

to get rid of refuse-matters, and not to see how long we can keep them about our houses in a *presumed* harmless condition. The Rivers Pollution Commissioners in their first report, 1868, have no hesitation in pronouncing the dry-earth system, however suitable for institutions, villages, and camps, where personal or official regulations can be enforced, entirely unfitted to the circumstances of large towns.

The subject of sewerage is very fully treated. In the consideration of the separate system, that at Memphis, Tenn., and Pullman, Ill., are mentioned and described. The best method of sewer-ventilation is still undetermined in this country, and the sanitary journals are at the present time discussing the subject with a good deal of earnestness. On this point Dr. Corfield says that the very common plan of ventilating sewers by means of untrapped rain-water pipes from the roofs of houses is extremely dangerous. These pipes are often very loosely jointed, and the air rising from the sewer will escape through every such joint, possibly into bedrooms; and in many cases the open head of the pipe is just beneath a dormer or attic window. During heavy rain the rush of water down these pipes will force the air of the drain into the interior of the house through trapped or untrapped openings. He also condemns the practice of ventilating the sewers by means of the soil-pipes of houses, as there is constant risk of the escape of sewer-air through defective joints into the interior of the house. The house-drain should pass through a disconnecting chamber with an air inlet, and be trapped before entering the sewer. Connecting the sewers with furnace chimneys is also condemned. The Shone, Liernur, and Berlier systems of sewerage are described in a concise but thoroughly intelligible manner.

Among other interesting topics discussed, and which we are compelled to pass over for want of space, are the sanitary aspects of the water-carriage system, the value of sewage, the injury which it works to rivers, the pollution of drinking-water, the discharge of sewage into tidal waters, the straining and precipitation of town-sewage, filtration, irrigation, and the treatment and utilization of manufacturing-refuse. In speaking of the influence of sewage-farming on the public health, the author states, that, as far as nuisance is concerned, there is no doubt that if irrigation farms are badly managed they may be made a nuisance to the neighborhoods. Ordinary sewage is only in a very slight degree offensive when fresh. What is really the most offensive part of sewage farms is the black slimy mud which collects along the sides of the carriers when the sewage is not filtered before being sent to the fields. It is advisable that sewage should be filtered and strained in the manner practised at several places. There is no reason to spread a layer of comparatively worthless and necessarily offensive filth over the surface of the soil. There is good reason to expect that the utilization of the sewage of towns on the land near them, while preventing the pollution of drinking-water, and the spread thereby of cholera and typhoid fever, will at the same time maintain the purity of the atmosphere around and about the towns, and that the result will be, especially when combined with that produced by the increased demand for labor and the more plentiful supply of food, a diminution of the general death-rate.

The late Dr. Cobbold had great fear that entozoic diseases would be spread by means of sewage irrigation. Although this possibility has been borne in mind ever since Dr. Cobbold drew attention to it in 1865, there are no facts reported which connect entozoic diseases with sewage irrigation. Dr. Corfield summarizes his views on the question by saying that it has not yet been shown that sewage irrigation has ever increased the amount of entozoic disease in men or cattle. Still less that it is likely to do so to a greater extent than any other method of utilizing human excrement; and were this shown to be the case, the danger would be to a great extent obviated by some preliminary treatment, with a view to the separation of the suspended matters.

The Treatment of Sewage. By Dr. C. M. TIDY. New York, Van Nostrand. 24°.

THIS little book, which is one of Van Nostrand's 'Science Series,' contains in a very concise form a great deal of valuable information on the subject of which it treats. It goes over necessarily much of the same ground as Corfield's 'Treatment and Utilization

of Sewage,' a review of which we have already given, but in a much more condensed form.

Dr. Tidy, in marked contrast with Dr. Corfield, thinks that there is danger that entozoic diseases may be communicated to both man and beast by means of the products of sewage farms. He says that the fact has always been recognized that entozoic diseases have an external origin; i.e., that the ova or parasites come from without, and are not generated within, the human body. Millions of ova are voided with every segment discharged by the person afflicted with tapeworm, each ovum being capable of producing a measles in the flesh of an animal, and each measles a tapeworm in the body of the man. He has seen watercresses and celery grown on sewage ground, having a quantity of dried sewage matter deposited on the stems, and he has, with more than a cook's patience, tried to wash this matter off, but the tenacity with which it sticks upon the surface of the vegetable when once dry is perfectly astounding. It should be remembered in this connection that these vegetables are eaten in an uncooked state. The grass covered with sewage, eaten as it is with rapacity by the cattle, infects their bodies with the larval parasite. Thus the meat is measly, and measly meat, except for efficient cooking, means tapeworm to the human subject. Perhaps a similar story might be told of trichina, with its ten times greater danger. The farm, therefore, that receives sewage must be more liable to produce measly meat than the farm that does not receive it.

In opposition to these views of Dr. Tidy we have the opinion of Dr. Corfield, already referred to, and also that of the British Association Committee. This committee made experiments to determine this very question of the distribution of entozoic disease by means of sewage irrigation. Dr. Cobbold, at the request of this committee, examined the carcass of an ox which had been fed for two years on sewage-grown grass, and reported the perfect freedom of that animal from internal parasites of any kind, but explained this freedom in a manner which to his mind did not affect the main question. The committee did not accept this explanation, but in their report say that it appears as far as this one case goes (and it is certainly as conclusive as a single case could possibly be), there is no evidence that entozoal forms of life are to be found upon the farm at all, in any stage of their existence, or in the flesh of an animal fed exclusively for twenty-two months on sewage produce grown on the farm. This report was made in 1871, but we have Dr. Corfield's statement that since the date of that report no facts have been recorded connecting entozoic disease with sewage irrigation.

It would be interesting to know whether Dr. Tidy or others have any evidence to the contrary. It would seem as though the system had certainly been in practical operation long enough to have settled this question.

It is a matter of regret that the publisher of Dr. Tidy's book has not given the reader a table of contents or an index. In order to ascertain what it contains it must be read through from title-page to colophon, and as a book of reference its value is greatly diminished from this omission.

NOTES AND NEWS.

A SANITARY Convention was held at Traverse City, Mich., Aug. 24 and 25, under the auspices of the State Board of Health. The objects of the convention were the presentation of facts, the comparison of views, and the discussion of methods relating to the prevention of sickness and deaths, and the improvement of the conditions of living. It was not a doctors' convention, but for the people generally. Among the many subjects which were presented and discussed were the following: disposal of waste in Traverse City by sewerage and otherwise, the present and future water-supply of Traverse City, the best methods of warming and ventilation, the work of the village health-officer, the money value of sanitary work, the prevention of contagious diseases, school hygiene, foods and their adulterations, the drink problem, and the prevention of insanity.

— In the letter on 'Chrome considered as a Poison,' by Charles Harrington, in last week's *Science*, centimetre (p. 105, col. 2, 4th line) and centigram (p. 106, col. 2, 21st line) should read 'gram.'