

A Good System with "Trust in Providence."

1.—I use cut straw for bedding in preference to uncut; have used forest leaves and sawdust, but think cut straw more convenient to handle.

2.—Think there is no advantage in having manure made in box stalls, but rather the contrary, unless there is an abundant supply of bedding to keep the animals clean. If sufficient bedding is used, then portions, especially around the walls, will remain dry and unsuitable to apply to the land. On the other hand, the ordinary cow stall is not always provided with a water-tight gutter to save the liquid manure, and if not, then there would be an advantage in the box stall.

3.—It would largely depend on how the manure was to be disposed of. If drawn directly from the stables and spread on the land at once it would hardly pay for the extra trouble in handling to mix it before applying. If, however, it is drawn to field and placed in large heaps to remain so until spring, or if allowed to accumulate in considerable quantities in the barnyard before being drawn to the field, two advantages would be secured: 1st, uniformity of quality, and, 2nd, more convenience in handling, as the comparatively light horse manure would render the solid and heavy manure from the cow stable more porous and easier to spread evenly.

4.—By the liberal use of absorbents and applying directly to the land, and not allowing the manure to ferment in heaps either in the field or sheds.

5.—I think, as a rule, manure loses in value in proportion to the amount of fermentation that is allowed to take place. Formerly I was in the habit of hauling to the field in winter and piling in large heaps so as to induce fermentation to destroy foul seeds, and rot the straw portions, but now think there is loss accompanying the escape into the air of the gases formed as fermentation proceeds; also rains wash in the soil where the heap stands more than its share of fertilizing material, and when the straw used for feed and bedding is cut it will not interfere with the cultivation of the soil. The pile in the yard should be under cover to prevent leaching by rain, as it is a much greater expense to provide a water-tight yard basin large enough to hold the combined accumulation of manure, snow and rain than to have a suitable shed where the cattle can tramp the manure and thus prevent fermentation, and at the same time it will be protected from the elements.

6.—I have adopted the practice of hauling the manure to the fields and spreading it on the surface during winter, regardless of the depth of the snow, and think it the most labor-saving method. Where land is comparatively level, I think there is little loss, but on hilly ground it would be objectionable, as rain would wash a good deal of it away. On hilly ground I would save the manure under cover till the frost was out of the ground in spring, then haul the manure, spread on the surface and plow or cultivate in at once.

7.—To all hoed or cultivated crops, such as corn, potatoes, roots, beans, and rape, and to wheat and barley, unless the land was manured for the previous crop. If manure is free from foul seeds I find it a very successful plan to spread during the winter or spring on fall plowing, cultivate thoroughly into the soil, and seed down to grass, using wheat or barley as a nurse crop. This method almost invariably insures a good "catch." If the manure contains weed seeds I would plant with a hoed crop and thus be able to prevent the growth of weeds by cultivation after the seeds had germinated.

My ideal method is to save manure under cover, prevent fermentation, and spread on land shortly before seed time, cultivate thoroughly, sow good seed in proper season, keep your fences in safe repair, and trust in Providence for the rest.

D. P. L. CAMPBELL.

Prescott Co., Ont.

Advanced Methods of Manure Handling in Quebec.

1.—We use mostly the uncut straw; having fifteen box stalls, then the horse and cow stables accommodating twelve horses and thirty cows tied up, it would take quite a time to cut all the straw used. Otherwise, I prefer all cut, as the manure could be spread easier and go further, as where there are no bad weeds it could be spread on without any heating or fermenting process.

2.—I believe the best manure is made in box stalls.

3.—I consider it is of great importance to mix manure from the different kinds of stock; the horse manure, if alone, is very apt to heat or "fire-fang"—in that case it loses its value; the cow manure, if put alone, will freeze and can't be hauled out during the winter, but when well mixed and

allowed to heat for say eight days, then drawn to the field where to be used, a great deal of labor is saved.

4.—I find no trouble in saving the liquid manure by using enough straw to absorb it, causing little or no loss.

5.—I think it is better that manure should ferment, especially if the bedding used is uncut. Mix all the different kinds together in a pile near the yard and draw to the field direct, say every week. If the snow is not too deep, spread it right on; but if deep, I prefer putting it in a large pile or heap, then it can be drawn and spread early in spring before vegetation commences.

6.—If, as stated above, the bedding is cut, or even uncut, I would spread it right on. Last win-

The liquid manure is most easily saved by the use of absorbents, such as straw, dry muck or sawdust. While cut straw will absorb considerably more liquid than that uncut, I do not think it would pay for the labor. The plan I use myself is to bed my horses heavily and to clean out all soiled straw. The horse manure is then spread in wide, deep gutters behind the cattle, and I find that all the liquid is taken up and at the same time the horse and cow manures are evenly mixed.

Box stalls are very convenient, especially for young cattle, and more straw can be worked up into manure in them than in the ordinary tie stall, but except that the labor of cleaning them daily can be saved, I do not think they offer any advantage, and even with them the manure should

be forked over once or twice before being hauled to the field. In my own case I have them cleaned three or four times during the winter, and mixed with the other manure.

I have never spread fresh manure on frozen ground, but I should think that under certain conditions it would be the best way of using it. If the ground were dry and pretty level, with not much snow, I believe it would be of great advantage and save much labor at a very busy time; but if the ground were wet or hilly, thereby allowing much water to run off upon the surface, most of the manure would be lost. In most cases I think greater benefit would be derived from allowing the manure to heat and ferment and applying it in the spring.

