

"The explanation of the loss or gain in weight on burning tasked the best efforts of the whole scientific world for a couple of hundred years,"

and this is followed by an account of Priestley's discovery of oxygen which even his greatest admirers would scarcely sanction. After stating that Priestley burned quicksilver in the air and obtained a red powder, he goes on:—

"The experiment so far was no different from what had been done before, without result, but Priestley, with that brilliant imagination which has so often characterised the great leaders of science, saw a new possibility. If mercury had changed to a red ash by burning, could not the substance which had so changed it be obtained from the red ash in its original form by heating?"

Cavendish's discovery, we are told further on, settled questions which had troubled men of science for two centuries. To the question, "What is water?" Cavendish gave the reply, "It is hydrogen oxide."

Sufficient has been said to illustrate the peculiar defects of the book, and it is not a little surprising that none among the ten ladies and gentlemen named in the preface to whom the MS. and proof were in turn submitted should have directed the author's attention to them.

(2) Although we are deluged with books on qualitative analysis, Dr. Caven's new volume may be regarded as by no means a superfluous addition to the number. He starts on the perfectly correct assumption that qualitative analysis, properly studied, may serve as a foundation for a sound knowledge of practical and theoretical inorganic chemistry, and develops his method along these lines. There is, of course, a great deal about group reagents and tables of separation which are common to most books on the subject, but there is, in addition, a useful general introduction, which is clear and concise, and a final chapter on the systematic examination of inorganic substances. The author does not tell us for what class of student the course is intended, and now that it is becoming the fashion to serve up chemistry to suit the diverse needs of different classes of students, or, as someone expressed it, to sell it in assorted penny packets, we doubt whether any but the embryo professional chemist could give the time necessary to complete it.

It is doubtful, too, if it is desirable for any student to postpone quantitative work until so much qualitative analysis has been assimilated.

Experience shows that an early acquaintance with the former is an excellent discipline in careful manipulation and exact observation, and the best antidote to untidy and sloppy habits of work. J. B. C.

#### OUR BOOK SHELF.

*La Vita di Michele Faraday.* Narrata da Andrea Naccari. Pp. 370. (Padova: Fratelli Drucker, 1908.) Price 3 lire.

THOUGH there exist four well-known biographies of Faraday in the English language, one only, the brief essay by Tyndall, "Faraday as a Discoverer," has been translated into Italian. Neither, until the appearance of the work now under review, had any Italian biography of Faraday been written. Prof. Naccari,

whose position as professor of physics in the University of Turin guarantees his competence in physical science, and who is himself an experimental investigator of some distinction, has now written a life of Faraday which worthily presents the career of our great countryman. He has drawn freely and with due acknowledgment from all the four English biographies, and has had the advantage also of being in possession of the volume of printed correspondence between Faraday and Schönbein, which was published more recently than any of the four. Thus, without being either encumbered with the mass of details of Bence Jones's authoritative memoir, or restrained within the smaller compass of the three smaller biographies, he has been able to produce a work which in certain aspects is the most satisfactory life of Faraday yet compiled. He has not failed to incorporate the newer material while preserving what was of permanent value in the old.

The life-story follows the familiar lines. The author has not been able to add anything to our knowledge of the doings or wanderings of Faraday in Italy as the assistant of Davy in his eighteen months' tour of 1813-15. Neither has he thrown any further light upon the episode of the misunderstanding between Faraday and Nobili and Antinori in 1832 respecting their supposed correction of errors which he had not committed. In the author's preface he states that in his first ten chapters he has considered the man rather than the philosopher, with the intention to make him known and to make him loved. In his eleventh and last chapter, which occupies more than one-third of the book, he treats of Faraday's scientific work. Here he follows conscientiously and skilfully the evolution of Faraday's discoveries in their chronological order, but discusses them in their relation to modern views and discoveries. He lays great stress upon Faraday's electro-optic pioneering discoveries as having been provocative of so much of the later developments of physics. He concludes by citing a characteristic passage from the peroration of one of Faraday's last Royal Institution discourses in 1858.

The book is not illustrated by any cuts. It avoids all mathematical expressions; but it is eminently readable, and is well printed. English men of science owe a debt of gratitude to Prof. Naccari for his faithful presentation of one whose memory they so highly honour.

*Botanisch-Mikroskopischer Praktikum für Anfänger,*  
By Prof. Martin Mobius. Zweite Auflage. Pp. xi+123. (Berlin: Gebrüder Bornträger, 1909.) Price 3.20 marks.

THE exercises, sixty-four in number, contained in this little book are designed to make the student familiar with the outlines of plant structure in the chief subdivisions of the vegetable kingdom. The directions for making and mounting the preparations are clear and good, and the text is not overburdened with the details which the student ought to learn from the preparations themselves. The illustrations, which are diagrammatic, may also be found useful, although we think the work would not have been impaired in value had they been omitted. The fact that a second edition has been reached proves that its author has met a need felt for such a book, but it seems odd to discover the statement that the aleurone-containing cells of the castor-oil bean belong to the cotyledons (Keimblätter). We also prefer the style of *Ranunculus acris* instead of *R. acer* (p. 9, &c.). But on the whole the book is useful, well printed, and sensibly bound, and its price is moderate.