

and processes are treated with a clearness, conciseness and completeness that make the book a delight to read, and although, as he says, "my aim has not been to introduce novelties," yet he has succeeded, in so far as we are able to predict, in placing before students a book not only of practical utility, but also of great educational value.

Stocks and shares, and such like transactions, have all been treated more in accordance with the methods of the present day than is usual in such treatises. There has also been inserted a chapter on foreign exchanges for the benefit of those preparing for examinations in commercial arithmetic. The examples are of a varied and useful nature, and are numerous and well chosen: each new principle or process is accompanied with one or two sets of them, while interpolated throughout are many to be worked out by those who wish to revise their back work as they proceed in the subject. Miscellaneous exercises to the number of 500, together with sets of examination papers, form also a useful addendum. W.

Journeys in Persia and Kurdistan. By Mrs. Bishop (Isabella L Bird). Two Vols. With Portrait, Map, and Illustrations. (London: John Murray, 1891.)

THIS work consists of letters written in the course of the second half of journeys in the East which extended over a period of two years. The author had intended, in the event of their being published, to correct them by reference to notes made with much care. Of these notes she was robbed, and she refers to the loss as her "apology to the reader for errors which, without this misfortune, would not have occurred." Perhaps, however, the book is all the better for being presented essentially in the form in which it was originally written. The record of the writer's impressions has thus a directness, simplicity, and freshness of which it might to some extent have been deprived by elaborate revision. Mrs. Bishop does not profess to have written a book on Persia and Eastern Asia Minor. She has merely set down what she herself saw during her travels in those countries. But she has done this so well that ordinary readers are not likely to resent the slightness of her references to the administration of government, the religious and legal systems, the tenure of land, and the mode of taxation. The illustrations are very good, and add considerably to the interest of the narrative.

A First Book of Electricity and Magnetism. By W. Perren Maycock, M.Inst.E.E. (London: Whittaker and Co., 1891.)

THE scope of this work is limited to the syllabus of the elementary stage of the Science and Art Department. It is intended as an easy introduction to many of the text-books now in use, which, although termed elementary, are of rather too advanced a nature for some students to commence with; the author considering that they might be led to "take a greater interest in their work" by the help of such a book as he has put before us.

Throughout the three parts, which deal severally with magnetism, electro-kinetics, and electro-statics, the explanations are of a plain and simple nature, while the illustrations bring out clearly the various points which they are intended to exhibit. The information is based on the latest ideas; and interpolated in the text are many questions, the answers to which the student should write out before proceeding beyond them.

The book will be found really very useful for beginners, and will be to them a good introduction to higher works.

A Cyclopædia of Nature Teachings. With an Introduction, by Hugh Macmillan, LL.D., F.R.S.E. (London: Elliot Stock, 1892.)

THE compiler of this volume has brought together a large number of extracts from various authors, setting forth

what profess to be "facts, observations, suggestions, illustrations, examples, and illustrative hints taken from all departments of inanimate nature." Here is the information offered to us about "the sun-controlled stars":—

"When stars, first created, start forth upon their vast circuits, not knowing their way, if they were conscious and sentient, they might feel hopeless of maintaining their revolutions and orbits, and might despair in the face of coming ages. But, without hands or arms, the sun holds them. Without cords or bands, the solar king drives them unharnessed on their mighty rounds without a single misstep, and will bring them in the end to their bound, without a single wanderer."

This sorry stuff is a fair specimen of a good many of the "Nature Teachings" presented in the "Cyclopædia." A more suitable title for the compilation would have been "Scientific Gush." The compiler does not always even give accurate titles to his extracts. A passage from one of Mr. Ruskin's writings has the strange heading, "The Star Mercury."

LETTERS TO THE EDITOR.

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On the Attitudes of the Zebra during Sleep, and their Influence on the Protective Value of its Stripes.

NOWADAYS, when the colours of animals and their uses for the purposes of recognition and protection are forcing themselves upon the attention of all naturalists, it is not wonderful that an animal so conspicuously marked as the zebra should have commanded a large share of notice.

Much as it has been considered, however, I do not think we have yet learned all the lessons that it has to teach us.

That its bold and vivid stripes should be of immense service for recognition may be accepted as beyond dispute.

The statement of Mr. Francis Galton, that on a clear moonlit night these vivid stripes melt into invisibility, and to an eye not absolutely focussed to the animal itself, but to objects in its immediate vicinity, it is quite unseen, even when so near that its breathing can be heard distinctly, proves most indubitably their immense protective value. As he says, "If the black stripes were more numerous, it would be seen as a black mass; if white, then as a white one; but their protection is such as exactly to match the pale tint which arid ground possesses in the moonlight."

Prima facie, this is hardly what one would have expected, but when pointed out by a competent and trustworthy observer, even a slight knowledge of the laws of light proves it to be true.

Let anyone notice at what a short distance a lady in a *galatea* dress with broad stripes becomes invisible in the moonlight, and he will be at once convinced of the truth of Galton's remark.

Prof. Henry Drummond further says:—"When we look at the coat of a zebra, with its thunder-and-lightning pattern of black and white stripes, we should think such a conspicuous object designed to court, rather than elude, attention. But the effect in nature is just the opposite. The black and white somehow take away the sense of a solid body altogether, and the two colours seem to blend into the most inconspicuous grey, and at close quarters the effect is as of bars of light seen through the branches of shrubs. I have found myself in a forest gazing at what I supposed to be a solitary zebra, its presence betrayed by some motion due to my approach, and suddenly realized that I was surrounded by an entire herd, which was all invisible until they moved." By this I understand Prof. Drummond to refer to his observations *in the day-time*, as Mr. Galton speaks only of the moonlight.

One can readily see how the shadows of the branches in a tropical forest falling upon the zebras would so intermingle with the stripes of the animals as to add enormously to the difficulty of recognition by human eyes, and also, in the dim light of the