on wine-making is essentially encyclopedic in character, and as such calls for only a brief notice. The author is evidently familiar with his subject, and in the limited space at his disposal has been very successful in reviewing both the scientific and economic position of the French wine industry. There is nothing novel in the scientific questions discussed in this book, but some of the economic questions brought forward are not generally recognised in this country. For instance, here we have been inclined to regard wine growing in France as only in process of recovery from the devastation wrought by phylloxera, and it comes as a surprise to be told by the author that the wine-growers of his country are at present suffering from the effects of over-production.

This little book will be useful to anyone who desires to make a rapid survey of the present position of the French wine industry. A. J. B.

A Commercial Geography of Foreign Nations. By F. C. Boon, B.A. Pp. viii + 174. (London : Methuen & Co.) Price 2s.

THIS book will not assist to make commercial geography a scientific study. Like the geographical books of old time, the volume consists largely of disconnected details which no pupil ought to be asked to remember, and which produce weariness of the flesh in the unfortunate reader. If commercial geography means what Mr. Boon makes it, then it is the duty of all who are anxious for the introduction of reasonable methods of instruction in schools to condemn it at every opportunity. Here are a few examples of unqualified or loose statements which occur in the early pages of the book. "The greatest heat for the greatest number of days is on the Equator" (p. 1). "As the Equator is neared [from the Tropics] two days have vertical sunshine at each point within the Tropics, approaching gradually to the autumn and vernal equinoxes at the Equator" (p. 1). "Added to the effects of the neighbouring land or water are the similar effects of the winds that blow over them" (p. 2). "The Gulf Stream washes the coast of Norway" (p. 11). But we do not object so much to statements of this kind as to the principle of cramming pupils with information which has to be accepted without inquiry and cannot be assimilated. The less we have of commercial geography of this kind the more likely are we to create an interest in the study of the subject.

Mining Calculations. By T. A. O'Donahue. Pp. viii + 211. (London : Crosby Lockwood and Son, 1901.) Price 3s. 6d.

THE primary object of this little book is to enable candidates for certificates as colliery managers to obtain with a minimum of trouble a sufficient knowledge of arithmetic and mensuration to pass their statutory examinations. If the student will steadily work out the numerous useful examples given by the author, his chances of success will certainly be increased. Some of the absurdly easy arithmetical questions, quoted from the official examination papers, do not tend to enhance one's respect for the statutory certificate; however, this is no fault of the author, who has simply written a book to supply a want created by the examiners appointed under the Coal Mines Regulation Act.

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LETTERS TO THE EDITOR.

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The Inheritance of Mental Characters.

ALL biologists must be grateful to Prof. Karl Pearson for his extremely valuable and interesting paper reported in your issue of December 5, 1901 (p. 118). Inasmuch, however, as his conclusions are likely to be taken as the settled results of scientific research, it may be appropriate at this time to express certain doubts which naturally arise on reading the abstract. A man at the age of thirty, for example, possesses certain physical, intellectual and moral qualities. These must be due to more than one class of factors, and may possibly be due to three:—

(1) Heredity; characters derived from ancestors, including for present purposes the results of normal variation.
(2) Environment.

(3) Soul; supposing that the man is something more than an intelligent mechanism, and considering the possibility that his soul may have preexisted his advent here as an individual of *Homo sapiens*.

The third factor will be ridiculed by many, but if it has any reality it may eventually be capable of demonstration by just such methods as Prof. Pearson employs. The first and second factors are universally recognised.

Now it is apparent at once that the influence of the several factors is not the same on all the qualities of the man. Stature will depend almost wholly on the first set of factors, eye-colour wholly so. On the other hand, health will certainly depend largely on the second, so will shyness, intelligence, &c.

If, therefore, it is found that stature and eye-colour exhibit exactly (or almost exactly) the same degree of divergence from parental or fraternal standards as do health, shyness, &c., may it not be that this disproves just what it seems to prove, because A does not equal B, but equals B+x?

It may be said that the statistics given are based on pairs of brothers, whose environment must have been almost identical, and hence the second factor would not affect the divergence between them. But this appears a doubtful argument, because (1) the treatment of successive children is very commonly not the same, and the fact of being an elder child is itself influential; (2) germinal selection must be supposed to be going on from the earliest moment of existence, and very slight environmental factors may make great ultimate differences.

There is another consideration, that of the stability of the different qualities in the race. Characters which were highly variable would not appear to be inherited to the same degree as those which were very stable. This might also appear in cases of atavism, where the pendulum of variability took an exceptionally long swing, going back to ancestral features of which we possessed no record. Thus let the inheritance be expressed by ABCDEABCDEAB, &c., instead of ABABAB, &c. In the former case our data might only cover ABCD, in the latter ABAB. We should say that the individuals of the latter series came very "true," those of the former not at all, though the result in the long run might be about the same in either case. Lest it be said that the former series is wholly imaginary, I will cite the case of the domestic dog. The ordinary mongrel street-dogs in a single town would afford material for several genera and very numerous species, judging them by the physical standards we employ for wild animals. Yet the domestic dog, taken as a whole, has not changed very much in long periods. That is to say, the extraordinary variability presented is not progressive under existing conditions, and we return sooner or later to about the starting point.

T. D. A. COCKERELL.
East Las Vegas, New Mexico, U.S.A., December 20, 1901.

I AM not unmindful of the possible influence of environment in increasing the correlation of brothers. I strongly suspect that home influences have a good deal to do with the rather exaggerated value for the fraternal correlation in the category of *conscientiousness*. But certain characters, e.g. the cephalic index after three years of age, the eye-colour between twenty and thirty