

the eating. And the new-comers grew and thrive as never has any immigrant race before or since." The tendency in animals, as we ascend in the scale of life, to assist one way or another in the further maintenance of their offspring, either by development of a nutritive yolk or by feeding them after they are hatched, is certain. "The explanation of this is very simple. As the population of the earth ever increases and competition grows sharper, it is those who have this assistance in their younger days that are enabled to succeed in the world, and to arrive at maturity. And these possess the inheriting tendency to do the same, or very likely a little more, for the new generation than their parents had done for them. 'If I could only give John a thousand dollars when he is twenty-one, I shall be satisfied,' says the sire; 'my father was only able to give me a hundred and a freedom suit.'"

The Reptilian Period is followed by "the Age of Brutes," wherein the maxim "might is right" was the ruling power. This is followed by "the Anthropological Age," that of the present time; a time of advance according to evolution, and not of decadence, for all we know tends to show that "the course of history is one of progress, and that consequently man is an elevated and not a fallen being; that he is a perfected creature and not a degraded divinity; that his course is Excelsior, onward and upward, and not downward." And if we consider the age of Man, in contradistinction to that of brute and reptile, to have been that in which man first appeared on earth, what may the present be considered—but the age of Woman. "Historically considered, her case is very strong. If the position of woman continues to become exalted in the future at anything like the rate it has advanced in the past—granted that she began as the slave of a brute—that future will show not an equality, but woman the ruler, the subordinate man; and these are advantages in her favour which none but the naturalist dreams of."

"A complete equilibrium—when for every desire there shall be a gratification," is the author's deduction as to the future, things being as they are; but "it would seem that life on earth is doomed to die a violent, and not a natural death. Man proposes, but the attraction of gravitation disposes," and so "we must be resigned, remembering that after all we are but a mere speck in the great celestial economy, which will lose nothing by our death."

The above short account of this eccentric and amusing work, which excels more by the quaint way in which well-known facts are put, than by anything original in itself, will be best supplemented by a perusal of the original.

OUR BOOK SHELF

The Elements of Chemistry. Theoretical and Practical. By William Allen Miller, M.D. D.C.L. LL.D., late Professor of Chemistry in King's College, London. Revised by Herbert M'Leod, F.C.S., Professor of Experimental Science, Indian Civil Engineering College, Coopers Hill. Part I. Chemical Physics. Fifth Edition, with additions. (London: Longmans, 1872.)

ALTHOUGH Parts II. and III. of this well-known manual have needed frequent alteration and revision as the science advanced, Part I. has, until quite re-

cently, experienced but little change from its well-known form. The recent great advances which have been made in what is now so well known, or at least so often heard of, as solar chemistry, have necessitated considerable additions to the edition of 1867, the last that left the hands of the lamented author.

The name of Mr. M'Leod is a guarantee that the work has fallen into good hands. At page 196, a most complete and well-condensed statement of the present aspect of the subject will be found. The early Indian observations of Captain Herschel and others are referred to, and an account of the discovery of the method of observing the chromosphere without an eclipse is given, and also a sketch of the nature of the phenomena thus observed. A very good statement of the present state of our knowledge with regard to the thickening of the F line, and of Frankland and Lockyer's researches on that subject, is also given, and reference is made to their remarkable observation of the different lengths of the metallic lines above the pole, an observation which has since led to such important results in connection not only with solar and stellar, but with terrestrial spectroscopy. The additions conclude with a very clear and succinct account of our knowledge of the movements of the gaseous masses on the surface of the sun, and the means of measuring their rapidity and direction. The nature of the spectroscopic phenomena of sun-spots is also described, but somewhat briefly. The added portion is illustrated with twelve woodcuts.

Mr. M'Leod's hand is again visible in the chapter relating to atomicity, where he has added in notes several important points in modern chemical theory, which had not been sufficiently explained in the original work of Dr. Miller; and we also notice in the body of the book a short explanation of the graphic and symbolical formulæ now so much used in explaining chemical facts to the student. We most cordially welcome this new and improved edition of an old friend, and congratulate the present editor on the share he has had in producing it.

R. J. F.

The A B C of Chemistry. By Mrs. R. B. Taylor. Edited by W. Mattieu Williams, F.R.A.S., F.C.S. (London: Simpkin, Marshall, and Co., 1873)

THIS little book is intended apparently for the use of very young children. The attempt to explain the nature of the elements by analogy with the letters of the alphabet is somewhat obscure, though it would perhaps be difficult to find a different method. The book is divided into lessons, and each lesson followed by questions which are, on the whole, well selected. The same cannot, however, be said of the experiments at the end of the book, which all smack strongly of the "conjuring trick." We cannot coincide with the editor in recommending the book to artisans and business men, who, we think, might attempt something a little more advanced, even as a first book. For those, however, who wish to teach children chemistry, it will no doubt be useful.

Third Annual Report of the Wellington College Natural History Society, December 1870 to December 1872. (Wellington College: George Bishop, 1873).

It is disappointing that the first words of this report, as in the case of the Rugby Society which we noticed recently, should be a confession of partial failure: "Natural History," the Preface begins by telling us, "does not flourish at Wellington College . . . The chief reason undoubtedly is, that during the past two years the older Fellows—and in particular the Sixth Form—have ignored the existence of the Society altogether." Judging from what is said at p. 36, the apathy of the older members of the school is owing to some antagonism which exists between the Natural History Society and the Debating Society attached to the school. But, with Mr. Penny, we