

Application of Manure.

To the Editor of THE CANADA FARMER:

SIR,—Manure bearing the same relation to the farmer as does the raw material to the manufacturer, waiting to be converted into the several products which they are destined to become constituent parts of, it is obvious that every attention should be given anything bearing on its husbandry and application to the soil. More, perhaps, has been written upon the management of manures, (and this gives evidence of its importance,) than upon any one question connected with the cultivation of the soil; and yet probably upon no agricultural topic is there such a diversity of opinion among authorities concerning many of its details. It is the humble opinion of the writer that more light can be thrown upon the many questions in dispute relating to its management, by the publication of actual experience of observing farmers and the results of experiments, than the theories and opinions of the greatest authorities. Connected with the subject are so many details that would have an effect upon the settling of any question relating to its management, as to preclude the formation of any given rules applicable to every circumstance. Some writers will advocate some special manner of procedure relative to the subject, others will argue exactly an opposite practice; each may be right, each may be wrong—great scope must be allowed for different circumstances having dissimilar effects. And this brings us to the self-evident truth, that he who would be the most successful in the cultivation of the soil, must be not only the most conversant with the details relating to the art, but able to discriminate between those likely to have an effect favourable to his particular circumstance, and “*vice versa*.” Now there is one point connected with the subject upon which all authorities agree, but which cultivators do not seem sufficiently to understand or practice, viz: the great advantage to be derived from having all fertilizers thoroughly incorporated with the soil to which they are applied. Of the various means of having this desired object performed, none are so applicable to general use, as having the manure spread upon the surface of the land to be dissolved by the rain and melted snow, and thus thoroughly diffused through all its parts, instead of being immediately ploughed in as is the usual course.

During the cultivation of our corn crop the past season, I was particularly struck with the superior growth and luxuriance of the crop in one portion of the field. Upon that part the manure had been distributed several weeks previous to its being ploughed; on the remainder of the field the manure was ploughed in immediately upon its being spread.—That part produced 25 to 50 per cent. more than any other portion of the field, although all parts had been in every other respect similarly treated. This is one of the many instances coming under the observation of the writer which go to prove that much manure is to all purposes lost by being ploughed in, placing it beyond the reach of any influence tending to assimilate it suitable for plant food.

L'Original, April 31st. 1866.

J. F. CASS.

Root Cellars.

To the Editor of THE CANADA FARMER:

SIR,—Will you, or some of your readers, give me the benefit of your experience in connection with Root Houses above ground?

My farm is admirably adapted for growing roots, but it is low and flat, and a root cellar in connection with the existing farm buildings could not be drained, if more than 2 feet deep. Accommodation for roots must therefore be provided mainly above the surface, and I am anxious to erect a substantial and thoroughly frost-proof building, without expending a dollar unnecessarily. I am sure that some of your readers have done something of this kind, while others have tried to do it and failed; and I ask you to publish this enquiry, that I, and others similarly circumstanced, may learn as much as possible from both successes and failures. Perhaps I ought to mention that my principal difficulty relates to the walls of the building. All the Root Houses above ground with

which I am acquainted have two walls 18 in., to 24 in., apart, the intermediate space being filled with earth. This plan is clumsy and expensive, and I hope to find that there is a better one. No stone wall, however thick, will keep out frost; if the two were united they would not do so; the efficacy then must be in the material with which the space between them is occupied, and I cannot help thinking that one good wall with an inside air light boarding at a little distance from it, the space between them filled with tan-bark, saw dust, muck or some other non-conducting substance, would effect the desired result at a much less expenditure of money and space than would be required by the double wall plan.

Any of your readers who have had experience in this matter, will much oblige me by narrating it.

Yours, &c.,

J. A.

NEPEAN, Co. Carleton, 28th May 1866.

STUMP MACHINE. — “Robert Gibson,” of Glenvale, writes. — In your issue of May 15th, I find an enquiry made about a Stump Machine, by “T. B.” of Sandforth. I have got a Stump Machine which I can recommend to him or any farmer in Canada. This machine is a lever power worked with a handspike, and two men are able to take up any pine stump without assistance of a team or screw. I have had a great many pine stumps on my farm, and I can fully recommend the machine to work better than any other that I have ever seen, both as to the power and the convenient method of moving it from one stump to the other. It is moved by means of an axletree fastened on the frame of the machine with two cart or waggon wheels, and drawn by horses or oxen and backed up to the stump. It is tipped up like a cart, and two men and one horse, or one yoke of oxen, can remove and work the machine. The maker of this machine is Joseph Connely, Yarker, Canada East, maker of last Improved Steel Plough; the price of the machine is sixty dollars. I hope that this information will be satisfactory.

