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The Field.

A Manure Receipt.

Mr. D. Messenger, Cooksville, sends us a receipt which he states was used by his father in the old country, and which he designates a receipt "to make four tons of superphosphate." The directions are in many respects very good, but the result would be a large amount of fertilizing material, besides superphosphate of lime, and would be more correctly described as a compost. The receipt is as follows:—

"Materials employed,—seven quarters of bones, forty gallons of liquid manure, thirty bushels of soot, half a ton of oil of vitriol, five hundred weight of salt, a cart load of dry ashes.

To prepare the manure, procure a cart load of clay, and work it up like mortar. With this clay enclose a sufficient space in which to mix the above ingredients, forming a tight wall about eighteen inches high, care being taken that no holes are left through which the fluids could escape. Having thus secured a suitable working space, then

1st. Spread the bones evenly within the enclosure.

2nd. Add the liquid manure, spreading it all over.

3rd. Pour on the oil of vitriol, beginning at one end so as to have dry bones to stand on. Let the bones, liquid manure, and vitriol be well mixed.

4th. Spread the soot evenly over the mixture, so as to keep down the steam, which will rise in great abundance.

5th. Put on the salt equally.

6th. Cover all over with a cart load of dry wood ashes.

Let it remain for twenty-four hours. On the following day remove the clay wall, and let the whole mass be well mixed, moving it backwards and forwards, as in mixing lime and earth. Dry ashes should occasionally be added, both to moderate the strength of the preparation, and to make it dry and fine, so that it will pass through the seed drill without choking. Put the whole snugly away in a compact heap in some convenient place, under cover, until it is required for use."

In reference to the above we would observe, that, though the materials brought together are all undoubtedly excellent fertilizers, and the directions respecting them in general good, yet, considerable loss of, perhaps, the most important compound, namely, the phosphoric acid, would result from the treatment recommended. By the addition of the wood ashes while the operation was going on, the *super*-phosphate of lime would be converted into a *neutral* phosphate—that is, a compound in which the phosphoric acid and the lime exactly neutralize each other—being the condition in which it exists in ordinary bone, an important fertilizer, indeed, but not equal to the super-phosphate, in which the phosphoric acid is in considerble excess. We would suggest, then, as an improvement on the method prescribed, that the sulphuric acid and bones alone be first mixed: this will convert the phosphate of lime of the bones into super-phosphate, part of the lime uniting with the sulphuric acid to form sulphate of lime. Let this process be complete, and the whole allowed to become thoroughly dry, before the remaining ingredients are added, which may afterwards be done, in the manner directed by our correspondent, with advantage, and without the drawback of decomposing the superphosphate. Mr. Messenger deserves commendation for his disinterestedness in giving his information to the public, and thus presenting to his brother farmers a good manure receipt.

Sugar from Beet Root.

To the Editor of The Canada Farmer:

Sir,—In the March number of your excellent paper, Mr. Carl Beecherer, of Montreal, kindly offers, in an answer to a letter of mine of a previous number, to give to parties desirous of such knowledge, "information concerning the manufacture of sugar from the beet root, and do all in his power to have at least one or two factories started in Upper Canada."

I at one time took a good deal of interest in the matter, and made many enquiries in Europe concerning it, intending to aid its introduction into my native county. I had my doubts, which, I hope, were groundless, since I find in a paper from Illinois, of the 27th June last, as follows:

"Recent Illinois papers speak with confidence of the results of the efforts making in that State to manufacture sugar from beets after the plan adopted in France a few years ago, and since prosecuted with much success. The subject is again brought up prominently, by the consignment of about thirty thousand pounds of sugar to Chicago from a manufacturing establishment at Chattsworth, Ill.

"This sugar is said to have been made in March, and is a part of the product of last season's business. the beets having been preserved in pits through the winter. Experience seems to be conclusive in regard to the good saccharine properties of beets grown in the United States as compared with those of France."

In addition to the above, Mr. Beecherer, whosays he is conversant with the manufacture of sugar from beets in Europe, feels quite sure that the business can be carried on in Canada profitably. Will he not let us hear from him again on this important subject?

I should like to know what the President of the Board of Trade in Toronto did about obtaining seed and information when he was in France this spring. I see by the papers that he returned some time ago, and addressed the merchants of Toronto on the subject of his travels, much of which address was very entertaining and useful; still I think he quite forgot his promise made about beet-root sugar before he left. If this letter should happen to fall under his eye, probably he would let the country know, through your Journal, what information he obtained on the subject.

DENIZEN.

July 1st, 1867.

☞ Gail Hamilton says, we do not know how to work until we know how to play.

Diseases of the Hop.

It is well known that the Hop in all countries wherever it has been cultivated is an uncertain crop, if not *the most* uncertain of all farm crops. This arises from various causes, the chief of which is insect depredation. The soil naturally and artificially may be of the most suitable description, the culture and management of the most approved kinds, early indications of a remunerative crop most promising, and yet a stealthy fungus may infest the luxuriant leaves, or a swarm of caterpillars and insects take possession of the same, so as partially or totally to dash to the ground the brightest hopes of the cultivator, involving him in a pecuniary loss, to which failures in other crops have no comparison. If hops did not yield in what are termed "fortunate years" much larger profits than ordinary farm crops, it is plain from these facts that they would eventually go out of cultivation, as proving in the long run unprofitable. In proportion as science and experience enable the hop grower to prevent or even mitigate the depradation of insects—the chief source of the evil—will his business, as we shall show, assume a more reliable and profitable character.

The most common and destructive enemy of the hop is the Aphis, particularly the species denominated, *Aphis humuli*, and generally better known by the name of plant-lice, or green-blight. This family of insects, including several species, is often very troublesome to the gardener as well as the farmer. Rose bushes, beans, peas, and many other plants, are more or less liable to their depredations. The hop aphis is popularly known in England as the "fly," a small winged insect, often appearing on the under surface of the younger or smaller leaves in May and June, at first only three or four in number, which is often rapidly increased. The little nits or lice, of a green colour, often literally cover the under surface of the leaf and the young shoots of the bine, which soon shows symptoms of a sickly and declining character. The manner of living and reproduction of this curious family of insects are exceedingly interesting, and we would strongly advise our readers to observe these things for themselves, with the valuable assistance to be derived from treatises on entomology, with a view of enlarging their knowledge of this department of nature, and of applying it to practical purposes. Aphides propagate themselves both by depositing eggs and bringing forth their young alive; a property not belonging to any of the four-winged insects. Their power of multiplication is truly marvellous; a single plant louse will often produce a hundred young ones, from which countless numbers will rapidly succeed. The head of the aphis under the microscope is an interesting study; the eye is beautiful and bright, and the proboscis, for so small a creature, is a wonderful instrument, by which it extracts from the growing plant its life-giving juices.