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Agriculture.

City and Town Sewage.

The value of city sewage for agricultural purposes can scarcely be overestimated, and yet it is only within a comparatively recent period that schemes for its effective utilization have been brought to anything like practical maturity. About twenty years ago, for the first time, a system of underdrainage was suggested in London, England, for the purpose of conveying all sewage to the ocean, and thereby preserving the Thames water pure and uncontaminated. For seventeen years the great work was continued, and, quite recently, we read of its completion at last, at a cost of about twenty-two million dollars. Almost immediately afterwards, a company was formed for utilizing this sewage, but, owing to a lack of public appreciation, the matter, for the time, fell through for want of capital. Again, however, the attempt was renewed, and the scheme is now being practically carried out under the direction of Mr. John Box, an eminent English engineer. The beneficial effects of such an undertaking, when completed, can best be judged from similar experience in other quarters. In a midland county in England, the local board of health in 1870 took on lease for seventeen years a plot of about thirty acres of ground, with the intention of experimenting with the sewage from their own district, which contained a population of about five thousand. At first the receipts fell far short of the expenditure, but then the plot was in a very low and barren condition. Every year since the first, however, the balance fell upon the proper side, and improvement followed improvement, until in 1875, the receipts for the year ending in March showed an income of \$6,000 against an outlay of \$2,995. A similar experiment, tried in Leamington, Warwickshire, on an estate owned by the Earl of Warwick has resulted, according to his own admission, in "very large profits." The Earl pays annually to the Town Council \$2,250 for the town sewage, and he has perfected arrangements for receiving and distributing it over the farm, which is four hundred acres in extent. It is applied to almost every description of crops, cereals, roots, beans, peas, celery, rhubarb and even strawberries. Last summer his rye was cut seven different times after irrigation with this manure, and his root crops are described as enormous. Mangolds have yielded as much as eighty-two tons per acre, and he is enabled to obtain turnips in perfection, continuously, all the year round. It is also worthy of remark that the water which flows from the farm is clear, sparkling, and quite free from fungoid growths. These experiments have been in operation four years.

Your Whiffle-Trees are too Long.

Most ploughmen have such long whiffletrees that it is often impracticable to make any plough work satisfactorily. Excellent ploughs are frequently denominated as worthless, and rejected simply because the double whiffletree or the ox yoke was too long. Yet, the ploughman never suspected wherein consisted the true cause of the difficulty. Our own practice, from boyhood, has been to make the double whiffletree for ploughing never more than two feet between the points of attachment of the singletrees, which were about twenty-three inches in length. When it was desirable to plough narrow furrow-slices, the singletrees were attached only twenty-two inches apart. Let a ploughman attempt to plough with a double-tree six feet in length and he will readily understand why a plough will not run correctly when the double-tree is too long. When the double tree is too long the plough will be drawn too far from the furrow to the unploughed ground, unless the ploughman makes a constant effort to prevent the im-

plement from cutting a furrow slice wider than can be properly turned over. The agricultural works at Ilion, N.Y., sent us one of their right-handed hardened steel Mohawk Valley Clipper ploughs for trial, which operated so beautifully that we persuaded a near neighbor to take it and give it a trial when he was ploughing his ground for corn. He could do nothing with it, as it would cut and cover in spite of all his efforts to make it run right. Of course the beautiful clipper was denounced and rejected before he had ploughed twice across the field. We saw at a glance the cause of the trouble. With his permission we bored holes in the doubletree, so as to bring the singletrees ten inches nearer each other, five inches inwards from the old holes. Then he tried the plough again; it ran beautifully. He smiled and laughed, and laughed and smiled. He could not say enough by way of commendation. The plough was the same implement during both trials; no part had been changed, but the doubletree was so long that the draught was thrown five inches too far toward the unploughed ground.—N. Y. Herald.

Management of Farm Privies.

The "modern improvements" attached to city residences have solved, as I suppose, the perplexing question of the management of privies in cities, at least in connection with private dwellings. As to hotels, the case is less satisfactory, as it is hard to find one where, in spite of running water, glass tubes, and various other contrivances, the odors are not well nigh unendurable. How they should be managed is an open question, at least without some system which does not comprehend frequent if not daily cleaning. But privies for the use of farmers' families are no more difficult to manage than farmers' kitchens, and if they are not kept as clean and inodorous, the owner is himself to blame, and his reputation for cleanliness should go just as low as if he maintained a filthy kitchen.

The vault system is an abomination, and should no longer be tolerated. The patent and costly earth closets are well enough for those who can afford to buy them, but the economical farmer can do much better. Instead of the vault under the privy, deeply dug and walled up, place a water-tight rectangular box, long enough to occupy the space under the seat, and small and shallow enough, so that when nearly full, one man can get it out, either by main strength or by the aid of a crowbar or lever. In the privy place a box, keg or half barrel tub filled with some dry substance—muck, sawdust, road dust, earth, coal ashes, plaster or even sand—and each time when the privy is used, throw a small shovelful of the absorbent into the box, and that will effectually put an end to the odors.