I think manure should be used on a hoed crop, to be followed by a grain crop seeded down to grass. If any special manures are used they should be applied with the last crop. This is my general plan, with many exceptions. Living down by the sea as I do, I am often able to gather large quantities of kelp (sea weeds) in the fall (this year I have about 400 loads), and when I have this I put in my root crop with it, and apply the stable manure to the grain crop following.

JOHN GREGORY.

Antigonish Co., N. S.

"My Way of Handling and Applying Manure."

1.—Uncut straw; it would take too much time to cut. I use abundance of straw for bedding.

2.—Considerable advantage in making manure in box stalls; can make manure faster, with less waste, but must be cleaned out often or it will not be good for the stock running in them.

3.—If manure lies in yard or under shed, horse and cattle manure should be mixed; but if hauled out from stables to field, put horse manure in the hollows or low places of fields and cattle manure on knolls and hills, and put pig manure on the poorest spots; spread evenly.

4.—By using lots of straw and raking all the fine stuff in trenches.

5.—No; I would try to keep it from fermenting.

6.—Generally spread from 12 to 15 acres with fresh manure when ground is frozen; it saves labor in summer, when a farmer is always busy, and no manure is lost.

7.—Peas, corn, and all roots. I sow the field I get covered with manure in winter with peas. In early spring I cover my corn and root ground with manure, and what is left and made after that I put on the summer-fallow.

J. H. JULL.

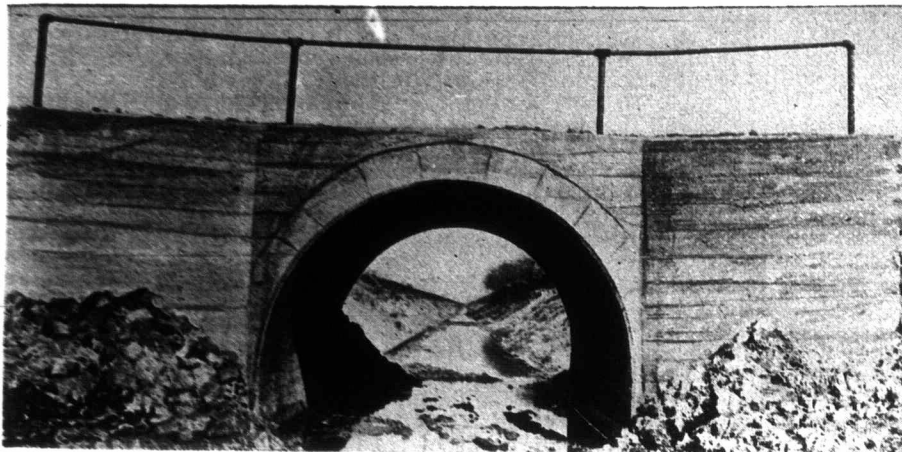
Brant Co., Ont.

Cement Concrete in Road Work.

In many sections cement concrete has largely displaced expensive masonry and revolutionized the construction of barn walls, floors, and other farm structures during late years. With the use of Queenston and other good cements for the above purposes hundreds of farmers are now familiar and thoroughly satisfied. A little has also been done in cheapening the cost of building culverts and other road structures of the sort by municipalities instead of using the more expensive and often unsatisfactory sewer pipes or large tiles. It is a matter that do well to investigate.

The accompanying illustrations give an idea of the plan and appearance of such work. They represent a concrete arch over a small stream in the Township of Gosfield, near Kingsville, Ont. The work was laid out and superintended by Mr. Isaac Usher, of Thorold, Ont., who, we understand, is giving his services freely in that respect. Queenston cement and coarse gravel were used in the proportions of one of the former to four of the latter. Mr. Usher has written us the following description of how the work was done, which will be of service to others:—

"The foundations for bench and wing walls were excavated about three feet below the bed of the stream to very hard, solid clay, so there is no



CEMENT CONCRETE ARCH OVER STREAM, ESSEX COUNTY, ONT.

ter we drew it direct from the box stalls with good results. It is labor-saving; also, manure-economizing.

7.—We have had good results from top-dressing pasture in winter or early in spring; it will carry lots of stock, leaving the sod with a close bottom to be plowed under the next fall. Our land so used will grow any kind of crop; ensilage corn does well without any further manuring, in most years averaging ten feet in length and producing in some cases thirty tons per arpent (French term for acre).

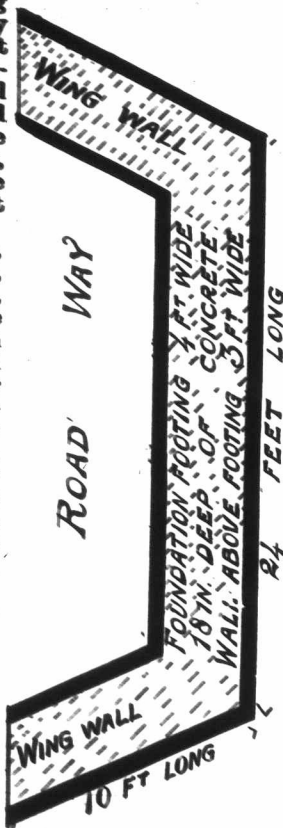
ROBERT NESS,

Chateauguay Co., Que.

"Woodside Farm."

Nova Scotia Methods of Manuring.

I consider it highly important that manure be kept under cover, so as to protect it from all washing and leaching, and also that the manure from different kinds of stock be mixed together. A



OPENING FOR STREAM
16 FT WIDE

GROUND PLAN CEMENT CONCRETE ARCH.