

THURSDAY, SEPTEMBER 21, 1899.

ECLIPSES.

The Indian Eclipse, 1898. Edited by E. W. Maunder, F.R.A.S. Pp. xii + 172. (London: Hazell, Watson, and Viney, 1899.)

The Story of Eclipses. By G. F. Chambers, F.R.A.S. Pp. viii + 259. (London: George Newnes, 1899.)

NOTWITHSTANDING the fact that the totally eclipsed sun can only be observed for something like three hours in a century, an extensive literature dealing with the phenomena has come into existence. Two distinct branches of the subject may be recognised—one referring chiefly to past eclipses, which have their principal use in chronology, and the other bearing upon the more recent eclipses, in which attempts to extend our knowledge of the sun itself have taken the place of superstitious fear. Of the two books named above, the first belongs to the latter category, while the other is apparently intended to give a simple survey of the whole subject.

The first book forms the report of the two expeditions organised by the British Astronomical Association to observe the total eclipse of January 22, 1898, and gives an account of the objects and results of the observations made. The organisation of the expedition, combining science with pleasure, appears to have been in capable hands, and the Association is to be congratulated on the fact that some of those who took part in the observations gave the first place to science. Mr. Maunder's party at Talni was especially active, but Mr. Bacon's party appears to have arrived at Buxar too late to undertake anything very serious. The duplication of results, which inevitably followed from the fact that the eclipse was well visible to observers all along the line, to a certain extent reduces the value of the work at any particular station, each party probably being able to claim but little in the way of novel results which would not otherwise have been brought to light. Thus it is that the more specially valuable results of these expeditions are those obtained by Mr. Evershed and Mrs. Maunder—the former with the ultra-violet region of his photographs of the so-called "flash" and coronal spectra, and the latter indicating the best means of photographing the long extensions of the corona. Miscellaneous observations of the usual character are included in the report, as well as a chapter of hints for future work. No effort has been spared to make the report attractive; the general story of the expeditions forms very interesting reading, and the explanatory matter is very clear and concise, while the numerous illustrations from photographs—not all of scientific value, however—are beautifully reproduced. The chief scientific interest undoubtedly belongs to Mr. Evershed's fine photographs, taken with a very modest prismatic camera, and the full discussion of these will doubtless yield valuable results.

Mr. Chambers's book has been written primarily for the benefit of the English-speaking people who may expect to witness the phenomena of the total eclipse of May 28, 1900, in Spain or the United States. A very small part, however, is given to the information which seems to us what the average probable observer will desire to know

the greater part of the book being a sort of descriptive catalogue of eclipses, ancient and modern, including lunar eclipses. A complete want of proportion is, in fact, shown throughout; for instance, more than a dozen pages are taken up by an attempt to prove that the backward motion of the shadow on the dial of Ahaz was caused by a partial eclipse, while only two pages are given to the three important eclipses of 1893, 1896, and 1898. The author appears to have entirely failed to grasp the enormous advances which have lately been made, and leaves his readers in complete ignorance of the more important observations which now occupy the attention of astronomers during eclipses; thus, less than a single page is occupied by references to the spectroscope, and most of the statements made are now known to be erroneous. Finally, in his desire to satisfy the thirst for knowledge which it is one of the main objects of this series of books to create, the author refers almost entirely to works which comparatively few will be able to read, and quite omits to mention even the late Mr. Ranyard's classical compilation. The only redeeming features of the book, bearing in mind its more particular aim, are the thirty-three pages of matter describing the general phenomena of a total eclipse, and the appendix indicating how one may get to Spain or Portugal for the next eclipse.

A FRENCH WRITER ON CLASSIFICATION.

Aperçus de Taxinomie Générale. Par J.-P. Durand (de Gros). Pp. 265. (Paris: Félix Alcan, 1899.)

EVERY scientific worker who takes in hand the task of classifying the objects of his study comes thereby into relation with the domain of logic and metaphysics. Whether this be done consciously or unconsciously, the classifier cannot avoid raising and dealing with questions which are the concern of philosophy as well as of physical science. The author of the book before us, starting from the position that all taxonomy (which form he prefers, on etymological grounds, to the more usual "taxonomy") must conform to logical requirements, proceeds to give a careful and elaborate analysis of the principles of logical division so far as they are involved in the classifications of science. To this he adds a free criticism, mainly from the logical point of view, of the labours of scientific taxonomists; and in the last place he furnishes some suggestions for the guidance of future workers in the same field. His preliminary analysis, if not very profound in its reasoning, is marked by the lucidity and good sense so constantly to be met with in writers of his nation. It does not add very much, except in clearness and fulness of treatment, to what is to be found in most standard works on logic, nor does it always avoid insisting at considerable length on the trite and obvious. This, however, evidently arises from the anxiety of the author to make himself thoroughly understood, and to allow no omission or ambiguity in the steps of his argument. He has certainly succeeded in expressing himself so clearly that whatever may be thought of his doctrine, no mistake can arise as to his meaning.

With regard to the critical portion of the work, it must be granted that most of the author's strictures are, from his own point of view, well founded. Nevertheless, it may be questioned whether the logical blots he contrives to hit