

If the discussions on animal spirits, which Mayow identified with his nitro-aërial particles, are less suggestive to-day, they are none the less interesting as a record of contemporary chemical and physiological progress. As a specimen of these early views the following quotation is of interest: "If the stomach be quite empty of food, its internal membranes are, as is probable, pinched by the nitro-aërial particles, and hunger seems to arise from this."

It is a pleasure to have a thoroughly readable English translation of these classic papers by Mayow. They can be recommended as entertaining specimens of scientific imagination and critical acumen, as well as striking illustrations of an appreciation of the experimental method long before the modern period of discovery in chemistry.

LAFAYETTE B. MENDEL.

Descriptive Biochemie mit besonderer Berücksichtigung der chemischen Arbeitsmethoden.

By DR. SIGMUND FRÄNKEL. Dozent f. med. Chemie an der Wiener Universität, Wiesbaden: J. F. Bergmann. 1907. pp. 639. Price, 17 Marks.

This book contains a description of the substances occurring in the animal body together with the methods for their isolation, their synthesis, and their quantitative determination and also their degradation products. Special chapters are devoted to the ferments and to the chemistry of the organs, secretions and excretions. The book is intended to serve as an aid to workers in physiological chemistry. In the preparation of the book, the literature up to the end of the year 1907 was consulted and numerous citations are made.

The facts of physiological chemistry are given in the book in the most compact sort of way but not to the detriment of the subject. Some exception, however, may be taken to the very free use made of abbreviations of names of common things which will require the reader to learn quite a number of abbreviations devised by Fränkel himself. In some parts of the book there appears evidence of haste in the preparation of the manuscript as shown by inaccuracies of statement and incorrect formulas. The book contains a vast amount of valuable information brought up to practically the latest date, and is a rich mine to physiological chemists.

JOHN MARSHALL.

Studies in Plant and Organic Chemistry and Literary Papers. By HELEN ABBOTT MICHAEL (Helen C. DeS. Abbott), with Biographical Sketch. Cambridge, Mass.: The Riverside Press. One vol., pp. 423. 1907. Price, \$2.50 net.

Although the subject of this appreciation had a "genius" for music she deserted it to study Helmholtz's work on optics. From physics her "interest ran to zoology and the dissecting of animals." Next she enters a medical college and passes "the first year's examination in chemistry, anatomy and physiology with a record of one hundred in

each branch." Her investigative turn of mind then finds expression in working out several phytochemical problems and in delivering public lectures on such broad subjects as "plant analysis as an applied science," "the chemical basis of plant forms," etc.

Not content with what she can attain on this side of the Atlantic, she goes to Europe in search of a laboratory in which to pursue her phytochemical studies. However, she returns to America and resumes the study of medicine. After her marriage she starts on a trip around the world. A short residence at Worcester is soon interrupted and residence is taken up in the Isle of Wight where a private chemical laboratory is equipped. Here she works jointly with John Jeanprêtre as she had previously worked with Trimble in Philadelphia.

Returning once more to America she delivers her last lecture on a phytochemical subject. Again she goes abroad, but this time "her interests" are "enlisted in wider fields," *i. e.*, she writes about the Austrian peasant and kindred topics. A third time she matriculates at Tufft's and wins her medical degree in 1903. After a short medical practice she died November 29, 1904.

EDWARD KREMERS.

Life and Scientific Activity of N. A. Menshutkin. By N. MENSHUTKIN. Published by M. Frolovaia, 6 Galernaia Street, St. Petersburg (In Russian).

A detailed biography and review of the work of the late N. A. Menshutkin by his son. Considerable space is devoted to telling of the struggles of the Russian students for liberty of assembly, etc., and of the faculties of the University and Polytechnic Institute for autonomy.

H. M. GORDIN.

Neue Capillar- und Capillaranalytische Untersuchungen. By FRIEDRICH GOPPELSROEDER. Basel: Emil Birkhauser. pp. xiv + 81 pp. + 52 tables. Price, 6 Marks.

This interesting little book is a concise report of original work in a field which the author has made peculiarly his own. He gives a list of his eight earlier publications upon the same subject, the first of which appeared in 1861.

As the facts Goppelsroeder has based so much work upon are, perhaps, not widely known, it may not be amiss to state them briefly. When strips of filter paper (cotton, linen or other fabrics may be used, but filter paper is generally preferable) are hung with their ends dipping in liquids or in solutions, capillary force causes the liquids to creep upward to definite heights which are different for different substances, as in capillary tubes. The effects of adsorption are also apparent and the result, when several substances are in the solution, is the formation of bands or zones of different widths, each zone containing mainly some one of the dissolved substances. Numerous qualitative separations can be brought about in this way, and corroborative color tests can be applied to the several bands on the paper.