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Agriculture.

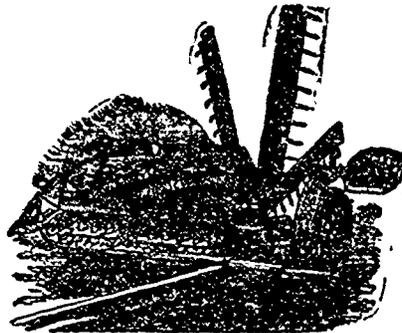
Prepared Fertilizers.

A ton of ordinary barnyard manure, roughly analysed, contains but comparatively little plant food. Its constituents are about 1,460 lbs. of water, 420 lbs. or thereabouts of other organic matter, 75 lbs. of useless ash, and the balance, 45 lbs., of the essential element, plant food. Even this average is perhaps too favorable, 30 to 35 lbs. per ton of the last mentioned coming nearer to the rule. To this consideration another must be added; even the small quantity stated proves of but little, if any, benefit to vegetation until it has become thoroughly rotten and mingled with the soil. Yet how eagerly is barnyard manure sought after, and even purchased at fair prices by farmers living in proximity to towns and cities. Now, it is not our intention to disparage the use of this article,—very far from it. Wherever it can be had, by all means let it be utilized in abundance. The increased returns in every department of agriculture will more than justify the outlay. Our object is rather to direct more attention to the use of prepared fertilizers which are now manufactured in great variety, and may be had in any quantity at a comparatively small cost. We say a comparatively small cost, because, though they are of course much more expensive, ton for ton, than ordinary manure, yet, when prepared under the direction of a good analytical chemist,—and their quality every farmer can test for himself before purchasing extensively,—these compounds can be made almost free from water, and their ingredients so adjusted that 100 or 150 lbs. of the marketable article will contain all the fertilizing elements of a ton of common manure. A correspondent to the *Rural New Yorker*, writing recently upon this subject, gives Prof. Liebig's analysis of 100 lbs. of ammoniated bone superphosphate as follows: good, available plant food, 15 lbs.; water, less than 13 lbs. Referring also to his method of testing these fertilizers, and it is certainly a very simple one, the same writer goes on: Several weeks before planting time I procured a small quantity of superphosphate. I filled two 8-inch pots (boxes would answer) with soil from a field which I intended for oats. With the soil in one pot I mixed an ounce of the fertilizer. I planted eight plump oat kernels in each pot, and then set them in a warm window and kept the earth moist. When the plants were about three inches high I pulled up the smallest, leaving the best four plants in each. Before the time for sowing my oats I measured the plants accurately, and found those in the fertilized soil to average 15 inches in height, the others 10 inches, each dimension of the former being fully 1½ times that of the latter, making the bulk or weight 3½ times as great. From this experiment I inferred that it would be a good investment to use the fertilizer, and the result justified the inference. For every dollar's worth of fertilizer used I got, in increased yield, \$3 worth of oats at 40 cents a bushel, and a corresponding increase in straw.

A Light and Cheap Reaper.

An important desideratum in the construction of all classes of implements now-a-days is to have them made just as light, consistent with durability, as they were formerly made heavy. The days of cumbersome, unwieldy machinery are about over, in this country at least. For many years back our manufacturers, from the lightest scuffler to the heaviest thrasher, showed in this respect a marked contrast to those of Great Britain, and of late they might be similarly contrasted with their former selves, that is, the implements of to-day are, generally speaking, much lighter, yet equally if not more serviceable, than the same class fifteen and twenty years ago. The ordinary garden hoe of that latter period weighed from 5 to 8 lbs. Those now in use will not average 2 pounds, yet they are equally serviceable and much more easily handled. Similar remarks

are applicable to nearly all farming utensils now in use. The selection of better material for manufacture permits of a much lighter construction, ensures equal durability, and affords a striking comparative degree of facility in working. For some years the cutting and other qualities of our Canadian reapers have been brought to such perfection that competition among makers turned largely on the draught. Dynamometers were in vogue at every successive trial and in most cases they settled questions that could not be settled in any other way. Ordinary machines weighed from 1,200 to 1,500 lbs., and their draught was considered commendable if it fell considerably below a fourth part of their weight. People, however, were not satisfied with that draught—at least their horses were not—and consequently the great inventive struggle of the day was to produce something new with a decisive decline in its drawing qualities. The Boyce reaper, which is here illustrated, seems to have met this condition. It is certainly a marvel of lightness, considering the work it has to perform, weighing only 450 pounds, and with a draught of little over 100 pounds. It has been pretty thoroughly tested too, and found to work quite successfully even in heavily ridged clay lands with lodged grain, and heavy grass bottoms. Its main points of excellence, those upon which its claims to durability rest, are the first quality of materials, wood, iron and steel, from which it is made. The frame is cast in one piece, the drive-wheel axle only passing through a journal in the iron frame. To prevent



obstruction to the gearing, a shield extends from the lower side of the frame to the wheel, and everything is protected from dust.

