

of the Journal, that I considered carrots as being the best roots for milch-cows. In opposition to my views I cite the following from the Report of the Massachusetts Experiment Station :

QUARTS OF MILK REQUIRED TO MAKE ONE SPACE OF CREAM.

(Average of six cows fed as given below.)

Corn-stover period.....	1.59
Fodder-corn period.....	1.68
Sugar-beet period.....	1.88
Corn-ensilage period.....	1.92
Hay period.....	1.98
Carrot period.....	2.16

This is a very remarkable test, and one that I should like to see repeated. That carrots should give a milk poorer than that produced by sugar-beets upsets some of my previously conceived ideas.

Waste of manure.—Immense is the waste of farmyard manure throughout the province. What does Mr. J. C. Chapais say he observed on his journey from Kamouraska to Montreal last November? Let him speak for himself: At the end of the fall, we saw all along the railroad, on both sides of the river, little heaps of dung, which had been left there by farmers utterly careless of what became of the fertilising elements contained in this precious product of their farms. And this abuse is unfortunately, very general. What will this manure be worth in the spring, after having been dried and pulverised by sun and frost, and then washed by the rain and melted snow? Absolutely nothing. Its wealth of fertilising materials will have been dispersed, partly into the atmosphere, partly into the ditches. Was it desired to preserve it till the spring afforded a fit opportunity of carting it on to the land, why was it not thrown up into large, well-squared up heaps?

Not only is the farmyard dung wasted, but how about the HARDWOOD ASHES? Again, I see, in the Country Gentleman, four full advertisements of "Canada Unleached Hardwood Ashes—Nature's greatest fertiliser; ready for direct shipment, in carload-lots of from 12 to 20 tons; strength and purity guaranteed; price, sample, and pamphlet, sent on application."

Now, putting the potash aside, which as I have said before, is not absolutely needed on most of our soils, hardwood ashes contain, on an average, say, 3.8 per cent. of phosphoric acid. So a carload of 20 tons contains at least 1,500 lbs. of that invaluable manure, equal to the manuring, as far as the acid goes, of, at least, 40 acres of land. Half a ton of ashes, with 150 lbs. of sulphate of ammonia, sown separately, ought to make the biggest of grass- or hay-crops: a little plaster with it would do no harm: the plaster, phosphoric acid, and potash, for the clovers, and the sulphate of ammonia for the grasses proper.

Two clippings in this number are worth reading: Mr. Ellis, on "Downs vs. Cotswolds"; and Mr. Cooke, on the "Value of the oil in linseed cake." *Crowded out.* As to the latter, the experiments carried out by the Norfolk Chamber of Agriculture under Mr. COOKE'S direction were very sensibly made

with a considerable number of lambs, and this gives much greater weight to the conclusions derived from them than could have been claimed if only a few animals had been fed. Two lots of thirty lambs, the aggregate weights of which differed only 2 lb when the experiment was started, were fed for about four months on precisely the same weight of food, the only difference being that the linseed cake given to one lot contained 15.36 to 16.21 per cent. of oil, while that given to the other lot contained only 6 to 7 per cent. At the end of the experiment it was found that the lot fed on the cake rich in oil had increased by 1,148 lb. in live weight, while the other lot had increased by only 1,002 lb. Thus, there was a difference of 4½ lb. a head in favour of the former lot. The difference in values is put at 2s. 5d. a head, and this extra return was obtained at a cost of 8d. to 1s., though the rich cake cost 20s. to 30s. a ton more than the poor cake. Unfortunately, it is extremely difficult to get linseed cake containing 15 per cent. of oil, and, therefore, to use that which will pay best; but if a demand arises for it, the supply assuredly will not long be lacking.

As I remember well Mr. Chcesman, the Agricultural Chemist, laughing at me, some seven years ago, for believing in the value of linseed oil as a fattener, I was rather pleased at the success of the richer cake. Here is another proof of the value of practice over theory.

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OUR ENGRAVINGS.

Sainfoin.—I see some of the seedsmen in the United-States have been led into the same error as myself in supposing that this plant was *Holy-hay* instead of wholesome—hay—*sainfoin* instead of *sainfoin*. In Germany it is called *Esparsette*. It has been grown in England for more than two hundred years, and flockmasters on the chalk-hills, where red-clover will hardly grow, would be put to it without it. There are two kinds, the ordinary sort, that rarely exceeds 2 feet in height, and the Giant-sainfoin, which, as its name indicates, is much larger. The latter is not so particular as to the land it grows on as the small kind, it having been proved to answer on clays where the ordinary sort refuses to grow.

The sainfoin I sowed last spring, on Messrs. Dawes' Cross-farm, looked very well before winter set in; and as it, by the kind aid of Mr. Tuck, received a good top-dressing of rotten dung in October, I hope to see it flourishing when the snow goes, though the frequent alternations of snow, frost, thaw and rain have been hard upon it. However, of its ultimate usefulness in this country nothing can be predicated till the summer of '91, sainfoin never gathering together till the second year after sowing.

Pacey's perennial rye grass.—I am not quite certain whether the engraving is taken from Pacey's grass or from the Italian variety. The heading, in the N. Y. Station reports is given, "*Lolium perenne*." ("Italian Rye grass.") Now the "*Italicum*" variety is by no means a perennial, under ordinary cultivation, though in the irrigated meadows of Lombardy it may be. It is much higher at maturity than the Pacey's grass, which is in full bloom when red-clover arrives at that stage of growth, and is therefore always sown with it on our Kent farms. The rye grass alongside of the sainfoin—on the Cross-farm—was looking very well indeed the last time I saw it.

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