When the box, or movable vault, is full, have it shoveled out (which will not then be a very offensive work), and wheeled or carted off to the farm compost heap, or put directly upon the land. The man who objects to such an arrangement on the plea of "no time to attend to it," is not much of a man as regards cleanliness. He might as well object to cleaning his stables for the same reason. He obtains a valuable fertilizer by it, and in addition secures his family against the danger of fevers, which neglected vaults often breed on the premises. There is no sickening stench to pollute the air for many rods around, and for this reason the privy may be safely placed nearer the house than when a vault is used, though it should always be far enough away and so located that it is not a prominent object in the landscape. To accommodate sick or feeble members of the family, particularly at night or in stormy weather, a water closet conducted somewhat on this system, and cleaned daily, may be connected with the house, though except for such uses there can be no occasion for it on farmers' premises.

It might be supposed that a vault treated regularly with one of the deodorizers mentioned above might be kept from becoming offensive through a series of years, but this is hardly possible, especially in hot weather. There is always corruption in such a mass; flies are attracted, maggots bred, and odors can only be kept down by frequent cleaning out and starting anew. A box holding from one to two barrow loads necessitates frequent attention, and something which insures attention is what is wanted. And a man might as well complain because his clothes must be washed weekly, or of want of time to keep his face clean, as to complain that his privy must be cleaned out once in two or three weeks.—Cor. Country Gentleman.

Leaves from Farming Experience—No. 9.

Plant Food and Raising Cattle.

If we could get four bushels of ashes for each acre of straw crops, and 11 bushels for green crops, no other manure would be needed, as all the substances wanted for plant food are in the ashes, less ammonia. A fair supply of lime, potash, soda, phosphoric acid, sulphuric acid and magnesia, with alumina, must be in the soil to secure a crop, because the crop is made of these things, together with the gases, as carbonic acid, oxygen, a small portion of hydrogen and nitrogen. These form part of most animal and vegetable substances, and are abundant in the common air. If we supply the earthy substances, they will attract the atmospheric gases to supply the wants of the plant, but the plant may be much forwarded by a supply of carbon, or rotten vegetable matter and ammonia, either in the soil or sown with the seed.

In every fertile soil there is a quantity of the oxides of iron, from 2 to 5 per cent. The prudent farmer will find it to be his interest to supply all these things as the raw material to manufacture grain, roots and hay from. I salted all the hay and grain as it was put into the barns, about a quart of salt to a ton of hay, and when the hay was cut and steeped for feeding, 2 ounces of salt was mixed among the food per every beast. I do not allow any guesswork, everything is done by measure or weight. A cow may average 40 lbs. urine daily, not giving milk; when giving milk, 20 lb.; 7 lb. dry straw will absorb that, or 20 lbs. dry, black muck, or 30 lbs. good, dry, arable soil; any of these articles may be dried and used a number of times, and the floor of the cow house may be constructed so that the spare water will collect in one corner, and run through a hole in the wall into a small tank. It may be mixed with a third or fourth part of water. It will save ammonia as it is formed. I found it too expensive to collect dry earth and mix it with this urine, therefore I got a water cart made of 1½ inch pine, to hold in the water. It was 6x5 feet, 1 foot deep inside. A hole in the top received the water from a pump; an iron pipe 12 inches long, 2 inch bore, the pipe square half its length. A hole in one of the squares received the urine from a hole in the bottom of the water box; that pipe was firmly fastened with screw bolts to the back end of the water box below. The pipe projected 4 or 5 inches, on which a canvas or leather hose was fastened to the middle of the distributing pipe. It was about 6 feet long, the distributing holes made to suit what was wanted, something like a street watering-cart. There was a valve inside the box lifted by a small brass wire cord. The privy was on this water tank. A small quantity of plaster or dissolved copperas, or both, and a little pearl ash would do good; but I never tried the pearl ash. The tank should be emptied every two weeks. I found this the cheapest way of using the urine. It has a good effect on newly-cut grass land, or any other crop, as turnip-ground, before and after sowing. You will find plenty of use for it, and, with a water cart, it is easily done. In 100 lbs. of cows' urine there will be about 7 lbs. of solid matter, consisting of ammonia, potash, soda, chlorine, sulphuric acid and a little phosphoric acid, all ready to feed plants. The longer it is kept out of the ground the loss will be the greater. I believe the sooner manures are got into the ground there will be the less loss of plant food. As to raising young cattle, we raised about 9 yearly, all heifers, of our best milking stock. They were fed the first week with the mother's milk; then, 2 weeks, skimmed milk warm, 1 or 2 weeks, oatmeal gruel and skimmed milk warm, three times daily; 3 or 4 weeks, warm pea-meal brose made thus: Take the quantity of pea-meal required, pour boiling water on it, stir till all is wet, mix with warm milk or whey three times daily. The longer time you feed the calf will be the better. I housed them as soon as the cold set in, in a warm house, and fed twice daily with hay and a few cut turnips and salt.

JOHN ROBERTSON.

Bell's Corners.

(Continued next month.)