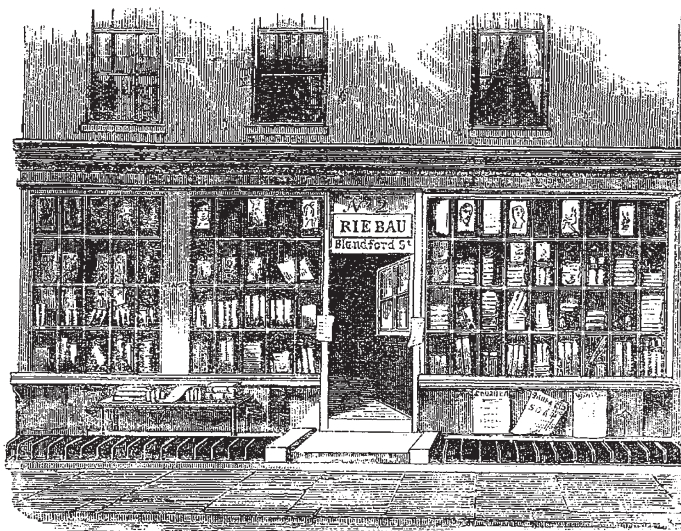


and so clear in character that I can think and work for them."

"I do think that the study of natural science is so glorious a school for the mind, that with the laws impressed on all created things by the Creator and the wonderful unity and stability of matter and the forces of matter, there cannot be a better school for the education of the mind."

his imagination,—as a man, truthfulness, kindness, and energy. He speaks also of the great influence of religion on his character.

To form a complete conception of Faraday we must picture him calmly, patiently, and honestly asking questions of nature in his laboratory, and following up the intuitions of his genius; now chatting with his friends in a strain of kindly sympathy or genial playfulness, then



BOOKSELLER'S SHOP IN BLANDFORD STREET WHERE FARADAY WAS APPRENTICED

For giving us this correspondence we owe no small debt of gratitude to Dr. Bence Jones, who has also enriched the biography by letters which Faraday received on various occasions from many eminent men. In conclusion he enumerates what he conceives to be the chief characteristics of the subject of his memoir: as a philosopher, the trust which he put in facts, and the power of

giving forth the results of his own or others' discoveries to large and rivetted audiences with perfect simplicity of thought and language; experimenting before them with marvellous dexterity; writing learned papers and inventing useful applications; but ever enriching mankind both by the wealth of his discoveries and the beauty of his example.

J. H. GLADSTONE

#### OUR BOOK SHELF

**Sorghum and its Products.**—*An Account of recent Investigations concerning the Value of Sorghum in Sugar Production, &c. &c.* By F. L. Stewart. (Lippencott: Philadelphia. 8vo. 1869. London: Trübner.)

Mr. STEWART informs us that sorghum was introduced in 1854 into the United States from France, whither it had been carried from China. It is now grown on a large scale and quite successfully, in North America. The little treatise now before us is intended as a manual for the manufacture of syrup and sugar from this plant: the author has divided his work into thirty chapters, treating consecutively of the history and cultivation of the sorghum, the extraction of sugar from it and the mode of utilising the various waste products obtained.

Mr. Stewart's manual may be read with interest, not only by manufacturers—who will find it most practically written—but by all who feel a pleasure in the success of economic chemistry. The author does not, however, carry his description so far as the final stage of a finished process. He seems to have contented himself with writing merely for farmers of about 75 acres, and instructing them how to prepare on their own land "a golden syrup, unexcelled either in colour or flavour by the best products of the refineries" (p. 153), or "a fair yellow sugar." This is not the proper condition of a great national industry. The successful manufacture of sugar, indeed, can hardly be

attained without the concentrated effort of a large capital, aided, even then, by considerable special knowledge. The class of cultivators described by the author would consult their own advantage by contenting themselves with the humbler office of contributing the raw material,

**Vegetable Essences.**—*Die Pflanzenstoffe* in chemischer physiologischer, pharmakologischer, and toxicologischer Hinsicht. Bearbeitet von Dr. Aug. Husemann und Dr. Theod. Husemann. Erste Lieferung; Bogen 1—16. (Berlin: Springer, 1870. London: Williams and Norgate.)

THE first section of an important work on those products of the vegetable kingdom which are of importance to the chemist, the physiologist, and the physician. These substances the MM. Husemann classify as follows:—A, Simple combinations; (1) Bases or alkaloids; (2) Acids, both those of general distribution and those of special development; (3) Neutral substances, with the same distinction. B, Compound substances; (1) Volatile oils; (2) Resins; (3) Fats. In each section the substances are arranged under the natural orders to which the plants belong; and we have an account of their discovery, mode of preparation, properties, composition, products of decomposition, behaviour with various reagents, and physiological and toxicological effects. The present part does not exhaust the alkaloids.

A. W. B.