## OUR BOOK SHELF.

*The Natural History of Plants, from the German of Prof. Anton Kerner von Marilaun.* By Prof. F. W. Oliver, M.A., D.Sc. (London, Glasgow, and Dublin: Blackie and Son, 1894.)

THE high praise we gave to Prof Kerner's *Pflanzenleben* when it appeared, makes it almost unnecessary for us to say much about the English edition now in course of publication, and which will be completed in sixteen monthly parts. The German work was said in these columns to be "the best account of the vegetable kingdom for general readers which has yet been produced." This judgment can also be applied to the translation which Prof. Oliver has made, with the assistance of Miss Marian Busk and Miss Mary Ewart. In translating a work, some of the brilliancy of the original is necessarily lost. It is difficult, however, to find awkward expressions in the pages before us; in fact, very few of the idiomatic phrases of the original work have survived. And the translation is scientifically accurate, as well as entertaining and instructive. Lovers of nature will find every page of the book interesting, and the serious student of botany will derive great advantage from its perusal. The illustrations are beautiful, and, what is more necessary, true to nature. The complete work contains about one thousand engravings on wood, and sixteen plates in colours. Botanical science will benefit by the issue of Prof. Oliver's edition of a splendid book.

*Notes on some of the more Common Diseases in Queensland in relation to Atmospheric Conditions,* 1887-91. By David Hardie, M.D., Hon. Physician Hospital for Sick Children, Lady Bowen Maternity Hospital, Brisbane. (Brisbane: Beal, 1893.)

THE author of this work has a most important aim in view, viz. to establish the connection between the weather and the prevalent diseases in Queensland, and expresses a hope that, in time, he will be able, if furnished with a forecast of the weather, to predict with certainty the diseases likely to predominate during the various seasons of the year, and thus to lay the foundations of a practical system of preventive medicine.

The conclusions are so interesting that some of his leading results may be briefly given.

The annual death-rate of Queensland per 1000 population is 15·11, varying from 13·38 in August and September (spring) to 16·28 in November to March (summer and early autumn), as contrasted with the death-rate of Great Britain for the year, 18·8.

The yearly mortality is lowest in West Southern Queensland (Darling Downs and Warrego), where it is only 8·92 per 1000, a little over half of the average Queensland rate, and the highest is 34·70 in West Northern Queensland (Normanton), a tropical region at the extreme north of the colony. This would point to the great advantage of altitude, combined with dryness, as seen on the Darling Downs, over marine influence and moisture to be found in the sea-coast districts. When we come to different classes of disease, we find that diphtheria, though specially prevalent in April, May, June, and July (winter), is endemic to some extent in all seasons, and causes a mortality of 2·15 per cent. Whatever contributes towards cold and dampness of the air during the autumn and winter, causes an increase in the death-rate from diphtheria, and, according to Dr. Hardie, the neighbourhood of swamps and marshes have considerable influence in this respect. Whooping-cough, on the other hand, attains its maximum during the warm and moist months of the year, and its close connection with a medium temperature for all seasons of the year with high relative humidity, is considered to support the assumption of its germ origin.

Phthisis is common along the eastern portion of the colony from Cooktown to Brisbane, reaching a maximum of 12·86 per cent. in the Rockhampton district; but this high mortality is partly to be attributed to the large Polynesian population, employed on sugar plantations in these districts, who are specially liable to phthisis. In the western and northern districts, however, it is much less prevalent, and the average percentage of deaths from all causes gives to phthisis 8·75. The months when the mortality is greatest are July, August, and September, and there seems to be no special connection between atmospheric moisture and phthisis mortality, but a low temperature in summer and autumn is favourable to a low phthisis mortality. Acute respiratory diseases, such as pneumonia, pleurisy, and bronchitis, are observed all over the colony, and vary in mortality in different parts; the highest on the coast and the lowest inland, the months of highest mortality being June, July, August, and September; the maximum is reached during and immediately after the colder period of the year.

The book, with its copious and valuable tables, is an honest attempt to deal with a very difficult problem, and thoroughly merits success, and if the author will only persevere in his researches, still more important results may follow.

## 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.]*

### Panmixia.

I AM much obliged to Prof. Weldon for having so promptly answered my request, and hope that his example will be followed by any naturalists who may have any other grounds for questioning the doctrine of Panmixia. Meanwhile, however, there are two or three points touching which I should like to be sure that we correctly understand each other.

(1) Hitherto all naturalists who have written upon the subject have agreed, that "*the survival-mean must (on cessation of selection) fall to the birth-mean.*" And, in now questioning this view, Prof. Weldon appears to contemplate the difference between birth- and survival-means of only the first generation, which would be very unfair. Again, I do not follow Prof Weldon's meaning in what he says with regard to another point. Assuredly "every statistician knows" that selection can maintain the "mean height of a regiment" at 67½ inches, by enrolling only those individuals who are either "more than 66 and less than 69 inches high." But this would be *artificial* (*i.e.* intentional) selection. The "cases" to which he alludes, where *natural* selection could destroy individuals nearest the mean line, while favouring those which lie at greater distances *both above and below* this line, must be very exceptional.

(2) As regards the second cause of degeneration under Panmixia (viz. atavism), Prof. Weldon says merely that it is "not demonstrated by any statistics." This is true enough. But the same has to be said of natural selection. Whether in the building up of a structure by natural selection, or in the subsequent breaking down of a structure by atavism on the withdrawal of selection, the statistical method is equally unavailable for testing either theory: in both cases the most effective variations (*i.e.* deviations from the mean) at any given time are those which are most *numerous*, and therefore most *minute*. Hence, in both cases the best "demonstration" of the theory which can be offered is that which is yielded by the parallel facts in our domesticated animals.

(3) The only objection which is urged by Prof. Weldon against the last of the three causes which I mentioned (*i.e.* irregularities of heredity when uncontrolled by selection) is one which tells against the theory of Panmixia only because it does so against that of Natural Selection. As I understand, the argument is, "Natural selection is in most cases an imperfect agent in the adjustment of organisms": *ergo*, the cessation of