

One word more, if men will write nonsense, they might at least endeavour to write original nonsense. It is sad to think that even young ladies should have to admire the old empty sentences in every new book. S.

OUR BOOK SHELF

The Darwinian Theory and the Law of the Migration of Organisms. By Moritz Wagner; translated by J. L. Laird. (Sandford.)

AFTER the perusal of the preface to this pamphlet, the reader will expect to find that a serious objection to the Darwinian hypothesis has been detected, and that what is to follow will, by the introduction of a new law, clear up the assumed difficulty, and immortalise its discoverer.

"The Law of the Migration of Organisms" of Prof. Wagner is that it is only by the isolated migration of single individuals from the station of their species, that natural selection could and can be effected, and that only by this means new varieties of plants and animals could arise in the past as well as in the present. This law is based on the considerations that the greater the change to which individuals are subjected on migration from their homes to some fresh locality, the greater will be their tendency to vary, and the less they have the opportunity of crossing with the parent stock, the more permanent will variations become. Most of the observations on which these arguments are founded have been arrived at from the author's researches on the distribution of insects and plants; and he has been led to propose it, because, as he says, "Darwin's work neither satisfactorily explains the external cause which gives the first impulse to increased individual variability, and consequently to natural selection; nor that condition which, in connection with a certain advantage in the struggle for life, renders the new characteristic indispensable."

To us it is not easy to see what direct bearing this law has on the theory of natural selection, for it seems to be nothing but one of the many deductions of Lamarck's theory of the origin of species. It is evident that on that very ingenious but equally inefficient hypothesis, the removal of individuals from their homes to some other locality in which the temperature and food are different, would cause them to vary; and that if the so modified forms are allowed again to mix with those which have not altered their position, the induced peculiarities will disappear. But, though by artificial selection an apparently similar result may be attained, yet in a wild state this is hardly the sequence of events which the evolution hypothesis supposes. According to it, the forces which come into play affect large numbers, and being generally comparable in degree and gradual in their action, those individuals which escape change in one direction are almost certain to undergo some equally considerable modification in another; consequently there will at no time be left any of the original unmodified stock for the varieties to intermix with, as required in the theory under consideration, at the same time that the effect of simple change of locality in producing new and well-marked varieties has not been conclusively proved.

From the study of the breeds of horses and cattle, Prof. M. Wagner is convinced that the invariable result of intercrossing is uniformity, and that only in connection with isolation is natural selection able to come into play. This, as do many other remarks throughout this pamphlet, shows clearly that its author does not really recognise the point of Mr. Darwin's great theory, and that whilst under the idea that he is attempting to modify it, he is really discussing another, but distantly related, and much less important problem. Such being the case, it is not surprising that the author of the theory of Natural Selection

should differ from the German professor; with whom we also cannot agree in thinking that "perhaps that generous British naturalist, who is always open to conviction, after calmly weighing his reasons and data, may yet be induced to modify his opinions."

A Practical Manual of Chemical Analysis and Assaying, as applied to the Manufacture of Iron from its Ores, and to Cast Iron, Wrought Iron, and Steel as found in Commerce. By L. L. de Koninck, Dr. Sc., and E. Dietz. Edited, with notes, by Robert Mallet, F.R.S., F.G.S., M.I.C.E., &c. (London: Chapman and Hall, 1872.)

THE above little work appeared at Liège in 1871, and as it was well arranged, succinct, and clear in its descriptions, Mr. Mallet considered it worthy of translation. The plan is similar to that of Fresenius's well-known quantitative analysis, the reagents being described first, then the apparatus and operations, and then the practical application to the special class of work to which the book is devoted. On the whole we cannot help thinking that too much space is given to matter with which every person ought to be thoroughly familiar before he attempts to make a practical application of his chemical knowledge. The supersession of the skilled chemist by the "tolerably intelligent man" mentioned by the editor in his preface is not, we think, a desirable reform. The editor's notes consist of some four and twenty pages of small print at the end of the book, and they are full of valuable suggestions. His remarks on the construction and arrangement of the laboratory of an iron-works are particularly worthy of attention. The book concludes with a table of atomic weights, one for the conversion of English weights and measures, with their metrical equivalents, and one of constants for calculating percentages of substances found. The book will no doubt prove very useful in its special field.

Verhandlungen der k.-k. Zoologisch-botanischen Gesellschaft in Wien. Jahrgang, 1872, 22^{er} Band. (Leipzig Brockhaus.)

THE annual volume of "Transactions of the Zoological and Botanical Society of Vienna" contains, as usual, a number of interesting and valuable articles. The papers are almost entirely systematic and descriptive:—On the flora of Poland (the longest paper in the volume); on birds from the shores of China and Japan; on the lichens of the Tyrol; on a collection of birds from Australia; on the bees of Germany; on North American Micro-Lepidoptera; on the oak-galls of Central Europe; and others of a similar character. Physiological or anatomical contributions occupy but a small portion of the volume, which is illustrated by seven plates.

The Art of Grafting and Budding. By Charles Baltet. (London: W. Robinson, 1873.)

THE various modes of the reproduction of plants comprised under the designations grafting, budding, layering, &c., have been more scientifically studied and carried to greater perfection by gardeners in France than in England. Baltet's "L'Art de Greffer" is the text-book on this branch of horticulture, and of this little volume we have here a translation, although the omission to note this fact on the title-page might give unwary purchasers who have not dipped into the preface the impression that it is an original work. M. Baltet is so successful a fruit-grower, and his manual is so well and favourably known, that no apology was necessary in furnishing the English reader with a translation of it, which will be an indispensable companion to all engaged in horticulture. At the end of the volume is a useful list of the more commonly grown trees and shrubs, with instructions as to the best kind of stock on which to graft them, and the method to be pursued; though it is a pity that the translator did not