

Phosphoric acid. So an excellent dress for Sweden only costs in England 55c lbs of superphosphate..... \$1.30 100 lbs sulphate of ammonia.. 1.75

\$3.05

What would the same fertilizer cost here?

LUCERNE.—As we mentioned in our last, the Lucerne on the strip of stony land by the side of Mark street, Montreal, had made a growth of 29 inches by the 15th of May, and was quite fit to cut for green-meal. It had "gathered" together wonderfully, considering its position, and there were quite 8 tons to the acre. What other plant is there in the country that will give such an early, copious yield as that?

LUCERNE IN GRASS-MIXTURES.—Many of our readers will remember the well managed farm of the late Monsieur Casavant, at St. Hyacinthe. When we were inspecting the farms of that district, in 1887, Monsieur Taché was good enough to drive us over to the place in question, and then we saw, for the first time, lucerne growing among other grasses, though its chief companion was red-clover. We made the following remarks upon the plant, in the No. of the Journal for April, 1887, p. 54:

A patch of lucerne looked as if it had done its work, and will, I suppose, be broken up for oats shortly. It will not stand out long in this country, that is evident, but, with proper precaution, should be tried on all sound, dry, deep soils. My curiosity was gratified in one respect; there was a piece of lucerne and red-clover, sown together, and a good lesson it taught to all who would take it in. The crop had been cut once, and now the clover was just starting to grow, while the lucerne was 9 inches high, and just coming into bloom. By the time the clover was fit to cut the second time, the lucerne would have formed its seed, and be of no more value than so much wheat-straw. If we are to mix our crops, we must select such plants as grow equally and mature at the same time.

LAWES ON LUCERNE.—Sir John Lawes, in the same year 1887, was good enough to give us his opinion on the subject of mixing lucerne seed with other plant-seeds for permanent pasture:

DEAR SIR,—I consider that in laying down land to permanent pasture it is advisable to sow, with the perennial seeds, a certain quantity of annual and biennial grasses. It is quite true that, if the soil is in very high condition, at the time of sowing and an abundance of manure is used during the first year or two, perennial plants may give at once a fairly good pasture, but such is not the ordinary state of land when laid down. Lucerne should always form a portion of the seed sown. Of all the plants known to me, lucerne is the one that yields the largest amount of nitrogen where none has been applied in manure; it also sends its roots deeper into the subsoil than any other plant. (1) There is a field in my neighbourhood that was sown with lucerne 20 years ago; not being clean, it almost at once became covered with couch-grass and other weeds. These, however, have not been able to drive out the lucerne of which there is still a considerable quantity on the land.

(1) Of course Sir John Lawes means grass-plants. Hops go down 20 and 24 feet.—Ed.

It will be observed that, in the above two opinions, Sir John Lawes is speaking of permanent pasture, which is of course to be kept grazed at, probably, intervals of a fortnight, while we ourselves were speaking of clover and lucerne for hay not meant to stand more than a couple of years or so, which makes all the difference.

HORSE-BEANS. The English bean "*Vicia vulgaris equina*"—seems to be unknown in the United States; at least, "Hoar's Dairyman" says that it was first brought to notice on this side of the water by Prof. Roe t-o-n, in his effort to make a balanced ration from silage, composed of maize, English horse-beans, and sunflower heads. Now, we ourselves grew horse-beans in the Townships at least 13 years ago, and we believe they had been grown on the Island of Montreal many years before that. As for their being "about three feet high," as "Hoar" says, we have seen them, on our low lying alluvial soils in Gloucestershire, quite seven feet in height, and have known them yield as much as 80 bushels, of 68 lbs. each, to the acre. As a rule, unless they can be got into the ground by the end of April, they will rarely do much good, as the "black-fly" plays the mischief with late sown beans. They take a long time to ripen thoroughly, and unless the autumn is dead ripe and black, they are very apt to mould in the stack or barn-bay.

Three kinds of these beans are commonly sown in England: the tick, the harrow, and the pigeon-bean; of which the last is the smallest in yield, though the best in quality. As, in England the bean is usually sown in February, and harvested in September; frequently not till October,—it will be easily determined by any one desirous of trying this most valuable crop, whether there is a probability of its arriving at maturity in his climate or not. Beans should be sown in rows about 24 to 30 inches apart, depending upon the habit of the sort chosen, and 2½ to 3 bushels an acre will not be too much seed. (1)

BUTTER vs COD-LIVER OIL.—Of all the horrid flavours extant, commend us to the flavour of cod-liver oil! Now, it seems, according to the "Nor-West Farmer," butter is prescribed by medical men as a means of "lubricating" the human machine in the case of young people, growing quickly, of nervous invalids, and of all who suffer from wasting diseases such as influenza. A quarter of a pound of good butter (we wish we could get some), spread upon very thin slices of bread, can be taken with ease in the day by a patient who cannot digest cod-liver oil, and is now ordered with the best results.

LUCERNE.—Mr. W. W. Everett, in the "Farmer's Advocate," recommends lucerne as being "green when all other pasture was dried up. Excellent as a soiling crop, furnishing an abundance of very nutritious food. It makes the finest hay I ever fed to stock, there being no waste whatever if properly cured. Cut when about half the bloom is out; do not let it get too dry before raking; put it into small cocks, and let it stand as long as the weather will permit." We never made lucerne into hay, as it always was needed for green meat, but Mr. Everett's advice is quite

(1) Stephens recommends 4 bushels to the imperial acre.

right as to cutting it early, even before the bloom is expanded.

