

OUR BOOK SHELF.

Soils: their Nature and Management. By Primrose McConnell. Pp. xii+104. (London: Cassell and Co., Ltd., 1908.) Price 1s. net.

IN this little book the working farmer or gardener will find set out clearly and from his own point of view just that basis of the scientific knowledge of the soil that he ought to possess for the intelligent management of his land. The author, Mr. Primrose McConnell, is well known as a practical farmer, who has been trained in science and has shown a special interest in the application of scientific principles to the implements used for cultivating the land.

Mr. McConnell begins with an account of the origin of soils, their composition, classification, and distribution on the different formations of Great Britain, in which he gives some indication of where good and bad soils occur, and of their characteristic trees and weeds. The more valuable part of the book is, however, that which deals with soil physics and the effect of cultivation and management upon the all-important factor of the texture of the soil. The author is, as might be expected from a man accustomed to tillage operations, free from the temptation to regard the soil purely from the chemical point of view as a medium for the supply of the plant with certain salts; again and again he lays stress on the importance of tilth and the way it can be affected by the operations, both manurial and mechanical, of the farmer. In this direction it is very desirable that more experimental work should be done; the basis of the statements usually made as to the effect of various acts of husbandry upon the water content and temperature of the soil is astonishingly slight. For example, we should doubt a statement on p. 97 that rolled soil $1\frac{1}{2}$ inches below the surface may be 10° F. warmer than the same soil not rolled, as also the explanation which follows—but the experimental evidence we could bring against it is not so strong as the importance of the question would warrant.

Here and there throughout the book there are small mistakes and misreadings in dealing with scientific matters, but they are of small account, and do not touch the general course of the argument, so that we can cordially recommend the book to the class of readers for whom it was designed.

The Life and Work of George William Stow, South African Geologist and Ethnologist. By R. B. Young. Pp. vii+123. (London: Longmans, Green and Co., 1908.) Price 3s. 6d.

SOUTH African geology has yielded many results of world-wide interest, including the extinct fauna of the Karroo and the Palæozoic glaciation of South Africa. The debt due to George William Stow, the pioneer in the discovery of both subjects, will now be paid more easily owing to the admirable sketch of his career by Prof. R. B. Young. Geologists would, however, have been still more grateful for this biography if it had included a table of contents, an index, and a bibliography.

Stow was born at Nuneaton in 1822, and educated at a school on the Isle of Dogs. Though anxious to be an engineer, he was trained for medicine; but he did not qualify for practice, emigrated to South Africa in 1843, and lived there until his death in 1882. Considering the time and place in which his life was spent, it was apparently not rich in striking incidents or adventures. It was, however, during a trek to dodge the rebellious Kafirs in 1850 that he found in the Rhenosterbergen the first of the extinct reptiles of the Karroo. He fortunately reported his discovery to Prof. Rupert Jones, to whose help and encourage-

ment Stow's services to geology are largely due. Stow's life was unsettled; he was thrice married, and in the search for a livelihood he was at different times teacher in the schools of the Colonial Church, book-keeper, trader at Queenstown, wine merchant at Kimberley, diamond merchant, geologist to the Orange Free State, and manager of the South African Free State Coal and Mineral Mining Association. His main scientific achievements were his discovery of the fossil reptiles of the Karroo, his recognition and proof of the glacial origin of the Dwyka conglomerate, his collection of Bushman drawings, his valuable memoir on the geology of Griqualand West, published by the Geological Society, and his two reports on the geology of parts of the Orange Free State, in which he described the geology of the area on the southern border of the Rand basin and part of the Vereeniging coalfield. Unfortunately, Stow's detailed account of the geology of Griqualand was never published, and the manuscript is now in the library of the Geological Society of South Africa.

Stow claimed the discovery of a second Cainozoic glaciation of South Africa, and in his glacial enthusiasm he described the diamond pipes of Kimberley as due to the action of ice. His view of a late Cainozoic glacial action in South Africa was at one time accepted in Europe, but is now discredited. His discovery, however, of the Upper Palæozoic glaciation has been confirmed, and will always give Stow's name an honoured place in the list of South African geologists. J. W. G.

Lessons in Hygienic Physiology. By W. M. Coleman. Pp. ix+270. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1907.) Price 3s.

OF the many school physiologies, this is one of the best written, best arranged, and best proportioned. Since Huxley set the fashion more than a generation ago, the range of school physiology has remained pretty much the same; but there have been improvements in method. The method of this book is specifically adapted to the needs of teacher and pupil. All through, there are suggestions for making the teaching concrete, for "founding the study on facts and not mere words" (preface to the teacher). The illustrations are very varied, and set forth with many small original touches. The "review" and "thought questions" are obviously the careful work of an experienced teacher. Principles are never lost sight of, and the exposition never becomes mechanical or irrelevant, as so often happens when written examinations are the objective. But the book is admirably suited even for examinations. Taught as it may and should be taught, this little book should yield excellent results. Food and stimulants are specially discussed. The volume is one of a graded series.

L'Aérobisation des Microbes Anaérobies. By Georges Rosenthal. Pp. 107. (Paris: Félix Alcan, 1908.)

Anleitung zur Kultur der Mikroorganismen. By Dr. Ernst Küster. Pp. v+201. (Leipzig: B. G. Teubner, 1907.) Price 7 marks.

IN his interesting essay, Mr. Rosenthal first describes the methods by which anaerobic microbes may be isolated and cultivated, then methods for measuring the degree of anaerobiosis, either by a pressure gauge fitted to an exhausted chamber or by the degree of growth occurring from above downwards in a tube containing a deep layer of culture medium, and, finally, the technique whereby different anaerobic organisms may ultimately be transformed into aerobic ones. This, according to the author, may be accomplished by simultaneously gradually admitting air