

dry weather flow of sewage is, perhaps, a usual capacity provided"), affords such uncertain guidance upon important details of works design.

Neither practical nor scientific value can be attached to Table XV, "Showing the dimensions of several septic tanks in use in England," or to the bald statement that circular tanks of the Dortmund type are in use, as septic tanks, in the absence of comment as to the suitability of the design to the object in view. The comparison between contact and percolating filters is carefully, and on the whole fairly, drawn, although it is not quite clear whether the working costs quoted are strictly comparable.

Assumption of the colloidal form is so characteristic a property of faecal matter that the author's belief that the colloidal matter of sewage is derived in great measure from soap would seem to require some definite experimental support or reconsideration.

The book is well indexed, and is provided with a useful bibliography. PERCY GAUNT.

THE PRODUCTION OF NEW VARIETIES OF PLANTS.

Fundamentals of Plant-Breeding. By Dr. J. M. Coulter. Pp. xiv + 347. (New York: D. Appleton and Co., 1914.) Price 6s. net.

PROF. COULTER is entering the ranks of the writers of books on scientific subjects, as he already has a place amongst those who produce scientific books. In the volume before us he has certainly achieved a considerable measure of success in making difficult matters fairly easy of comprehension by any ordinarily intelligent person. The carping critic may perhaps object that the dose of science is sometimes contained in too abundant a vehicle of padding, but at least he will scarcely allege that the padding itself is totally devoid of flavour.

The author has skimmed over many difficult and debatable matters with a freshness and vigour of expression which makes his book a pleasant one to read, and he has contrived to weave into the text a very considerable amount of theory and fact. Even those who are tolerably familiar with the work of plant breeding will probably find much that is of interest in what we might perhaps describe as the more remotely relevant matter. The book is, of course, written from the American viewpoint, but it is good that people in this country should have brought forcibly to their notice the supremely important problems that underlie so much of scientific agriculture, in which an immense amount of capital is invested. The Americans take these problems seriously, and

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the people are interested in the results which mean so much to the country, for it is from the soil and its living products that the permanent sources of wealth of a community must, after all, largely depend.

Prof. Coulter deals with the various methods of raising new and valuable plants, of conserving what has been obtained by the application of rational, and therefore truly scientific, principles which enable disease to be successfully fought, and by which further improvements are to be secured. He also deals with the more outlying topics of forestry, the soil, search for new plants, the work of experimental stations, and so on, and he may be congratulated on the production of an interesting, instructive, and readable volume.

We note a few points in connection with which a future edition will, perhaps, afford an occasion for modification. The lettering of the figures on p. 11 is omitted; and surely Figs. 15 and 16 should not be quoted from the text-book of which Prof. Coulter is joint-author, but from the original source, *i.e.* from Bonnier's admirable paper on the effects of habitat on plant structure. Exception might well be taken to the illustration on p. 5 of fluctuating and constant variation, on the ground that the potato tubers quoted are the result of vegetative, and not of sexual, reproduction, and the illustration itself also strikes one as having an air of unreality about it. A serious misapprehension of Weismann's position would probably be gathered by the uninstructed reader of p. 68, on which it is briefly stated that "Weismann thought that all the characters of both parents are represented by ids in the fertilised egg. This was the necessary antecedent to 'amphimixis.' Mendel, on the other hand, showed that characters are segregated in the reproductive cells." Weismann would certainly have repudiated the justice of the contrast in this form. But, despite slips such as these, the book is a good one.

OUR BOOKSHELF.

The Earth: Its Life and Death. By Prof. A. Berget. Translated by E. W. Barlow. Pp. xi + 371. (New York and London: G. P. Putnam's Sons, 1915.) Price 7s. 6d. net.

PROF. BERGET has written in popular terms a physical history of the earth. He has endeavoured to discern the mode of its origin and to estimate its age, to describe the phenomena of the present living globe, and finally to forecast the manner of its death. He has certainly succeeded in rendering many difficult lines of reasoning clear and intelligible to the general reader. The book is in no part dull, and would not read like a translation were it not that English equivalents