An Aid in Unloading Hay with the Hayfork.

A correspondent of the *Wisconsin Farmer* mentions a good device for returning the hay fork into position when unloading in the barn. It is the invention of his fourteen-year-old boy, and is not patented. The opening for the hay in the correspondent's barn is in the eastern gable. The end of the track, within six feet of the other end of the barn, runs the rope through a pulley near a side door in the mow, sometimes used for putting in bedding by hand, and thence running east on the north side of the barn through a pulley fastened to a post set in the ground. The horse works on the north side of the barn, going east when the fork is loaded. Due east of the north side is set a stake with another pulley attached, and it is about fifteen feet farther east than the horse goes to carry the carrier to the rear end of the track. A half-inch rope in addition to the trip rope is attached to the hay carrier, and runs through the pulley at the stake, and is hitched to the singletree. When the horse returns to the place of beginning for another load, he pulls the carrier back by means of the light rope running through the pulley at the stake. This device has been in operation on the farm for some years, and it saves much vexation of spirit and blistering of hands. In barns where the horse goes away from the barn it will require another pulley or two, as the case may be.

For The Canadian Live Stock and Farm Journal.

To the Young Men of the Farm.

Young men, I have not forgotten the land which gave me birth, nor the magnificent material which it produces in the form of sterling men and women. Canadians are frequently met with in this state, and I can assure you that, generally speaking, they are giving an account of themselves such as to make one feel proud of the relations of former time. Now, the success which follows the Canadian in this country is not accidental. It arises from a number of causes, among which are the following: He is usually a diligent worker from day to day, and during all the working days of the year. This trait alone, in this land of magnificent opportunities, would go a long way toward bringing a young man to the front. He is usually intelligent, hence, in the race struggle for supremacy, he has all the Anglo-Saxon endurance, with more than the average Anglo-Saxon sagacity; and, in the third place, to the diligence in business, already referred to, he adds the American sagacity, which is so quick to take an advantage of opportunity; in other words, he is more ready than the Anglo-Saxon, who comes directly from Great Britain, to adapt himself to the quick march of American progress. Wherever I have met with Canadians in this western world, I assure you that I have had reason to feel proud of my former countrymen.

The farmers of Ontario are a splendid class of men, and farming in Ontario compares well with the same in any part of the world. But remember, young men, it is the intelligence of the Canadian farmer which has placed him where he is, and, if he is to retain the vantage ground on which he now stands, he must do it through the practice of intelligent methods of agriculture. It is incumbent, therefore, on the young men of our Canadian farms to keep well abreast of the knowledge of the age with reference to agriculture.

Where shall such knowledge be gleaned? The channels are various. Some of it from agricultural books, some from the agricultural press, some from the great agricultural conventions of the day, some from the farmers' institutes, and much, very much, from the Agricultural College at Guelph. Horace Greeley was wont to say to the young men who were ambitious to rise, "Go west." This is not the suggestion that I would now make to the young men of the farm, but instead, before going west, take a regular course at the Ontario Agricultural College. It has turned out many good men, and what it has done it can do again.

But here I would drop a word of caution. The day was, and not long since, when young men who graduated in the third year course quite readily got situations in agricultural colleges on this side of the line. Without any doubt this result had its influence in drawing students. Now, young men, the day for this, I am convinced, has forever gone. I get letters frequently from young men in Ontario, who have graduated in the third year, asking if I will lend a helping hand in enabling them to get a situation in some American agricultural college, or at some experimental station on this side. Most assuredly I will, but it will not avail. The day for this has gone by. There is only one way now in which a Canadian can ordinarily get such a situation, and that is by taking his college course on this side of the line.

A few years since such situations could be obtained, as witnessed in the success of Creelman, Craig, Morgan, Linfield, Hutton, Hart, and others. The American colleges wanted men, and these had not been educated in sufficient numbers over here then. But it is not so now. A number of these agricultural colleges are now turning out excellent young men every year, and it is only natural that any people should give the preference to the graduates of their own schools when these are available. Take, for instance, what is termed the long course in agriculture at our university here. It covers four years after the course of the school of agriculture is completed, that is to say, it covers seven years in all. Now, when a young man has thus prepared himself, he is certainly more likely to be chosen to fill one of those positions than one who has given but three years to such preparation. Graduates are already going forth from the university here in the course under consideration, and they will so continue to flow from this institution in a continuous succession. And the same is true of other institutions in various states of this republic.

Notwithstanding, young men who are going to live by farming should take the third year's course. It will make better men of them. The knowledge which it brings to them is helpful, not only in the sense in which all knowledge is helpful, but it is helpful because of the more or less direct bearing which it has upon the work of the farm.

Agriculture furnishes a magnificent field for the exercise of the highest powers which any man may possess. Think twice, then, young men, before you leave it. Great problems are yet to be wrought out, and more especially in this western country, with its almost illimitable possibilities. When these problems shall have been wrought out, even in part, the competition from the central portion of this great continent will be keener than ever before. If Ontario, therefore, is to maintain the high position which she now occupies as an agricultural country, her young men must carefully equip themselves for the work.

