THE AGRICULTURE OF MODERN EGYPT.

Text-Book of Egyptian Agriculture. Edited by G. P. Foaden and F. Fletcher. Vol. i. Pp. 320. (Cairo: Ministry of Education, 1908.) Price 30 P.T.

THE introduction of agricultural schools and colleges into countries where agriculture has hitherto been nothing more than a tradition must inevitably lead to the production of a number of text-books specially written for particular countries. Although the same broad principles hold everywhere, the factors coming into play are so numerous that the student cannot apply the principles to particular cases until he has had considerable experience in the analysis of agricultural problems. He must, indeed, learn his principles through the local practices, and no matter how sound a book may be, its usefulness is very limited unless it is well furnished with local applications.

The present volume is the first attempt yet made to teach agricultural science through Egyptian illustrations. The volume before us deals with soils, irrigation, land reclamation and manures. A second volume is promised dealing with crops, fungoid and insect pests, and animals. The services of several contributors have been enlisted.

The general result is distinctly satisfactory; the student gets the kind of information he wants, and probably forms a more intelligent appreciation of the principles of his subject than would otherwise be possible. The book is also useful to the non-technical reader interested in Egypt, because of its accounts of the land-development methods now in process of application.

The opening chapter deals with the Egyptian climate and its effect on crops. Then follows a long chapter on the composition and properties of soil in relation to plants, and afterwards we turn to the more special Egyptian part, which is very interesting. The valley of the Nile is bounded by high land said to be incapable of cultivation; the population is essentially agricultural and shows no sign of emigrating southwards to the Soudan; in consequence, the agriculture of Egypt must develop on intensive lines. The area of land is being increased by reclaiming the lakes and their margins and the waste lands of the interior; it is calculated that another 25 per cent. can still be added to the present cultivatable area. Drainage, reclamation, and irrigation of land are therefore described in considerable detail. The water is either pumped or syphoned out from the lake; then the canals and drains are completed, and next the land is washed with the Nile flood to remove salt, of which all but the last 1 or 2 per cent. can be readily removed. Finally, the land is levelled to facilitate irrigation; this is done by means of a scoop, but is very expensive and laborious. It is then ready for cultivation, but as it may contain 1 or 2 per cent. of salt a small millet ("dineba"), useful for fodder, and capable of withstanding salt, may be grown as a first crop, or, if the conditions are more favourable, rice. In the Wady Tumilat a reed known as samar, and used for making mats, &c., is largely cultivated for this purpose. If dineba or rice grow successfully, the second stage may be entered upon with a crop of berseem, or Egyptian clover, which enriches the land in nitrogen and organic matter, two defects from which it suffers. The process is now complete, and cotton or other crops can be taken; the land has not, however, attained its maximum productiveness, but will go on improving for several years. Bad spots must be improved by alterations in drainage, extra washing, or ploughing.

The composition of the solid matter brought down by the Nile naturally receives attention. On an average it contains 0·13 per cent. of nitrogen while the river is in flood, but five or six times as much in the months of low Nile. Speaking generally, Egyptian soils are said to be deficient in nitrogen and also in phosphoric acid, but only occasionally in potash.

The general chapter on soils reveals a defect from which this type of book must suffer. The subject-matter is in places rather out of date, while statements are often made on very slender evidence. Far too much is made of an alleged acid excretion from the plant root; there is really no evidence that anything except carbonic acid is given off. Sulphate of ammonia is incorrectly said to be of no value as manure unless nitrifying organisms are present. Salts are stated to diffuse upwards in the soil even when there is no upward movement of the soil water. The existence in the soil is assumed of waste products of plant life injurious to other plants. Other instances might be quoted. These things can, of course, be put right in subsequent editions, but it is in the direction of keeping the strictly general and scientific matter up to date that writers of local text-books will find their chief difficulty.

THE BINNENTHAL.

La Vallée de Binn (Valais). Étude géographique, géologique, mineralogique, et pittoresque. By Léon Desbuissons. Pp. viii+328 and map. (Lausanne: Georges Bridel et Cie., 1909.) Price 10 francs.

THE Binnenthal, a valley in the south of Switzerland on the Italian border, is little known to the many English people who yearly visit that delightful country. It was "discovered" more than twenty-five years ago by a well-known member of the Alpine Club. He loved the quiet and beauty of this valley, as well as the numerous walks and climbs; when his friends asked him to describe it, his answer was, "There is no glacier there and no alpine glow," and, thanks to his reply, the valley has remained unspoilt by the tourist crowd.

For the last ten years the Binnenthal has attracted the special attention of mineralogists on account of the discovery of more than twelve minerals new to science; some of these consist only of a few minute crystals of which there is not yet sufficient material for a chemical analysis.

M. Desbuisson has produced, with the able assistance of numerous men of science and writers, a very interesting account of the natural and local history of the Binnenthal. This book contains a number of

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