RED-CLOVER.—People in the States are still recommended to sow clover every three years; they will be truly sorry before long if they follow this advice. The year 1895 was very unfavourable for getting what is called a "catch" of clover, and every reason is now assigned for its failure except the true one:—The plant too frequently repeated on the same land.

RAPE.—This plant is said by some to be an exhaustive one; but we quite agree with the editor of the "Farmer's Advocate," that a plant "that will readily appropriate what we give it in the form of manure affords us an opportunity of making the best use of the soil." Now, think a little; and you who read this will see that if rape is fed off on the land by sheep, each sheep daily receiving, say, a few pease, and oats, or a half-pound of cake, with a trifle of clover-hay and pease-straw when the cold nights begin—i. e. from Michaelmas to the end of the season—the exhaustion of the soil by rape-growing cannot be a very rapid process. And this system, that of feeding sheep on the land to consume the crop, is the real and genuinely remunerative means of utilising this plant.

But why does our contemporary advise the sowing of 2½ lbs. of seed to the acre in drills 26 inches apart? One pound, or a trifle more, is quite enough for drills at that distance, as no one wants to have the trouble of singling rape; but, depend upon it, if the land is in good heart, and not foul with couch-grass, a broadcast sowing of 6 lbs. to the acre will prevent any other weeds from showing their heads. If a heavy rain-storm occurs when the rape is up, a couple of strokes of the harrows, along and across, after the land is quite dry, will prevent caking and send the plant along wonderfully fast.

A correspondent of "The Advocate" wishes to know if "lucerne will flavour the milk". As we passed some six months with a farmer who kept 20 cows for the milk-supply of Brighton, England, and who never had less than 20 acres of lucerne; cut green for his cows; we can answer the question pretty positively: there is not the least danger of the flavour of the milk being affected by lucerne any more than by clover. Why should there be? If Mr. Ault, the enquirer, found the milk of his cows tainted, he may depend upon it there was some deleterious weed growing in the same field as his lucerne.

BAD ADVICE.—Mr. F. D. Burtch, in "The Farmers' Review," in an article entitled "The way to grow all kinds of roots," says: "Plough under all the manure in the fall you can. Then plough deep in the spring." A most erroneous idea. All deep ploughing should be done before winter, particularly on clay soils, that the frosts and thaws may have a fair chance to pulverise the land thoroughly. And what an earth is the English of the following language? "As soon as the land is in good condition in the spring plough and drag. Then back farrow into a dead furrow. Catching your eyes in a spot on the corner, and holding it over the furrows, the horse walks in them back on the other side. Let the driver walk

in the furrow" while harrowing. "Go over it three or four times, and all the lumps are in the ditch, the ridges will be a nice oval, and the fine soil on top will be firm. What does it all mean?"

THE TRUE DOCTRINE.—But some one may remark that if the Canadians make a better and more honest cheese they deserve the trade. So they do; but let no one make the mistake of assuming that this Canadian honesty is of a perfectly spontaneous character, and that it exists in defiance of the tendencies of unrestricted competition, for such is not the case. Canadian cheese remains good and pure because, in defiance of the tenets of laissez faire, the use of adulterants has been absolutely prohibited. If a cheese maker in Canada attempts to get the better of his competitor by doctoring his product with lard or cotton seed oil his whole stock is at once seized and he is heavily fined. Under such circumstances Canadian cheese remains pure.

If we wish to regain our lost trade and provide domestic consumers with decent cheese we must eschew the English free-trade example and imitate that of Canada. It has been conclusively demonstrated that competition cannot satisfactorily regulate trade; on the contrary, it promotes the class of evils complained of. The only efficient regulator of trade in the interest of both producer and consumer is the rigid enforcement of a system which will not permit adulteration for the sake of reducing prices.—"San Francisco Chronicle."

SPONTANEOUS COMBUSTION OF CLOVER-HAY.—A novelty in the States, it seems, is the spontaneous firing of hay carried too green! Why, in England, we farmers had a common saying that if a man did not burn a stack down once in four or five seasons, it was a certain sign that he always over-made his hay.

This was, of course, an exaggeration; but we have seen dozens of stacks—hay is never put into barns there—overheated, and that on the land of some of the best hay-makers in the neighbourhood of London. To speak frankly, all the clover-hay we see here has been allowed to stand too long before cutting and has been made too much. How often do we see, in the agricultural papers from the States, statements about mowing clover in the morning and putting it into big cocks in the evening to be carried the next day! Even with our hot sun, no clover cut in the flush of its vigour, as it should be, can be fit to carry till the afternoon of the fourth day: cut Monday after dinner, carry, from the cock, without shaking the leaf off by turning, on Thursday afternoon.

They had not long ago, at the Pennsylvania Experiment Station, an experiment with the fact that a fire may be started spontaneously in a mow of clover hay. The details, as given to the press, by Prof. Armsby, have been summarized as follows:

The spontaneous combustion occurred in the bay over the college barn. The bay was 18x23 feet and 23 feet high. The floor was of two thicknesses of wide inch boards, so placed as to break joints perfectly. The sides were of matched lumber. The fire was first observed falling through into the cow barn below. The bottom of the bay had about a foot of corn fodder. On this was placed second crop clover and