The Canada Farmer.

TORONTO, UPPER CANADA, JUNE 15, 1866.

The Season.

SINCE our last issue, the weather has been in the main favourable for the farm and the garden. We have had some fine showers, accompanied by a moderate degree of warmth, and vegetation everywhere has made considerable progress. As compared with past years, however, the present season is extremely late. We had an auspicious seed-time, but the long continuance of cold weather retarded vegetable growth. Similar climatic conditions have obtained in Britain this spring. Our late agricultural exchanges, received per Cunard packet, state that the present has been the coldest spring the “old country” has experienced for over fifty years. In Britain, as well as in Canada, however, it is more than probable that the harvest, though late, will be bountiful.

In this country, if the weather has been somewhat unfavourable for the farmer, unquestionably our political condition has been much more so. The long-continued agitation and subsequent abortive action of a horde of despicable cut-throat vagabonds rendered it imperative that the Province should be kept on a war footing. Many of our most active and industrious agriculturists have thus been compelled to exchange the implements of husbandry for the weapons of war, and much productive labour is consequently lost to the country. We admire the patriotism displayed by our farmers, and we trust it will not be necessary to keep them much longer from their homes and their fields.

On Milk and its Adulteration.

Under the above title, a very valuable paper from the pen of Dr. Voelcker appears in the last number of the *Popular Science Review*, to which we are mainly indebted for the substance of this article.

Milk, it is well known, varies very much in its quality or composition from several causes. Among cows certain breeds yield a milk in which butter predominates; in others, a milk containing an excess of casein. Generally speaking, small races, or small individuals of the larger races, give the richest milk from the same kind and quantity of food. Where good quality is the main object, Alderneys or Guernseys are the cows that ought to be kept, for they give a richer cream than, perhaps, any others; but of course Alderneys are not the most profitable stock for cow-keepers in towns, with whom the Yorkshire cow, essentially a short horn, is the favourite breed, as it surpasses all others for the quantity of milk it yields, and readily attains to a great weight in fattening for the butcher. The milk, however, compared with that of the Alderney or Ayrshire cow, is more watery and less rich in butter.

Food, both as to quality and quantity, very materially affects the production and value of milk. In spring and the early part of summer, milk is more abundant, and yields a finer flavour of butter, than during the arid heat of summer. In this respect September and October are preferable to midsummer, particularly in a climate like Canada. A cow insufficiently fed not only produces less milk, but the quality is also inferior. Turnips impart a disagreeable flavor to milk, and when given in large quantities produce a very watery milk. Mangolds are much less objectionable, but they should always be given with a liberal allowance of good hay and pea meal. “It is not a little remarkable that in leguminous seeds, which are always rich in flesh-forming matters as well as in other articles of food, a large percentage of nitrogenous or flesh-forming compounds usually is associated with a large percentage of phosphates or bone earth. There exists thus naturally an admirable provision in food, specially adapted for milk cows, or young and growing stock, to supply the animal not only with the material of which the curd of milk or the flesh of young stock consist, but likewise to supply bone materials, for which there is great demand when growing stock has to be maintained in a thriving state, or cows have to be kept in a condition in which they may be expected to yield much and good milk. Oil cake produces much and rich milk, but seriously injures its quality by giving it a bad flavour.”

Bran is an excellent food for milch cows. For winter food nothing can be better than a mash made of bran and pea meal, with a moderate quantity of mangolds and good hay. Cows thus fed, with dry, clean bedding and warm byres, will yield a copious supply of rich milk during our inclement winters. Brewers' grains experience has long proved to be well suited to cows giving milk. From Dr. Voelcker's recent experiments, they possess feeding properties of a much higher order than has been usually supposed. In their wet state they hold from 75 to 77 per cent. of water, but contain a good deal of ready-made fat and flesh-forming matters. When air-dry, they contain from 7 to 8 per cent. of oil and fatty matter, and in round numbers 15 per cent. of nitrogenous matters, and in this state are more nutritious and more useful food for milch cows than barley meal in the same state of dryness.

The following table, the results of careful analyses illustrates the natural variations which may occur in the composition of equally genuine milk:—

COMPOSITION OF FOUR SAMPLES OF NEW COUNTRY MILK.

	1	2	3	4
Water.....	85.20	87.40	89.95	90.70
Fatty matter (pure butter).....	4.95	3.43	1.99	1.79
Casein (curd) (additional).....				
butter.....	3.66	3.12	2.94	2.81
Milk sugar.....	5.05	5.12	4.48	4.04
Mineral matter (ash).....	1.13	.93	.64	.66
	100.00	100.00	100.00	100.00
Percentage of dry matters.....	14.80	12.60	10.05	9.30