

where the crops are certainly prodigious. I wish the new importation, heartily, success. The beet-crop should benefit by the potash, azote, and phosphoric acid.

A. R. J. F.

Goëmon-Biphosphaté.

The Government has received the manure from France. The analysis is as follows:

Analysis (dry) of the Goëmon-Biphosphaté:

Organic matters	36.00
Nitrogen	1.93
Soluble phosphoric acid.....	5.60
Insoluble " "	2.50
Alkaline salts.....	1.90
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	47.93

Any one can obtain the manure, at \$26 a ton, on application to the Secretary of the Council of Agriculture.

GRASSES.

I do not suppose that the better class of farmers in this province are likely to alter their plan of cultivating grasses. So many fine crops of hay are cut every year composed principally of timothy, and the custom of the country of trusting to that plant has obtained for such a length of time, that the prejudice in favor of it is probably ineradicable. But in spite of the practice being almost universal, I must be allowed to say that there are many other grasses which are just as valuable for hay; and, inasmuch as they produce a far greater amount of aftermath, are much more profitable to the farmer; it being notorious that timothy should never be grazed, if its retention as a hay-bearing crop be desired for a succession of years.

I have already explained, in this journal, that certain grasses find themselves more at home on certain soils than do others; and that, in consequence, if a grass finds itself in a situation where food and exposure suitable to its tastes are provided, it will set all its wits to work to drive out its less happily situated neighbours, and in the end, will reign in its little kingdom without a rival.

Now, among the first requisites for a comfortable home demanded by gramineous plants is, that the geological formation shall be congenial to their habits. In this part of the world, the underlying rocks have been, almost invariably, covered up by accumulations resulting from the operations of rivers; these are called *alluvial deposits*. We see how streams and rivers cut out for themselves, channels, glens, and valleys, and transport the eroded materials in the state of mud, sand, and gravel, to some lower level: the sand and gravel, being the heaviest, is deposited first, the clay remaining longer in suspension only leaves its bearer when the water becomes tranquil; and this may be seen all along the valley of our rivers by any one who chooses to look. These operations have been going on ever since the land received its present configuration; and thus we have accumulations, often of considerable thickness, which consist of alluvial silt, masses of gravel and shingle, with occasional beds of fine blue unctuous clay, and layers of peat moss. (1)

Our farms lie principally on these alluvial deposits. The subjacent rock affects them but little, except where the two, on the slope of the hills, meet and modify each other, as at

(1) Chambly will afford a good instance of this to an observer. Above the *Canton*, sand and gravel; at the *Bassin*, dark blue unctuous clay, and in the *Savanne*, a thick bed of peat.

St. Hilaire, Rougemont, Abbotsford, &c. I take it, our best plan would be to consider what grasses are best suited to these accumulations, without troubling ourselves with the rarer cases in which the Silurian, or the primitive rocks, may come to the surface. And for convenience these beds may be divided into the four following classes: rich loams; poor stiff clays on a clay subsoil; light soils on sand; together with a not uncommon case, light sandy loam on clay. We propose to lay down a field in grass on each of these divisions, to lie out four of five years, or permanently.

1. Rich loams.

	lb oz.		lb oz.
Perennial rye grass.....	10 0	Timothy	3 0
Smooth meadow grass....	2 0	Red clover.....	4 0
Cocksfoot(Orchard) " ...	5 0	White clover	3 0
Meadow fescue	3 0	Cow grass(Perennial red	
Hard " "	3 0	clover)	4 0
Meadow foxtail	2 0		

2. Stiffs soil on clay.

	lb oz.		lb oz.
Perennial rye grass.....	12 0	Timothy	2 0
Smooth meadow grass....	3 0	Cocksfoot(Orchard grass)	6 0
Rough meadow grass....	2 0	Red clover	4 0
Lolium fescue	2 0	White clover.....	3 0
Hard fescue.....	2 0	Cow grass.....	5 0

3. Light soils on sand.

	lb oz.		lb oz.
Perennial rye grass.....	14 0	White clover.....	5 0
Smooth meadow grass....	3 0	Birdsfoot clover (Lotus	
Hard fescue	3 0	corniculatus)....	0 8
Soft oat grass	1 0	Yarrow	0 8
Sweet vernal	0 8	Sheep's parsley (Petrose-	
Cow grass (Perennial red		linum Sativum)	1 0
c. Trifolium pratense)	6 0		

In number 4, light loam on clay, I should be inclined to sow nearly the same seeds as in number 3, timothy never holding out on such soils, and very often not taking at all; I should take off two pounds of the rye grass and substitute the same weight of Alsike clover, and wherever the land in any of the classes had borne red clover lately, I should sow Alsike in its place. I believe all these grasses will last as long as they are fairly treated, that is to say, as long as they are not allowed to seed down, and as long as the land is kept in fair heart. They are called, most of them, *perennial*, i. e. everlasting; but if they seed they will probably die off.

Meadow foxtail (fig. 1)—This is one of the earliest and best; Cocksfoot (fig. 2); Rough stalked meadow grass (fig. 3); Meadow fescue (fig. 4); Sainfoin (fig. 5); Cow grass (fig. 6).

The meadow foxtail does not come to its best for the first three years, so where the land is to be broken up soon it may be omitted and a little more cow-grass or orchard-grass sown in its place.

I hope it will be well understood that if the rye grass is allowed to ripen, or even form, its seed before being cut, the land will be as much exhausted as by growing half a crop of grain. If cut in blossom, no injury will be done to the productive power of the soil. The cow-grass, a most valuable plant, was for a long time held in utter contempt, being mistaken for the meadow trefoil, which is an utter abomination, and never fails, by its obtrusive character, to destroy the more valuable pasture plants round it.

Most of the descriptions of the different grasses in this article are taken from "The Illustrated Book of Grasses," a most excellent work on the subject, by Mr. Wheeler, Gloucester, England.