THOS. SHAW.

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Green Manuring.

By JAS. MILLER, Brougham, Ont.

Green manuring is the plowing in of green crops in their living state, or green vegetables spread on the land for that purpose. This subject requires careful consideration on account of its importance to the farmer for many reasons, some of which we will now endeavor to make plain. The sap contains many compounds of nitrogen, which not only cause the rapid decay of the plant itself, but have the power to decompose the elements of other organic matters with which they come in contact. Not so with the dry plant, which requires an agency outside of itself to decompose it. Again, if the green plants be allowed to dry in the air, the saline matter they contain is gradually given up as the rain falls upon it, and it is lost by evaporation; but, if buried beneath the surface, it is restored to the land.

The practical results obtained by green manuring are the following:

(1) When the land is in such an exhausted state that the farmer cannot obtain animal manure enough to keep up the fertility of his whole property, growing plants for a manure brings up from beneath, as far as their roots extend, those organic and inorganic elements upon which the plants feed, and stores them up in their substance, and, when plowed down, they are near the surface again.

(2) The greatest amount of good is obtained by plowing the plants down in their green state, as there is already a loss, by evaporation, of both the organic and inorganic substances if exposed to the air after cutting. If eaten off, even by animals, there is a loss in converting the plants into manure, so that in no other form can the same crop convey to the soil an equal amount of enriching matter as in that of green leaves and stems.

(3) The beneficial action is almost immediate, as green plants decay rapidly, and they thus allow the first crop sown afterwards to reap the full benefit. This is very clearly seen, in latter years, upon land alternately cropped by wheat and alsike clover, in sections where this rotation is practised, and the land is becoming richer and being built up.

(4) By the bringing up of the lime and other elements from beneath, the straw is strengthened in the succeeding crops, and yields a larger proportion of grain to the amount of straw than animal manure would accomplish, and rust is, therefore, to a large extent, if not entirely, avoided by the available increase of lime, the straw being made thereby more healthy.

(5) It has the most beneficial results upon soils that are poor in vegetable matter, on account of the large percentage of organic matter captured from the air. I refer more particularly to light sandy or gravelly soils, and stiff clays.

It will be perceived, from what has been written, that, to carry on a system of green manuring to the greatest advantage, two main things are to be considered:

(1) We should sow those plants that will grow the most rapidly, and produce the most vegetable matter, in a given time and at the smallest expense.

(2) We should also select those plants whose roots will penetrate the deepest into the earth, bringing up those substances which have gradually worked themselves down to the subsoil. These two considerations should go together.

The crop for this purpose which is, undoubtedly, the best for the Canadian farmer is either red or alsike clover. Clover, as a general thing, can always be sown with a profit along with the grain in the spring, even if it should be plowed down in the fall again. And the ordinary farmer, who sells the bulk of his grain on the market, should green-manure his land extensively, as the nitrogen and other substances are carried off with his grain, and his manure is not of a rich quality.

Buckwheat is a very good crop to grow for green manure. Two crops can be easily grown and plowed down in one season, but it has not the good qualities of the clovers in gathering nitrogen. But, on account of the great amount of carbon the stem and leaves contain, it produces a great heat in the soil, caused by the rapid decay of the plants. This heat destroys the seed germ of many weeds that may be in the ground, so that buckwheat not only enriches the soil, but cleans it as well.

Rape and turnip seed, sown thickly, are other crops that can be sown to advantage. Two or three of these crops can be sown during the season on the summerfallow.

The farmer has several things to consider in growing green crops for a manure. For instance, the plants should be plowed under before they blossom, as otherwise there is a great deal of nitrogen given up while the plants are in bloom.

Farms that are much of the time in meadow or grass do not require a green crop, as they are generally rich in vegetable matter. What is required in such soils is plenty of lime, salt, or plaster to act upon that vegetable matter to be enabled to grow the greatest crops. In such soils, that so abound in vegetable matter and have little soluble mineral matter, a large growth of straw is obtained, generally rusted, especially in wet, damp seasons, and at the expense of the little grain produced accordingly. Such straw is sappy, weak, and so diseased that the fungi readily act upon it. This may, and does, sometimes occur in impoverished land, but not so readily as in rich land, because in such land the organic and inorganic substances will be more evenly balanced. These exhausted lands may require both mineral and vegetable matter, both of which are found in our barnyard manure, if rich in quality, so that green manuring will only have a practical result as an assistant with animal manure, and, when the latter is insufficient to keep up the fertility of the farm, green manuring should go hand in hand.

From the above it will be readily perceived that no extra mineral matter is added to the soil by green manuring; only those substances such as lime, potash, silica, etc., are brought up from beneath and deposited nearer the surface. But, on the other hand, organic substances, such as nitrogen, carbon, and their compounds, are extensively added by the green crop by natural laws.

Plenty of seed should be sown for a green crop, so that the ground may be well covered, and it should be only plowed under to the depth of three or four inches, so that the manure will be readily available for the young roots of the coming crop. When it is near the surface the oxygen of the air will the more