

fidence about the time of rotation of Mercury and the inclination of the axis of Venus and of the prodigious height of the mountains on these two planets; they certainly ought not to have been put down as well-ascertained matters of fact. Figs. 67 and 68 I confess are beyond me.

These samples, culled from different parts of the book, are enough to give a fair idea of its general character, and the impression made on my mind by a general perusal is that it is by no means an ideal performance. But there is much that is attractive about it. It is crowded with illustrations, many of them artistic and apposite, though in the case of some it is hard to see upon what they are intended to throw light. With children it will be deservedly a favourite. I think I know a boy, of some eight or nine years, not much addicted to reading, who will devour the "pictures" and render the life of his elders a burden by the countless questions they suggest. And the elders will, many of them, find in it much interesting matter; and if what they read is not always quite sound and here and there a little dismal, there is much that is lively and stirring and to which no exception can be taken on the score of accuracy. We may wish the book good speed till something better of its kind displaces it.

A. H. GREEN.

SIR W. BOWMAN'S COLLECTED PAPERS.

The Collected Papers of Sir William Bowman, Bart., F.R.S. Edited for the Committee of the "Bowman Testimonial Fund," by J. Burdon Sanderson, M.D., F.R.S., and J. W. Hulke, F.R.S. In two volumes. (London: Harrison and Sons, 1892.)

NO more fitting record of a well-spent life could have been given to the world than these two volumes, containing "The Collected Papers" of the late Sir William Bowman.

In July, 1888, the "Bowman Testimonial Fund" was inaugurated. Its design was to make to Sir William Bowman some acknowledgment of the appreciation in which he was held on account of his high personal character and of his professional and scientific attainments. This took first the form of a portrait of himself by Mr. Oules, R.A., and further of a republication at least in great measure of his various scientific memoirs. These memoirs have been edited, with the assistance of the author, by Prof. Burdon Sanderson and Mr. Hulke.

The first volume contains the whole "of the epoch-making researches which were accomplished by Sir William Bowman between forty and fifty years ago in the field which he himself designated as that of 'Physiological Anatomy,'" for he regarded the discovery and uses of parts as the main purpose of anatomical investigation. This volume has been edited by Prof. J. Burdon Sanderson, and contains three memoirs from the "Philosophical Transactions" on the minute structure and movements of voluntary muscle; on the contraction of voluntary muscle in the living body; and on the structure and use of the Malpighian bodies of the kidney, with observations on the circulation through that gland; also the author's contributions to "The Physiological Anatomy and Physiology of Man." This work was published between 1839

and 1856, by Drs. Todd and Bowman, and we learn the interesting details that out of a total of 298 illustrations to the two volumes, 120 of these were from the drawings of Bowman. This volume concludes with four contributions to the "Cyclopædia of Anatomy and Physiology" on Mucous Membrane; on Muscle; or Muscular Motion; and on the Pacinian Bodies.

The second volume comprises a selection of "reprints," together with some papers, now first printed, under the headings miscellaneous, surgical, and ophthalmological. These have been selected from a large amount of material, and arranged with the assistance of the author. This volume has been edited by Mr. J. W. Hulke, who writes that, "read from the standpoint of the time when each was written, these memoirs, in addition to their intrinsic merits, have, as marking the views and opinions then prevalent, a distinct value for the student interested in the history of modern medicine."

The work is prefaced by a brief memoir by Henry Power, in which he reminds us that this man of many parts and much learning "had a clear idea of the relative value of the different branches of knowledge associated with medicine, and that he recognised the futility of any endeavour on the part of the student to make himself a profound chemist, botanist, or physiologist, believing that such an attempt necessarily leads to the neglect of the practical subjects which are the occasion for which these foundation sciences are studied. No one knew better than he that *ex libris nemo evasit artifex*, the scene of the labours of the student, was, in his opinion, at the bedside of the patient." These ideas of Bowman are of especial importance in these days, when the tendency of the teaching in our medical schools is for each teacher to try to make his subject the one alone necessary, instead of its being but a small part of an important whole. The sketch, which is all too short, is appreciative and sympathetic. One little trait we miss; while the great physiologist's love of country life is hinted at, his love for and knowledge of flowers is passed over, and yet those who were privileged to know him in his days of well-earned rest and leisure will remember what a delight his garden was to him. Two portraits are given; both are photographs. One is of the painting by G. F. Watts, R.A., of Bowman when forty-eight years of age. This hardly does justice to the original painting, and one is of the painting by W. W. Oules, R.A., which was done for the "Testimonial Committee Fund," in 1889, when Bowman was in his seventy-third year. This is an excellent and pleasing likeness.

OUR BOOK SHELF.

Aids to Biology. By Joseph W. Williams. (London: Baillière, Tindall and Cox.) (Students' Aids Series.)

THIS little volume of 142 pages, small octavo, is the second work which has reached us written up to the standard of the first examination of the Conjoint Board of the Royal Colleges of Physicians and Surgeons. The information which it contains is transcribed from the best sources available, and the author has woven the excerpts into a very presentable whole, written in good, clear style, and exceptionally free of gross errors. The pages of the volume are enlivened by thirty-nine small woodcuts and a well-chosen epilogue from Broca, and there are