The journal is fast to the wheel, and passes through its bearing far enough to receive into the end of it, the rod which carries the motion to the rake, and which is attached to the rake-gearing by a universal joint, these connections being all in a direct line with the journal. The shipper lever to throw the machine in or out of gear, is close to the driver's feet upon the foot-rest and easy to control. The telling lever which performs the double part of elevating or depressing the points of the fingers, and of binding the rods which unite the two parts of the simple hinge joint, is at the right of and in easy reach of the driver.

The tongue or pole constitutes, in fact, all the wood in the frame-work of the machine, except the driver's seat, this being fastened to that part of the tongue which extends back to the journal bearing. With the weight of the driver and seat upon one side the bearing, which acts as a fulcrum, the neck-yoke and whistle-trees upon the other, the tongue is evenly balanced, and no weight rests upon the necks of the horses. The guards are 3-inch malleable, with cast steel ledger plate. The knives are a 3-inch section, riveted to a steel back forming a very light and strong knife. The whole cutting apparatus making the best known form at present in use for either mowing or reaping.

Leaves from Farming Experience—No. 7.

Farmers appear to believe that if lime is given, or any other article, such as plaster, or salt, no more is required. This is a mistake. Seven different substances are wanted, and four more in smaller quantities, to make up a fertile soil. Soil well supplied with all the inorganic substances necessary, will absorb nitric acid and carbon from the atmosphere, in large quantities; but decayed vegetable substances and ammonia are of great service to start a

plant with a strong broad leaf; after that it will be supplied from the air. A fair topdressing for grass is 50 lbs. superphosphate of lime, ammoniated; 100 lbs. plaster; 100 lbs. salt; 30 lbs. Pearl ash. For turnip, 200 lbs. salt; mangolds, 600 lbs. salt. I used 33 pounds sal-ammoniac mixed with bone dust, ashes and plaster, per acre, with profit. There was no ammoniated phosphate of lime at that time. These dressings were sowed after the crop was harrowed. If the ground was dry it got one stroke of the harrow lightly, if it got none wet.

The value of manure depends on the food of the animal. Many farmers purchase linseed cake, as much for the manure as for the food. I did not summer-fallow unless when draining the field. Corn, potatoes, or turnips will pay rent and work, also a part of the manure, and the field may be made clean. It may be less trouble to clean land by fallowing, but it is also less profitable. I had two cowhouses: Having tried many ways of feeding and preparing their food, the following method was supposed best: A box was made of 1½ inch grooved and tongued boards, large enough to contain a day's food for all the cows in one house. The hay was cut fine; 30 lbs. of cut hay, 6 lbs. oats or barley ground, 2 lbs. peameal, 25 lbs. turnips cut very thin, 2 oz salt, all mixed and saturated with water, as much as it would absorb, were put in the box for each cow. There are three such boxes for each house. The hay is pressed slightly, and in about forty hours it will heat a little. Then begin to feed it to the cattle. It should be all used in one day, and the box swept or rubbed out to prevent moulding. I use also bran in place of oats or peas, to regulate the cattle's bowels. The cost is about \$68 for each cow. That cow should give at least 7,775 pounds of milk in the year; 777 lbs. cheese at 11½c..... \$87 36
A calf, \$1.50; whey, \$2.50; butter, \$5..... 9 00

	\$96 36
Produce of 64 cows at \$96.36 each.....	\$6,167 04
Seven fat cows at \$75 each.....	525 00
	\$6,692 04
Cost of food for 64 cows at \$68 each.....	\$4,352
Attendance and cheese making.....	940
Seven heifers or young cows at \$34.....	238
	5,530 00

Leaving a balance in favor of cheese . \$1,162 04
Value of farm produce after feeding 64 cows.... 2,453 00
Balance of profit on farming 2,467 00

Gross yearly profits.....\$6,082 04

There will be about 800 loads manure at \$1.50. The charge for manure is 60 tons straw used for bedding to absorb the urine.

Bell's Corners, Ont. J. ROBERTSON.

(Continued next month).

Grain-Bins—Waggon Wheels—Parsnips—Farmers' Wives.

EDITOR CANADA FARMER.—The FARMER for February has just reached me and, as usual, is filled with interesting and valuable matter. On some of the articles I must beg leave to make a few remarks. As for the "Grain house" described on the 21st page, I may remark that it is by no means rat-proof, as these vermin will work their way up through the floor. I consider that it might be improved by having the grain bins supported on strong legs about 18 inches high, so that either a cat or a small dog could get under them. The bottom of the bins should be made of planed boards, placed lengthwise from the back to the front, and about six inches higher in the back, with an opening in the front of each bin, closed by a shutter made to slide up and down; so that the grain might run out into a half bushel measure, placed under-